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The Relationship of Perceived Trust and Perceived Stress Among Pregnant Women Receiving Care From a Certified Nurse Midwife

Maria Torchia Logrippo

THE RELATIONSHIP OF PERCEIVED TRUST AND PERCEIVED STRESS AMONG PREGNANT WOMEN RECEIVING CARE FROM A CERTIFIED NURSE MIDWIFE

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DEDICATION

I dedicate this work to the honor of my parents,

Thomas Joseph and Anne Bernadette Torchia.

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ABSTRACT

THE RELATIONSHIP OF PERCEIVED TRUST AND PERCEIVED STRESS AMONG PREGNANT WOMEN RECEIVING CARE FROM A CERTIFIED NURSE MIDWIFE

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BACKGROUND: The "with woman" philosophy practiced by certified nurse midwives (CNMs) encourages the formation of personal, collaborative and trusting relationships with pregnant women.

METHODS: The purpose of this descriptive correlational study was to examine the relationship between the pregnant women's perceived trust with CNMs and perceived stress using self-reports and questionnaires. Using the Bice and Boxerman (1977) Continuity of Care Index, the study also explored the effect of continuity of carer on perceived trust and perceived stress.

RESULTS: Of the 91 pregnant women participating in the study, data was collected from 41 English speaking and 50 Spanish speaking participants using the Health Care Relationship Trust Scale-R (HCR-R; Bova, Route, Fennie, Ettinger, Manchester, & Weinstein, 2012), Perceived Stress Scale (PSS; Cohen, Kamarck & Mermelstein, 1983) and a demographic information form. Psychometrics are presented on the established PSS tools used in both English and Spanish as well as the English version of the HCR-R and the newly translated Spanish version. Descriptive and non-parametric inferential statistics were performed and analyzed. The One-way analysis of variance (ANOVA) method was also used to examine the effect of continuity of carer. Study results revealed a significant difference on perceived stress reported by English and Spanish speaking women [$t(89) = 2.43$, $p = .017$] with the Spanish speaking group reporting less perceived stress than the English speaking group. Important differences existed for educational status, pregnancy history, social support and perceived stress among the two groups. For both English and Spanish speaking groups, pregnant women with higher perceived trust had less perceived stress. For English speaking pregnant women, a significant effect on continuity of carer on perceived trust [$F(2,38) = 3.20$, $p = .05$] was also revealed.

CONCLUSIONS: This study provides a quantitative measure of collaborative trust involved in the relationship between a pregnant woman and a CNM. The evidence of high perceived trust reported by both English speaking and Spanish speaking women emphasizes the value of nurse midwifery care during the prenatal period. In addition, low perceived stress also reported in this study provides evidence for positive outcomes for women choosing CNMs for prenatal care.

Chapter I

INTRODUCTION

Trust is an essential component in the development of the patient/provider relationship and a critical element in the forming of a caring relationship between nurses and patients (Berg & Danielson, 2007; Domian, Baggett, Carta, Mitchell, & Larson, 2010; Hupcey & Miller, 2006; Hupcey, Penrod, Morse, & Mitcham, 2001). Meize-Grochowski (1984) described trust as "an attitude bound to time and space in which one relies with confidence on someone or something"(p.567). Nurse midwifery care describes trust as a pivotal factor in the forming of the relationship between a mother and midwife (Kennedy, 1995, 2000; Kirkham, 2000, 2010). Kennedy (1995) expressed that it is the "establishment of trust" (p.410) involved in midwifery care that allows the midwife to gain knowledge about the woman. The sharing of knowledge and the caring relationship emphasize nurse midwifery care as a "profession that does not provide care *to women*; it provides care *with women*." (Kennedy, 1995, p.410) Kennedy's theory of exemplary midwifery care (2000) proposes a dimension of caring by midwives which include aspects of trust and respect. Other qualities related to the trust involved in the mother-midwife relationship include mutuality, collaborative care, the sharing of personal feelings, empathy and feelings of satisfaction (Edwards, 2000, 2005; Ferszt & Erickson-Owens, 2008; Ny, Plantin, Karlsson, & Dykes, 2007; Seefat-vanTeeffelen, Nieuwenhuijze, & Korstjens, 2011). Qualities like trust, respect and the sharing of

personal feelings represent important attributes for the caring relationship between a woman and nurse midwife.

A woman and certified nurse midwife (CNM) often develop a relationship during the prenatal period, as the CNM supports the woman through the natural processes of pregnancy and the childbirth experience. Embracing the "with woman" philosophy, the nurse midwife provides supportive care during pregnancy that focuses on the individual woman's needs and personal feelings (Carolan & Hodnett, 2007). This philosophy allows the CNM to focus on both the physical and psychological well-being of the pregnant woman while meeting the individual woman's personal needs. CNMs offer routine prenatal care (PNC) such as screening for risk factors, education and counseling (Institute for Clinical Systems Improvement, 2010) as they help women to manage the pregnancy, identify stressors and discuss coping resources (Alderdice & Lynn, 2009).

During prenatal visits, a CNM assesses and identifies prenatal stress (PNS), which is the stress that affects the woman's ability to control her life, to perform tasks and daily activities, and to participate in optimal health care during the prenatal period (Alderdice and Lynn, 2009). Women with little or no prenatal care utilization (Roman et al., 2010; Sable & Wilkinson, 1999), women in an abusive relationship or at risk for abuse including substance abuse (Curry, 1998; Curry, Durham, Bullock, Bloom & Davis, 2006), and/or women living in poverty or having financial hardships (Daniels, Noe & Mayberry, 2006; Larson, 2007; Milligan et al., 2002) are more vulnerable for increased levels of stress during pregnancy. Poor pregnancy and

childbirth outcomes such as having a baby with a lower birth weight (LBW) or a preterm delivery (PTD) have been associated with stress during pregnancy (Glynn, Schetter, Hobel & Sandman, 2008; Humenick & Howell, 2003; Lobel, Cannella, DeVincent, Schneider, Graham, & Meyer, 2008; Nkansah-Amankra, Luchok, Hussey, Watkins & Liu, 2010). Researchers examining data collected from the 2000–2003 South Carolina Pregnancy Risk Assessment and Monitoring System (PRAMS) reported a higher risk of having a LBW infant among women who reported emotional, financial, spousal, and other traumatic stresses (Nkansah-Amankra et al., 2010). In addition, maternal adjustment difficulties (Holub, Kershaw, Ethier, Lewis, Milan, & Ickovics, 2007), problems with infant and child temperament and behavior (Grizenko, Shayan, Polotskaia, Ter-Stepanian, & Joober, 2008; Gutteling et al., 2005) and the development of childhood diseases like insulin resistance (Entringer et al., 2008) have been examined in relation to the presence of stress during pregnancy. Such studies suggest that stress during pregnancy may contribute to negative outcomes for mother and infant.

A number of studies involving nursing and midwifery care highlight the role of the health care provider in helping pregnant women to deal with stress. Qualitative findings from focus groups of pregnant women in the Netherlands revealed that women desired support by midwives in dealing with stress (Seefat-vanTeeffelen et al., 2011). The psychosocial support, described by these participants, involved "a good relationship with their midwives, based on trust, respect and equality" and "was essential for sharing personal feelings" (Seefat-vanTeeffelen et al., 2011, p. e125).

Findings from a secondary analysis of qualitative studies by Lundgren and Berg (2007) suggested that trust serves as a source of strength and security supporting the woman's self-esteem and allows the woman to manage the childbirth process. The work of Lundgren and Berg (2007) on the midwife-mother relationship revealed that "to mediate trust to the woman means that midwives promote a trustful relationship." (p.223) Other studies emphasize the role of the trusted nurse/midwife in helping women deal with the fear of childbirth, where the nurse/midwife serves as a source of support during pregnancy to help a woman have a positive birth experience (Lyberg & Severinsson, 2010; Nilsson, Bondas & Lundgren, 2010). Evidence suggests that supportive care by nurse midwives plays an important role in helping women have a positive health care experience while lessening the potentially negative effects of conditions like prenatal stress.

Various studies examining the mother-midwife relationship have suggested important factors that might contribute to developing trust. One such factor is the aspect of the *continuity of carer* or receiving care from the same midwife. While midwives felt "they could establish trust with a woman they had never met before and could still provide exemplary care" (Kennedy, 2004, p.508), women in Kennedy's study (2004) reported that seeing the same midwife allowed them to engage in a caring relationship. Another study of midwifery care by Edwards (2000) stressed the need for time to get to know one another as an essential component in the mother-midwife relationship.

The importance of the continuity of carer and continuity of care (COC) have been highlighted in the nurse/midwifery care literature (Anna Frei & Mander, 2011; Green, Renfrew & Curtis, 2000; Leap, Sandall, Buckland & Huber, 2010) Green and colleagues (2000) stressed that continuity of care (COC) should be distinguished from continuity of carer in that COC refers to good communication and consistent policies evidenced in the health care experience, while continuity of carer refers to provider continuity. Freeman (2006) examined continuity of carer in a review of the literature on midwives and their partnerships with women. Her findings suggested that there is limited data on continuity of carer and a need for further exploration. In addition, Freeman (2006) highlighted the partnership models of practice in midwifery where results of continuity of carer involved the forming of collaborative relationships, personal and intimate relationships with midwives, and friendships between women and midwives.

The Problem

The presence of stress during pregnancy has been associated with potentially negative outcomes for mother, infant and family (Glynn et al., 2008; Humenick & Howell, 2003; Lobel et al., 2008; Nkansah-Amankra et al., 2010). The "with woman" philosophy practiced by CNMs encourages the formation of personal, collaborative and trusting relationships with pregnant women. Studies have suggested that if a pregnant woman feels safe and confident in the midwife's ability and knowledge, it may help in addressing and managing stress and stressful situations during pregnancy (Lyberg & Severinsson, 2010; Nilsson et al, 2010; Seefat-vanTeeffelen et al., 2011).

This study will examine the relationship between perceived trust and perceived stress by pregnant women and what effect the continuity of carer may have on that relationship.

Purpose

The purpose of this study is to describe pregnant women's perceived trust with CNMs as they receive PNC and the relationship of the perceived trust with perceived stress. To date, there are no studies that measure the perceived trust between a pregnant woman and midwife, and no studies that describe the relationship of that trust to perceived stress. In addition, there is a dearth of quantitative research in nursing and midwifery care that identifies a quantifiable measure of continuity of carer, with no research examining the effect of continuity of carer on perceived trust and perceived stress.

Definitions

Pregnant woman in this study refers to a woman who receives prenatal care (PNC) from a CNM at a community health center at a minimum of three visits and in the third trimester of pregnancy.

Certified nurse midwife or certified nurse midwives (CNM or CNMs) refer to the healthcare provider(s) who attend to the pregnant women and provide PNC at the community health center. In NJ, the CNM is a registered nurse and holds certification from the American College of Nurse Midwives (ACNM) or the American College of Nurse Midwives Certification Council (ACC) or other succeeding body (New Jersey Registrar, 2003). The ACNM, for example, outlines a philosophy for the practice of

nurse midwives in the US to include a model of health care for a woman and her family that promotes a continuous and compassionate partnership (ACNM, 2010).

Perceived trust refers to the degree to which the woman feels safe and confident in the CNM's knowledge and ability. The conceptual definition is derived from Kennedy's model for exemplary midwifery care (2000) that describes the outcome of the dimension of caring as providing a health care experience that is respectful and empowering. Bova and colleagues (2012) created the Health Care Relationship Trust scale-R (HCR-R) that measures collaborative trust and will be utilized to measure the perceived trust with CNM.

Continuity of carer is conceptualized as seeing the same CNM during the prenatal period. Continuity of carer is operationalized in this study using the Continuity of care (COC) index (Bice & Boxerman, 1977) which includes a total number of PNC visits, the number of PNC visits to the same CNM and the total number of all visits to each CNM during the prenatal period.

Perceived stress refers to the degree to which the pregnant woman feels that coping resources are inadequate to deal with life experiences and events that are demanding and threatening. The definition of stress comes from the work of Cohen, Kamarck and Mermelstein (1983) and Cohen and Williamson (1988) who defined stress as the degree to which situations in one's life are appraised as stressful. This appraisal of stress is depicted by "how unpredictable, uncontrollable, and overloaded respondents find their lives" (Cohen & Williamson, 1988, p.33-34). Self-reports by the pregnant woman of experienced stress are operationalized in this study using the Cohen's

Perceived Stress Scale, PSS (Cohen, Kamarck & Mermelstein, 1983; Cohen & Williamson, 1988).

Delimitations

Eligibility criteria for participation in this research study included 1) the ability to read, write and understand English and/or Spanish, 2) ages 18 or older, 3) having at least 3 previous PNC visits with CNMs at the community health center 4) third trimester of pregnancy and 5) report of no history of depression or maternal complications. A pregnant woman with a history of depression or maternal complications will be excluded since psychological factors such as depressive symptoms (Beck 1996, 2001) and severe nausea and vomiting during pregnancy (Chou, Avant, Kuo & Fetzer, 2006) could have an influence on study variables (e.g., perceived stress) and have implications on study participation.

Theoretical rationale

The theoretical framework for this study is derived from Kennedy's model of exemplary midwifery practice (2000) describing the dimension of caring and the processes involved with that care. Kennedy's (1995) research on midwifery suggests that a caring relationship is established through trust. Kennedy's (1995) model used a phenomenological approach to capture the essence of nurse-midwifery care. Interview data from six women receiving midwifery care indicated that trust was a prevailing theme and an important aspect of their relationship with the midwife.

Kennedy (2000) added depth to the model of nurse midwifery care through her qualitative research using Delphi method involving a sample of exemplary

midwives and women receiving care from these midwives. Through this work, Kennedy (2000) described a midwife's philosophy of caring for and about the woman. Three dimensions of providing exemplary midwifery care are illustrated in the model and include therapeutics, caring, and the profession of midwifery (Kennedy, 2000, 2004). Reflected in the dimension for caring, Kennedy's (2000) model included the qualities and traits of exemplary midwives as being "trustworthy" and "reliable" (p.19). The term "trustworthy" is often used interchangeably with trust. Sellman (2006) discussed trust and trustworthiness as relevant to the patient/nurse relationship.

Kennedy (2000) described processes involved in the dimension for caring to include 1) respecting the uniqueness of the woman and/or her family, and 2) creating a setting that is respectful and reflects the woman's needs. Supporting statements for these processes included feelings by the woman and family of being well-cared for and safe, empowered, active participants in health care, satisfied with care, prepared for and in control of the birth or health care experience (Kennedy, 2000). These processes, as depicted in Kennedy's (2000) exemplary midwifery care model, would result in the outcome of health care and birth experience that is respectful and empowering. The dimension of caring is further described in a narrative study by Kennedy (2004) which followed the Delphi research. Here, Kennedy (2004) described the dimension of caring as grounded in "mutuality between midwife and woman" and "enacted by respect" (p. 508) and added deeper meaning to the relationship between a mother and midwife. Kennedy (2004) stressed how the

narrative analysis helped to focus on the relationship in this dimension of caring as a partnering, evident in the Delphi study as 'works as a partner with the woman' (Kennedy, 2000).

The emphasis on respect, evident in Kennedy's (2000) exemplary midwifery care, is illustrated in a measure for collaborative trust developed by Bova, Fennie, Watrous, Dieckhaus, and Williams (2006). The development of their tool, the Health Care Relationship (HCR) Trust scale conceptualizes collaborative trust, including the six "building blocks" of trust as respect, honesty, partnership, knowledge sharing, emotional connection and professional connection. Through factor analysis, Bova and colleagues (2006) identified three domains of collaborative trust - interpersonal connection, respectful communication and professional partnering. Each domain described in the HCR Trust scale identifies important attributes of trust described by the dimension of caring from Kennedy's (2000) exemplary midwifery care model.

Research Questions

What is the relationship between a pregnant woman's perceived trust with a certified nurse midwife and a pregnant woman's perceived stress?

Does continuity of carer during the prenatal period influence a pregnant woman's perceived trust with a certified nurse midwife and a pregnant woman's perceived stress?

Significance

This study will explore the relationship between the pregnant woman's perceived trust with CNM and her perceived stress as well as the effect of continuity

of carer on this relationship. Past studies have examined the midwife's role in supporting and promoting optimal health and wellness through minimizing medical interventions and reducing costs (Cragin & Kennedy, 2006; Vedam, Stoll, White, Aaker, & Schummers, 2009; Visintainer, Uman, Horgan, & Ibald, 2000). This study will help to understand trust involved in the mother-midwife relationship, and may have implications for practice and models of care involving maternal health.

Along with practice implications, the identification of a measure of trust depicted in the mother-midwife relationship also provides evidence for theory building related to trust and trusting relationships in nursing care. In 2010, the U.S. Census Bureau reported that 46.2 million people were living in poverty in the US with the official poverty rate at 15.1 % (US Census Bureau, 2011). Evidence that identifies the supportive role of the CNM in promoting wellness and establishing a trusting relationship in poorer communities will provide support for the value of the care provided by CNMs in addressing disparities that exist throughout the US. In addition, this study can help to provide evidence for future research and grant funding that helps to promote programs of research that explore the role of the trusted midwife, trusting relationships and effects of continuity of carer.

Chapter II

REVIEW OF THE LITERATURE

This chapter will review conceptual and theoretical perspectives on the concepts of trust, health care relationship trust, midwifery care, prenatal stress and continuity of carer. Empirical evidence demonstrates overlapping of these key concepts as well as evidence for gaps in the literature. A literature search was conducted using the following electronic databases: CINAHL, MEDLINE, PubMed, Science Direct, ProQuest, JSTOR and Ebsco. The terms as *"nurse-midwifery care"*, *"prenatal care"*, *"certified nurse midwife"*, *"trust"*, *"health care relationship trust"* and *"patient provider trust"*, along with the terms *"stress"*, *"prenatal stress"*, *"continuity of carer"*, *"continuity of care"*, and *"maternal prenatal stress"* were searched separately and in combination in English language peer-reviewed journals published from 1983 to 2013. Additional articles were reviewed using reference lists of published journal articles. Both quantitative and qualitative research studies were included.

Research related to midwives and nurse midwives is included even though this research study of perceived trust by pregnant women will address only CNMs. Some research on nursing and midwifery care does not distinguish if the midwives in the study are also nurses. However, these studies are included because of their significance to the variables of trust, stress and continuity of carer. This distinction was discussed with expert researchers in the field of nurse midwifery care. In order to

study the role of the CNM in the relationship with pregnant women, the research on midwifery care and nursing are both relevant.

Trust

Studies exploring trust are found throughout the social sciences, medical and nursing literature. Erikson (1963, 1968) proposed a developmental theory identifying trust as a key component for human development. Erikson's (1963) theory described eight psychosocial stages beginning with the first stage, trust vs. mistrust. In this first stage, trust is referred to as "confidence" and depicted as "an infant's willingness to let the mother out of sight without undue anxiety" (p.147). In his later work, Erikson (1968) expounded on the concept of trust in a theory of identity that involved "a pervasive attitude toward oneself and the world derived from the experiences of the first year of life." (p.96) Erikson's theories (1963, 1968) stressed the evolutionary nature of trust and the importance of trust on human development.

Additional theoretical perspectives on trust describe its meaning in a social context, highlighting the role of trust in forming social relationships and the impact of trust on society. Coleman (1988) discussed a theory of social capital that described trust and trustworthiness in the context of social structures including social norms, rules and obligations. Fukuyama (1996) detailed a theory of trust emphasizing the role of trust in forming relationships and developing social capital. In this theory, Fukuyama (1996) focuses on the influences of cultural norms, behaviors and social values on trust, as well as the influence of trust on societal and economic institutions. In *Bowling Alone*, Putnam (2000) presented a theory of social capital that emphasizes

how interactions of individuals such as belonging to associations and engaging in civic participation affect society and the role that trust plays in these interactions. Putnam's (2000) survey data revealed poorer neighborhoods with low levels of social capital had lower levels of trust, less positive norms and fewer community associations. The theories on social capital and human development emphasize an approach to the study of trust through a social orientation, stressing the significance of social factors on trust.

Empirical evidence examining trust in a social context also suggests the influence trust has on self-related health care behaviors like sharing information and communication, adapting healthy norms of behavior and exerting social control over negative behavior (Kawachi & Berkman, 2001; Kawachi, Kennedy & Glass, 1999; Kawachi, Subramanian & Kim, 2010; Subramanyam, Kawachi, Berkman, & Subramanian, 2009). According to Kawachi, Kennedy and Glass (1999), survey respondents living in states reporting low levels of trust were more likely (OR=1.41, 95% CI [1.33, 1.50]) to report perceived health as poor or fair compared to those people who lived in states with higher levels of trust. In addition, states with the lower levels of trust reported the highest percentage of individuals who identified fair or poor health (19.1%). Trust was measured in this study by the response to a survey item from the General Social Survey, "Generally speaking, would you say most people can be trusted?" (Kawachi et al., 1999). The use of such a measure demonstrates efforts by researchers to link generalized trust to health-related behaviors and outcomes.

Trust in health care. Further review of the literature was examined to identify a more accurate measure for the kind of trust involved in the relationship between a woman and CNM. Conceptual and theoretical perspectives as well as empirical evidence were examined to reveal an appropriate measure for perceived trust by pregnant women. Evidenced in the medical literature, researchers examining trust involving a patient and a physician most often described interpersonal trust, or the trust that develops between two persons (Calnan & Rowe, 2006; Dibben & Lean, 2003; Hall et al., 2002; Jacobs, Rolle, Ferrans, Whitaker & Warnecke, 2006; Thom, Hall & Pawlson, 2004). Thom & Campbell (1997) presented findings from an exploratory study of focus groups with patients (N=29) in an effort to understand components of trust involved in the patient-physician relationship. Caring was one component of trust identified in this work and it was depicted as a concern for comfort, putting the interest of the patient first, and empathy (Thom & Campbell, 1997). A conceptual definition of interpersonal trust, "the acceptance of a vulnerable situation in which the truster believes that the trustee will act in the truster's best interests" (Thom et al., 2004, p. 125) reveals a sense of vulnerability and risk involved in the relationship between patient and physician. Other attributes identified by patients for a trusted physician are presented in the literature and include competence (Jacobs et al., 2006; Thom et al., 2004), fidelity, loyalty, and fiduciary duty (Thom et al., 2004).

Along with the conceptual definitions of interpersonal trust, there are a number of studies that identify methodological approaches for understanding trust

between a patient and healthcare provider. Using a path analysis approach, an early work by Caterinicchio (1979) proposed measuring interpersonal trust involved in the patient-physician relationship to examine its relationship to patient outcomes like patient anxiety and pain. Researchers have since studied trust to determine key components and factors involved in the trust between a patient and health care provider (Hall, Dugan, Zheng & Mishra, 2001; Hall et al., 2002; Kao, Green, Zaslavsky, Koplan, & Cleary, 1998) and consequently, to suggest appropriate measures for trust including Anderson and Dedrick's (1990) Trust in Physician scale, Kao questionnaire (Kao et al, 1998) and Safran questionnaire (Safran et al., 1998). One example of these works includes the review of the literature on trust involving physicians by primary care patients by Hall and colleagues (2001). From their research, the researchers presented a conceptual model that identified five dimensions of trust including fidelity, competency, honesty, confidentiality and global trust. Their work was derived from expert panel review, focus groups and pilot testing in an effort to generate items for the tool, the Wake Forest Physician Trust scale (Hall et al., 2001, 2002). The initial tool was validated using a randomized national sample and a regional sample of managed care patients, resulting in a 10-item instrument with excellent reliability in both the national sample (α= .93) and the regional sample (α= .92) (Hall et al., 2002). The work of Hall and colleagues (2001, 2002) provides important contributions to the study of trust grounded in a primary care model and offers a reliable measure of trust between a patient and a healthcare provider. However, these studies and tools were primarily designed to examine the relationship

between a physician and patient, within the context of a medical model of care. This trust is most often described as interpersonal trust involving the patient-physician relationship and is different from the kind of trust described in the nurse midwifery literature. The literature was further examined for the type of trust involving nurses and CNMs to identify measures of trust between a patient and a provider other than a physician.

Concept analyses (Bell & Duffy, 2009; Hams, 1997; Johns, 1996; Meize-Grochowski, 1984) on trust in nursing suggests slightly different attributes from those depicted in research on the patient-physician relationship. As evidenced in both medical and nursing literature, competence is regarded as a defining attribute for trust (Bell & Duffy, 2009; Hams, 1997; Jacobs et al., 2006; Johns, 1996; Thom et al., 2004). Competence includes expectations by patients that a healthcare provider will perform safe and skilled care (Bell & Duffy, 2009; Johns, 1996). Other important attributes of trust, some of which are similar to those mentioned in the medical literature, include reliability, confidence, attitude bound to time and space, goodwill to others, fragility/vulnerability and an element of risk (Bell & Duffy, 2009; Meize-Grochowski, 1984). Ham's (1997) concept analysis of trust included the attribute of empowerment in a study of trust that involved coronary care patients. This identification of empowerment as an attribute of trust is significant, recalling Kennedy's (2000) model of exemplary midwifery care that describes the outcome of the dimension of caring "as ensuring that the woman and family are well-cared for, safe and empowered". In summary, empowerment, confidence and competency were

identified in the literature as important dimensions of trust, which must be included in order to measure the pregnant woman's perceived trust with her CNM.

Thorne and Robinson (1988a, 1988b, 1989) identified a three-stage process in the development of trust in health care relationships. Through in-depth interviews with patients and families coping with chronic illness and a secondary data analysis, Thorne and Robinson (1988a, 1988b, 1989) developed a theory for the evolution of health care relationships. The researchers depicted a three-stage process that begins with "naïve trust" where caregivers described expectations for cooperative and collaborative care, involvement in care that is acknowledged and respected and acting in the patient's best interest by healthcare professionals (Thorne & Robinson, 1988a). They stressed that relationships with healthcare professionals evolved over time, in a predictable pattern and it was "reciprocal trust" that served as an essential component of a satisfying, effective health care relationship. This depiction of trust accurately illustrates the qualities and processes of the dimension of caring from Kennedy's (2000) model for exemplary midwifery care.

Evidence presented in the literature identifies key attributes of trust involved between a patient and a healthcare provider that is a nurse. Radwin and Cabral (2010) stressed attentiveness, caring, coordination, continuity and competence as attributes of trust. Their conceptual perspective comes from earlier works involving the creating of a tool to measure perceived trust by patients with a nurse, the Trust in Nurses scale (Radwin, Washko, Suchy & Tyman, 2005). The development of this tool evolved from qualitative work involving cancer patients ($N = 22$) to examine elements of high

quality nursing care (Radwin, 2000) and a larger project that presented a theoretical model depicting high quality oncology nursing care and the tool, the Oncology Patients' Perceptions of the Quality of Nursing Care scale (OPPQNCS) (Radwin, Alster, & Rubin, 2003). Desired outcomes included in the model and tool described the elements of fortitude, a sense of well-being, optimism, authentic self-representation and trust (Radwin et al., 2003). Trust, was defined as "the confidence that care would be appropriate, reliable, and as successful as possible" (Radwin et al., 2003, p. 284). Radwin, Washko, Suchy and Tyman (2005) developed a four scale instrument that included a subscale of the five-item, Trust in Nurses scale. Items were generated for the Trust in Nurses scale from previous qualitative work, existing scales and a review of the literature (Radwin et al., 2005). Content validity for the Trust in Nurses scale was reported by the researchers using expert panel and interviews with sixty-six cancer patients identified as well-educated, White females (Radwin et al., 2005). Internal consistency reliability was established ($\alpha = .81$) using the same sample of cancer patients (Radwin, et al., 2005). Radwin and Cabral (2010) revalidated the scale using a larger sample of cancer patients ($N = 187$). Although internal consistency reliability was acceptable ($\alpha = .77$), the scale only met three fit statistics criteria: comparative fit index (CFI = .994), Tucker-Lewis Index (TLI = .981), and standardized root mean square residual (SRMR = 0.02) (Radwin & Cabral, 2010). Thus, a four-item version meeting all four fit statistics along with good internal consistency reliability ($\alpha = .82$) was created (Radwin & Cabral, 2010). Although this measure does address important attributes like attentiveness, continuity,

caring and competence, concerns for use of this tool include having only four-items to measure trust and the homogeneous sample of cancer patients.

Health care relationship (HCR) trust. In 2006, Bova, Fennie, Watrous, Dieckhaus and Williams developed the Health Care Relationship (HCR) Trust scale which provides the most appropriate measure for trust involving a pregnant women and CNM, a collaborative trust. The formative work for the HCR Trust scale included individuals most at risk for lack of trust including adults with low incomes and minority groups (Bova et al., 2006). The theoretical framework for development of the HCR Trust scale comes from the work of Thorne and Robinson (1988a, 1988b, 1989). HCR trust is categorized into three domains- interpersonal connection, respectful communication and professional partnering (Bova et al., 2006). Each domain described in this scale offers similar characteristics to the processes depicted in Kennedy's (2000) model of exemplary midwifery care in the dimension of caring. The following section provides empirical evidence that describes these three domains of HCR trust as described in the nursing and midwifery literature.

Interpersonal connection. The first domain, which included two aspects of collaborative trust identified as emotional connection and honesty (Bova et al., 2006), is evident throughout the nursing and midwifery care research. Cragin (2004) presented a conceptual model for the midwifery care paradigm in the US. This paradigm included three components, the first component clearly addressing the domain of interpersonal connection. In the midwifery paradigm, Cragin (2004) described the involvement of women's views of mind, body and spirit that influence

internal and external environments, all of which she described as "interdependent" and "connections" (Cragin, 2004, p. 388). The second component, involving care from the woman's perspective, embraced a feminist view and emphasized the collaborative nature of the relationship between the woman and nurse-midwife (Cragin, 2004). Lastly, the third component described by Cragin (2004) involved a process of normalcy, focusing care on the normal processes of health and the use of natural, non-interventional care. In a later work by Cragin and Kennedy (2006) which discussed findings from a descriptive cohort study comparing medical care and midwifery care practices and outcomes, the researchers emphasized that effective midwifery care is achieved through supportive care by midwives ensuring normalcy and the limited use of technologies. The three components described by Cragin (2004) accentuate a quality of interpersonal connection inherent to the practice of midwifery care.

Kirkham (1999) examined the culture of midwifery in the National Health Service in England through an ethnographic study involving in-depth, semi structured interviews with 168 midwives. Kirkham (1999) acknowledged an "empowering" potential that arises in mothers and midwives. Through in-depth interviews with forty-three mothers and their community midwives, a pilot study and observational study of community midwives, Wilkins (2000) stressed dimensions of support and care for the normal processes and illustrated a philosophy of midwifery care as the following:

> a holistic philosophy of childbearing reunites body, mind and spirit, and focuses on the rhythms and processes of pregnancy and birth. The emphasis is on the woman's wellbeing and the relationship of trust between her and her care-givers, who support and facilitate the process through attentive nurturing. This view encompasses a trust in the woman's abilities to reproduce, sees the woman as an authoritative (expert) source of knowledge and brings into focus the social aspect of childbearing (p.62)

The emphasis on the "relationship of trust" again stresses how the practice of midwifery care seeks to engage a woman into a relationship that involves "attentive nurturing" and focuses on "the woman's wellbeing" (Wilkins, 2000, p.62). Janssen, Henderson and Vedam (2009) revealed similar findings from their qualitative research involving interviews with expectant mothers planning a home birth. Women in this study described a comprehensive approach by midwives, more than just the assessment of physical and psychological changes. It was this approach that allowed for personal, individualized care rather than just the "standard pee-in-a-cup" (Janssen et al., 2009, p.301). Kennedy's (2000) model of exemplary midwifery care also stressed that midwives provide holistic care that is personal and "meets the woman where she is" (Kennedy, 2004).

Respectful communication. Respect, the second domain, is identified as "treating the patient as an individual, making the person feel worthy of the HCP's time and effort, and protecting patients' rights, especially with respect to

confidentiality and privacy" (Bova et al., 2006, p. 483-484) is described as a key element in developing open communication in the mother-midwife relationship. Kennedy's (1995) phenomenological approach involving interviews with six women receiving care from nurse midwives revealed an *essence of midwifery care* involving a respect from midwives that promotes a woman's self-respect and empowerment. Similar findings were described in Edwards's (2000) qualitative study involving interviews with thirty women planning homebirths with midwives. Findings suggested that trust becomes a part of the relationship when there is time to get to know one another and "they wanted to be able to rely on their midwives to trust and respect their decisions" (Edwards, 2000, p.76). Edwards (2005) described the "power-from-within" for pregnant women involved in homebirths to require a mutual trust, a feeling of ease with midwives and taking time (p. 227). In the qualitative work with women and community midwives, Wilkins (2000) also stressed that the community setting is more conducive to meet the woman's more personal needs and is an essential facilitator for forming a personal relationship. Both Wilkins (2000) and Edwards (2000, 2005) emphasized important qualities of the practice of midwifery care, the time to get to know and the setting, as necessary for forming trust and allowing for respectful communication.

Respectful communication is also highlighted in the literature as supportive relationships that embrace respect and nurture its existence. Thompson, Oakley, Burke, Jay, and Conklin (1989) proposed a theory for nurse-midwifery care which identified key concepts, definitions, components and indicators of care identified

from expert panel review of six videotaped antepartum visits involving nurse midwifery care as well as quantitative survey data collected from 37 midwives. The key concepts identified in this theory include care that is safe, satisfying, respecting human dignity and self-determination, respecting cultural and ethical diversity, family centered and health promoting (Thompson et al, 1989). Petersen, Nilsson, Everett & Emmelin (2007) explored aspects of communication and barriers to prenatal care by midwives for pregnant women living in South Africa. In a grounded theory approach involving pregnant women (N=12) who smoked or had recently quit smoking, the researchers presented findings that emphasized a need for transparency and trust by women for the midwife that supported prenatal care education and counseling (Petersen et al., 2009). This study identifies communication, transparency, trust and respect as critical elements in providing care to women by nurses and midwives.

Professional partnering. The third domain of HCR trust, professional partnering, includes knowledge sharing, partnership and professional connection (Bova et al., 2006). In a qualitative study exploring the experiences of immigrant Middle Eastern mothers (N= 13) with maternal health services in Sweden, findings revealed that trust formed when the midwife was knowledgeable and empathetic (Ny et al., 2007). Competency, described as having the knowledge and ability, is characterized as a defining attribute of trust (Bell & Duffy, 2009; Hams, 1997; Johns, 1996).

Studies also identify aspects of trust and professional partnering consistent with the aim of the CNM to "meet the woman where she is" (Kennedy, 2004), respect

the uniqueness of the woman and/or her family and create a setting that is respectful and reflects the woman's needs (Kennedy, 2000). A qualitative study by Campbell-Grossman, Hudson, Keating-Lefler, Yank & Obafunwa (2009) involving two focus groups of community leaders (N=16) examined the supportive needs of single Hispanic, low-income mothers during the transition to motherhood. The findings from the focus groups were categorized into four common themes- the role of social support, the interactions with healthcare providers, barriers to trust, and practical life issues (Campbell-Grossman et al., 2009). This study represents an important consideration for the role of the nurse to provide culturally sensitive support and care to women of diverse populations and those living in poorer communities. The results of their study revealed that barriers of trust do exist for racially diverse and low-income women who lack trust in health systems and have concerns of deportation (Campbell-Grossman et al., 2009). Practical life issues were also identified as stressors facing low-income, Hispanic women, including lack of transportation and financial resources (Campbell-Grossman et al., 2009). The researchers stressed the nurse's role in assessing social needs of women transitioning to motherhood and emphasized the need for further research to examine culturally sensitive interventions that support women living in poverty or racially/ethnically diverse communities.

Evidence in the literature also identifies the supportive roles by midwives in providing care that is collaborative and culturally competent. Ferszt and Erickson-Owens (2008) described a pilot study established to support and educate pregnant women in the prison system using a collaborative model that included a nurse

midwife, social worker and mental health clinical nurse specialist. Semi-structured interviews with six CNMs stressed the need of CNMs to provide supportive care that included culturally competent care to Hispanic women living in Southeastern North Carolina (Durham & Pollard, 2010). These studies demonstrate CNMs in supportive roles that address needs of women during pregnancy.

The formation of HCR trust. Empirical evidence links the domains of HCR trust (Bova et al., 2006) and the processes of the caring dimension in Kennedy's (2000) model. In addition to processes, Kennedy's (2000) model described the outcome of the dimension of caring in exemplary midwifery care as providing a health care experience that is respectful and empowering. This outcome involving the qualities of respect and empowerment is identified in the literature to describe attributes of trust and the qualities of a trusting relationship between an individual and health care provider (Berg, 2005; Hams, 1997; Thorne & Robinson, 1989).

In the midwifery literature, Kirkham (1999, 2011) acknowledged an empowering potential that arises in mothers and midwives, and stressed the need for time to develop and support this alliance in an effort to build trust, respect and collaboration. Through qualitative interviews, Berg (2005) described a conceptual model of caring by a midwife to include forming a relationship with a high risk pregnant woman that protects a woman's dignity through trust and mutuality, a care that "empowers the woman's capacity as a mother" (p. 16). Empowerment, described as an attribute of trust and essential for a trusting relationship between nurse and patient (Hams, 1997; Thorne & Robinson, 1989), is emphasized in the "with woman"

philosophy of midwifery care that allows for the woman to manage her own care and the normal processes of childbirth (Carolan & Hodnett, 2007; Otley, 2011). It is the role of the nurse midwife to promote a woman's trust in her ability to give birth, moving from a focus on risks to supporting knowledge, confidence, reducing fear and avoiding unnecessary medical interventions (Lothian, 2012; Otley, 2011). This outcome of a respectful and empowering experience for women is promoted through the formation of trust, trust in the woman's own ability and trust in the midwife (Green et al., 2000; Seefat-van Teeffelen et al., 2011). In summary, the forming of a collaborative trust in the mother-midwife relationship supports positive outcomes for women during pregnancy.

Lastly, the psychometrics and revisions to the HCR Trust scale support the use of the tool's one-dimensional measure of trust, KMO = (.96) and Bartlett's Test ($p<.005$) (Bova, 2010) for exploring the perceived trust by pregnant women with a CNM. Internal consistency by race/ethnicity and age group ($\alpha >.93$) also validate its use in this population. Sufficient qualitative evidence does exist that identifies the attributes and outcomes of care by CNMs for pregnant women to include the formation of trust. With no previous study measuring trust perceived by pregnant women with CNMs, the HCR-R (Bova et al., 2012) provides a measure for the collaborative trust involved in this relationship.

Perceived Stress

Practical life issues for single, Hispanic pregnant women include dealing with stress (Campbell-Grossman et al., 2009). Given the potentially negative outcomes

related to stress during pregnancy (Glynn et al., 2008; Humenick & Howell, 2003; Lobel et al., 2008; Nkansah-Amankra et al., 2010), a review of the literature was conducted on perceived stress and stress during pregnancy to identify any linkages of trust to stress or coping with stress during pregnancy.

Perceived stress is described as the degree to which situations in one's life are appraised as stressful (Cohen, et al, 1983; Cohen & Williamson, 1988) including the degree to which a person feels that his/her life is "unpredictable, uncontrollable, and overloaded" (Cohen & Williamson, 1988, p.34). The seminal work of Selye (1974), and stress theories by Lazarus (1966), Lazarus and Folkman (1984) and Betty Neuman's theory (1974, 2011) provide comprehensive frameworks for understanding stress and human responses to stress and stressful situations. In her early work, Neuman (1974) emphasized the role of the nurse to assess and evaluate an individual's response to stress as critical in providing wellness for patients. Revisions to the Neuman's systems model included the goal of the nurse to promote wellness through stress prevention and the reduction of risk factors (Neuman, 1980, 1989, 2002; Neuman & Fawcett, 2011). These theoretical perspectives are significant to understanding the supportive role of nurse midwives. An important aspect to Kennedy's model and the theoretical framework for this study illustrates the role of the midwife in promoting wellness and providing exemplary midwifery care with the desired outcomes of ensuring that the woman and family are well-cared for, feel safe and empowered (Kennedy, 2000). According to this model, the midwife who

addresses the individual's needs and identifies ways to deal with stress and stressful situations would be providing exemplary midwifery care.

Coping with stress as described in Lazarus and Folkman's (1984) stress framework involves identifying factors that can alter stressor appraisal or alter the processes by which appraised stress can result in negative behaviors or disorders. The conceptual definition of coping includes "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person." (Lazarus & Folkman, 1984, p. 141) There are a number of studies in nursing that examined stress and coping with stress including work-related stress and job satisfaction in nursing (Adriaenssens, De Gucht, Van der Doef & Maes, 2011; Lin, Probst & Hsu, 2010; AbuAlRub, Omari & AbuAlRub, 2009; Mrayyan, 2009), the effects of stress on a patient's disease progression (Oftedal, Bru & Karlsen, 2011; Black, 2007) and the effects of stress on nursing students (Luo & Wang, 2009; Montes-Berges & Augusto, 2007). There is the one qualitative study involving three focus groups of pregnant women (N=21) in the Netherlands that suggested that a trusting relationship supports the sharing of personal feelings which may help to provide psychosocial support and can act as a coping resource for stress (Seefat-vanTeeffelen et al., 2011). An additional study involving nurse-led education on relaxation techniques for stress and anxiety during pregnancy highlighted the role of the nurse in educating patients on ways to cope with stress (Bastani, Hidarnia, Montgomery, Aguilar-Vafaei & Kazemnejad, 2006). This intervention study involving a randomized controlled trial

with a prospective experimental design examined the effect of relaxation techniques on selected pregnancy outcomes including birth weight, preterm birth, and surgical delivery rate. A significant difference between the experimental group (n=52) and control group (n=52) was reported on the mean birth weight with higher birth weight reported in the experimental group (M=3168, SD=420) than the control group (M=2883, SD=640), p=.009 (Bastani et al., 2006). A significant difference was also reported on the rate of low birth weight infants between the experimental group (5.8%) and the control group (26.9%), p =.003 (Bastani et al., 2006). In addition to these birth outcomes, the researchers also reported a significant difference in mean scores on post intervention measures for perceived stress with lower scores from the experimental group (M= 24.44, SD=5.84) as compared to the control group (M=37.52, SD=5.67), p <.001 (Bastani, Hidarnia, Kazemnejad, Vafaei, & Kashanian, 2005). Although this study did not involve nurses and midwives in providing the relaxation techniques, the results of this study emphasized the need for nurses and midwives to identify ways to reduce stress for women during the prenatal period.

Strategies for coping with stress identified in the literature include emotional and instrumental support (Varescon, Leignel, Poulain & Gerard, 2011) as well as planning-preparation, avoidance, and spiritual-positive coping (Hamilton & Lobel, 2008), prayer and task coping (Borcherding, 2009). Given the lack of evidence for the best practices to deal with stress during pregnancy, Alderdice and Lynn (2009) suggested that the philosophy of midwifery care which seeks to promote care that is empowering and holistic is a strong foundation for supporting pregnant women facing

stress during pregnancy. Alderdice and Lynn (2009) reviewed the literature on stress during pregnancy, and identified a number of risk factors associated with stress including age, socio-economic status, health-impairing behaviors, social support, obstetric history and complex pregnancy. A CNM who assesses and screens for these known risk factors during a prenatal visit is well-positioned to identify the women most at risk (Institute for Clinical Systems Improvement, 2010) and promote care that alters stressor appraisal or supports the woman's ability to cope with stress and stressful situations.

In studies by Bastani and colleagues (2005, 2006), the researchers used the PSS (Cohen et al., 1983) to measure stress experienced by women during the prenatal period. Cohen and colleagues (1983) developed the PSS, a subjective measure of the experienced level of stress, with the assumption of a cognitive appraisal process proposed in the early work of Lazarus (1966) and a theory of stress, coping and appraisal by Lazarus and Folkman (1984). There are a number of studies that provide evidence for the use of measurement tools for stress during pregnancy, however there is no indication of an acceptable clinical measure for stress during pregnancy (Lynn, Alderdice, Crealey & McElnay, 2011). The Prenatal Distress Questionnaire (PDQ) (Yali and Lobel, 1999) assesses pregnancy-related concerns and worries, and was designed to be administered prospectively during mid-pregnancy. The PDQ has good reliability and validity (α ranging from 0.798 to 0.81) (Gennaro, Shults, & Garry, 2008; Yali and Lobel, 1999). Lobel and colleagues (2008) argued that tools that do

not reflect pregnancy-specific stress may not reflect the relationship of stress to birth outcomes as adequately as tools that identify stress specific to pregnancy.

With respect to this argument, the Perceived Stress Scale (PSS) by Cohen and colleagues (1983) was examined for its appropriateness for the measurement of perceived stress by pregnant women and its relationship to perceived trust. The PSS (Cohen et al., 1983) was designed to measure stress occurring from sources other than pregnancy, which allows for determining perceived stress experienced at any given time, not just pregnancy. Campbell-Grossman and colleague (2009) stressed this finding in the qualitative study involving community leaders who revealed concerns for everyday stressors by single, Hispanic pregnant women including lack of transportation and financial constraints. In addition, the PSS can be administered during the third trimester, as the recommended administration of the PDQ (Yali & Lobel, 1999) is mid-pregnancy.

The PSS (Cohen et al., 1983) has been used to measure psychological stress and can help predict health-related outcomes presumed to be associated with appraised stress (Cohen & Williamson, 1988). The PSS has been used in studies with pregnant and postpartum women, demonstrating acceptable reliability ($\alpha \geq .75$) (Black, 2007; Culhane et al., 2001; Gennaro et al., 2008; Mann, Mannon, Quinones, Palmer & Torres, 2010).

Continuity of carer

Studies have examined the concept of continuity of care and continuity of carer for its association to the forming of health care relationship trust (Caterinicchio,

1979; Thom & Campbell, 1997; Thom et al., 2004). Using the path model approach, Caterinicchio (1979) described the degree of continuity of treatment as the first element involved in the development of interpersonal trust. Studies examining predictors of trust in health care relationships included continuity along with other factors such as providers' gender, education level, income, race/ethnicity and age of the patient, and frequency/number of visits as important to the formation of trust (Armstrong, Ravenell, McMurphy, & Putt, 2007; Benkert, Hollie, Nordstrom, Wickson, & Bins-Emerick, 2009; Boyas & Valera, 2011; Halbert, Armstrong, Gandy, & Shaker, 2006; Tarrant, Stokes, & Baker, 2003). Continuity of care is distinguished from continuity of carer in that continuity of care refers to good communication and consistent policies evidenced in the health care experience, while continuity of carer refers to provider continuity or a relationship between patient and provider over time (Green et al., 2000).

Various studies have examined the concept of continuity of carer, using similar terms such as provider continuity, relational continuity or interpersonal continuity (Harper, Brown, Foster-Rosales, & Raine, 2010; Inkelas, Schuster, Olson, Park, & Halfon, 2004; Jee & Cabana, 2006; Mainous, Koopman, Gill, Baker, & Pearson, 2004; Robles & Anderson, 2011; Russell, Rosati, & Andreopoulos, E., 2012; Saha, Jacobs, Moore & Beach, 2010; Saultz & Lochner, 2005; van Walraven, Oake, Jennings & Forster, 2010). Saultz (2003) reviewed 379 articles on continuity of care in general medical care and identified interpersonal continuity as a form of longitudinal continuity that involves "an ongoing personal relationship between the

patient and care provider (which) is characterized by personal trust and responsibility." (Saultz, 2003, p.136) A review of the literature by van Walraven et al. (2010) reported that the most common measure used to determine provider continuity were the objective measures of either the Usual Provider Continuity Index (UPC) or Continuity of Care (COC) Index.

There are no studies examining a quantitative measure of continuity of carer in the literature on nurse midwifery care. However, qualitative studies involving midwifery care practices have examined continuity of carer as it relates to building confidence with women and supporting a sense of calm, constant supportive presence (Huber & Sandall, 2009; Leap, et al., 2010; Snow, 2010). Through in-depth, semi structured retrospective interviews with ten women related to preparation for childbirth with midwives, Leap and colleagues (2010) explored the experiences of these women with midwifery continuity of carer, described in the study as relational continuity. Their findings suggested that women valued continuity of carer, which supported and encouraged their preparation for childbirth, addressed their fears of pain during labor and helped to build confidence in coping with pain (Leap et al., 2010). These qualitative studies support the link between continuity of carer and the forming of a relationship between pregnant woman and nurse midwife that is collaborative and mutual. A study examining relational continuity of care or the "ongoing therapeutic relationship between a patient and one or more providers" (Aune, Dahlberg & Ingebrigtsen, 2011, p. 515) described continuity of care among student midwives and pregnant women under a team midwifery model. Results from

the pilot project that involved interviews and focus group work with six student midwives suggested that continuity of care between the student midwife and a woman promoted interdependent trust and partnership (Aune et al., 2011). However, there are no studies that identify a quantitative measure for continuity of carer in nurse midwifery care and thus, no studies that determine the effect of continuity of carer on trust and stress.

Continuity of carer and trust

Various studies have examined the effect of continuity of carer on predicting trust involved in health care relationships (Baker, Mainous, Gray & Love, 2003; Bonds, Foley, Dugan, Hall, & Extrom, 2004; Boyas & Valera, 2011; Halbert et al., 2006; Joffe, Manocchia, Weeks, & Cleary, 2003). Researchers who examined provider continuity highlighted time as critical to the engaging and forming of a trusting relationship between patient and provider (Redsell, Stokes, Jackson, Hastings & Baker, 2007). Studies examining continuity of carer often highlight the relationship of continuity of carer on outcomes such as patient satisfaction (Baker et al., 2003; Saultz & Albedaiwi, 2004) and clinical outcomes including treatment/ medication adherence (Ali et al., 2012; Brookhart et al., 2007; Christakis, Mell, Koepsell, Zimmerman & Connell, 2001; Russell et al, 2012).

The effect of continuity of carer on perceived trust by a pregnant woman and perceived stress may have important implications that support models of care for midwifery and nursing that address building trust and improving outcomes. The impact of continuity of carer, seeing the same midwife, on the establishment of trust

by pregnant women may be helpful in understanding coping strategies for women at risk for stress during pregnancy. Evidentiary support that identifies the influence of continuity of carer on trust and stress may help to further explain the perceptions of the exemplars in Kennedy's (2004) Delphi study who felt "they could establish trust with a woman they had never met before and could still provide exemplary care" (p.508). The understanding of continuity of carer on the relationship of trust and stress also helps to expand the body of knowledge on nursing and midwifery care.

Chapter III

METHODOLOGY

Design

The purpose of this descriptive correlational study was to examine the relationship between the pregnant woman's perceived trust of the CNM and perceived stress. Data were gathered prenatally, using measures to assess perceived trust of the CNM and perceived stress among pregnant women, and to investigate whether or not a relationship exists between the variables. In addition, the study examined the influence of continuity of carer on the relationship between the perceived trust by pregnant women with CNMs and perceived stress.

Sample

The participants in this study were pregnant women who attended a community health center during the third trimester of pregnancy and who received prenatal care from CNMs on at least three prior visits. Eligibility criteria included that the women be able to read, write and understand English and/or Spanish, be at least 18 years of age or older, and have no documented history of depression or previous maternal complications. The rationale for enrollment in the third trimester was two-fold: this allows time for at least three prior visits to the midwifery practice and studies have suggested higher levels of maternal prenatal stress exist in the third trimester (Cheng & Pickler, 2010; Jones et al., 2006; Obel, Hedegaard, Henriksen, & Secher, 2005).

Sample size

The needed sample size for this study was calculated according to parameters established for correlational and comparative analyses. To test the significance of the correlation coefficients, Cohen (1992) suggested that for a medium effect (d=.3) and α of .05 ($1 - \beta = .95$), a sample of 64 was acceptable.

Setting

The sample was recruited from two locations of a community health center. The locations of the community health center are positioned in racially diverse and low-income areas in the Northeast region of the US. The center serves the local communities with no person being denied care. A certified nurse midwifery practice provides maternal health services for both locations and women are scheduled to see CNMs on specific days at each location. There were five full-time CNMs, two part-time CNMs and one per-diem CNM in the midwifery practice with an average of two-three CNMs staffing the practice each day with approximately 20 visits for each midwife.

Recruitment

A meeting was arranged with the certified nurse midwives to discuss the proposed study and provide face-to-face introductions with staff including the nurse manager, nursing assistants, and ancillary staff. The research proposal was given to the director of the community health center along with the study proposal for the organization's approval. A letter of support was granted from the organization upon

review of the study proposal and a meeting with the staff, administration and the director of the community health center.

A letter of solicitation was used in this study and included the title of the study, the affiliation of the primary researcher with the College of Nursing, Seton Hall University and researcher's contact information. The purpose of the study was also included in the letter of solicitation, emphasizing that participants in this study were pregnant women receiving prenatal care from certified nurse midwives and that the study examined the pregnant woman's perceived trust with a certified nurse midwife and the woman's perceived stress. The procedures were identified in the letter of solicitation to include the completion of three questionnaires with an expected time of 20-25 minutes to complete all three questionnaires. The letter of solicitation stated that participation was voluntary and withdrawal from the study can occur at any time without compromising care from the community health center. The letter also stated that the participant's anonymity will be maintained at all times and that all information about this study will be kept strictly confidential securing information in an off-site, locked cabinet. Directions for completing the questionnaires including the names of each instrument were in the letter of solicitation. The English version of the Letter of Solicitation is provided in Appendix A and the Spanish version is provided in Appendix B.

A translator provided assistance with Spanish. The translator completed the Institutional Review Board (IRB) Ethics training certification along with any requirements from the health center i.e. copy of confidentiality and medical clearance.

The responsibility of the translator was to assist the researcher in ensuring that all information relayed to Spanish speaking individuals was the same as information shared with English speaking individuals.

The researcher and translator attended the community health center on specified days when the nurse midwifery practice scheduled patients. The researcher and translator sat in the waiting area to recruit women for the study. Recruitment of participants involved two methods, the posting of flyers and the researcher handing letters of solicitation to potential participants in the waiting room. Approval of the posting of flyers in both English and Spanish was granted by the administration of the center as well as the nurse manager of maternity health services. Flyers were posted in both English and in Spanish and included a photo of the researcher in order for women to recognize the researcher if they were interested in participating in the study. The researcher's contact information was also included on the flyer. Once a woman indicated she was interested in the study, the researcher would screen her using a recruitment script. The recruitment script included affiliation with Seton Hall University's College of Nursing, the purpose of the research, expected time to complete questionnaires, eligibility criteria, description of the procedure involved in enrolling and completing questionnaires, ensuring confidentiality and voluntary participation. The English version of the recruitment script is provided in Appendix C and the Spanish version is provided in Appendix D.

The researcher screened the potential participant to determine whether or not the eligibility criteria were met. If the pregnant woman was deemed eligible, the

researcher continued by providing a study packet that included a letter of solicitation and the three questionnaires. The letter of solicitation was used in the place of a consent form and contained all points of informed consent. The researcher instructed the participant not to sign or write a name on the study materials to ensure anonymity.

If the researcher identified that a woman was ineligible for any reason during screening, the researcher thanked the woman for her time and willingness to participate. All criteria for inclusion in the study came directly from the woman's self-report including her age, total visits to the center, number of visits with the same midwife and the number of visits with different midwives.

Protection of human subjects

Under federal regulations, pregnant women are considered to be a vulnerable population for which special protection must be provided (US Department of Health and Human Services, 2005). There was no foreseen harm or discomfort associated with participation in this study. IRB approval was received through Seton Hall University prior to data collection and a copy was given to the director of the community health center.

Participants in the study were offered an empty, private office to discuss the study with the researcher. The researcher instructed the participant to return all materials except for the letter of solicitation to either the researcher directly or place them in the slotted and secure box located in the nursing office of the certified nurse midwifery practice. The researcher instructed the participant to retain the letter of solicitation as it contained all points of informed consent. The participants were

instructed that they were giving consent to participate in the study upon completing and returning the questionnaires. Completed questionnaires were returned directly to the researcher by participants and kept securely stored and locked in an off-site location. This process ensured confidentiality of participants, with no identifiers permitted on the questionnaires and allowed participants to complete and return questionnaires securely.

Data collection procedures

Packets of study materials were compiled prior to attending the center. A packet of study materials included a letter of solicitation, Participant Information Form, Health Care Relationship Trust scale-R (Bova et al., 2012) and Perceived Stress Scale (Cohen, et al., 1983). Two sets of packets, one set with all materials in English and one set with all materials in Spanish, were available at all times. The participant was given the choice to complete a paper-and-pencil questionnaire or have the questions read to them. Once the participant indicated their choice for completing the questionnaire, instructions for completing the questionnaire were reviewed by the researcher with the participant. These instructions included completing the entire questionnaire by responding to each question with their best and most honest response. The entire process of enrollment and completion of questionnaires took approximately 20-25 minutes.

Instruments

Participant Information form. The Participant Information Form included an open-ended question as well as multiple choice questions addressing

sociodemographic data like the initiation of the first prenatal visit, zip code, race/ ethnicity, marital status, pregnancy history, childcare, employment, education, social support, living arrangement and previous experience with a nurse midwife. An example on this questionnaire, the Participant Information Form, asks the pregnant woman health information as well as sociodemographic information like "Which of the following responses best describes your current household living arrangement?" Appendix E contains the English version of the Participant Information Form and Appendix F is the form in Spanish.

In addition to the information completed by the participant, the researcher calculated the continuity of carer, or Continuity of Care (COC) Index developed by Bice and Boxerman (1977). The information necessary to complete this index was provided through self-report by the participants. This information included total visits to the center, number of visits with the same midwife and number of visits with different midwives. This index was used to determine a measure for the continuity of carer to determine its effect on perceived trust and perceived stress. The COC index ranges from 0 to 1, with increasing scores indicating higher provider continuity. Bice and Boxerman (1977) first published this formula and the use of the COC index has been documented in a number of research studies (Chen & Cheng, 2011; Christakis et al., 2001; Christakis, Wright, Zimmerman, Bassett, & Connell, 2002; Liss et al., 2011; Russell et al., 2012). It is calculated as follows:

$$\text{COC}= \frac{\sum_{j=1}^{s} n_j^2 - N}{N(N-1)}$$

where *N* represents the total number of PNC visits with CNMs that occurred since the initiation of PNC for the woman's current pregnancy, *n*= the number of visits to provider *j* with *j* representing a given CNM, and s= the total number of CNMs working at the midwifery practice.

The calculation of the COC index was done for each subject and placed on the Participant Information Form by the primary researcher. Liss and colleagues (2011) stressed that the Bice-Boxerman COC index is not a valid measure when there are fewer than 3 visits. Therefore, this study only included women who have visited the center for 3 or more PNC visits.

Health care Relationship Trust scale-R (HCR-R). Trust was measured using the tool developed by Bova and colleagues (2012), the revised Health Care Relationship Trust Scale-R (HCR-R). It was originally developed as the HCR Trust scale by Bova, Fennie, Watrous, Dieckhaus & Williams (2006). This tool was used to measure the perceived trust between the pregnant woman and the CNM. Bova and colleagues (2006) developed the original tool as a 15-item Likert-type scale to measure trust between patients and healthcare providers from different disciplines including advanced practice nurses. Response options for the scale included the use of a Likert scale (0 to 4) with item responses summed for a possible range of scores between 0-60 with higher scores equaling greater collaborative trust. An example of an item on the HCR-R asks the pregnant woman to rate on a four point scale (0= none of the time and 4 = all of the time), "My midwife is an excellent listener".

The HCR Trust scale (Bova et al., 2006) was developed through qualitative interviews and focus groups involving 25 HIV-positive adults who receive care from a variety of healthcare providers including physicians, nurse practitioners and physician assistants. The instrument was created using expert panel reviews and pilot testing involving 99 HIV-positive adults. The 15-item scale was reported by the researchers to have excellent reliability (α= .92) with the Principal components factor analysis explained 69% of the variance, resulting in the three factors of interpersonal connection (α = .85), respectful communication (α = .81) and professional partnering (α = .89).

Bova and colleagues (2012) further examined the tool's utility using a prospective study design involving mailed surveys and samples of primary care patients. The researchers first performed pilot testing that involved 30 adult primary care patients and excellent scale reliability (α >.80) was reported (Bova, 2010). Following the pilot test, a larger study involving a sample of 431 primary care patients receiving care from physicians, nurse practitioners and residents was conducted (Bova et al., 2012). Researchers revealed support for the scale's unidimensional measure of trust, KMO = (.96) and Bartlett's Test ($p<.005$), internal consistency by race/ethnicity and age group (all Cronbach's alpha >.93) and the elimination of two items with lower factor loading (<.4) (Bova et al., 2012). From this study, the revised scale, HCR-R, was recommended for future use (Bova et al., 2012). Scoring this tool involves reverse coding for item 12 and then calculating a total score with possible scores ranging from 0-52, with higher scores equating to

greater collaborative trust. The English version of the HCR-R is provided in Appendix G and the Spanish version in Appendix H. The Spanish version using Latin American dialect was translated on January 19, 2012 by Verbatim Solution, Inc. for a monetary fee. A forward/backward translation procedure by a Hispanic pregnant woman and the Spanish translator ensured that the translation was both culturally and linguistically appropriate. The Spanish version of the HCR-R provides a quantitative measure for collaborative trust with non-English speaking patients.

Perceived Stress Scale (PSS). Perceived stress was measured in this study using a measure of psychological stress, the Perceived Stress Scale. The PSS (Cohen, Kamarck, & Mermelstein, 1983) is a 14-item Likert scale (0 to 4) used to measure the degree to which the participants perceived their current life as stressful. Scores on the PSS can range from 0 to 56 with higher scores indicating higher levels of perceived stress. PSS scores are obtained by reversing responses to six stated items (items 4, 5, 7, 9, 10 & 13) and then adding the sums of all scale items. Cronbach's alpha coefficients for the PSS ranged from .84 to .86 (Cohen et al., 1983). In studies of pregnant and postpartum women (Black, 2007; Culhane et al., 2001; Gennaro et al., 2008; Mann et al., 2010), the PSS demonstrated acceptable reliability ($\alpha \geq .75$). An important issue was raised by one of the studies using both the English and Spanish versions of the PSS. Mann and colleagues (2010) described low reliability of the English language format of the PSS ($\alpha = .55$), with satisfactory reliability in the overall sample ($\alpha = .78$), pregnant women ($\alpha = .81$), postpartum ($\alpha = .76$), and the Spanish form ($\alpha = .82$). A factor analysis was performed identifying that the positive

and negative items needed to load separately (Mann et al., 2010). Two stress factors were then included in the study involving the positive aspects of stress and the negative aspects of stress and found to be reliable ($\alpha \geq .75$) (Mann et al., 2010).

For Spanish speaking pregnant women, a Spanish version of the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983), the European Spanish version PSS (14-item) was utilized. Remor (2006) reported that the European Spanish version PSS demonstrated adequate reliability ($\alpha = .81$, and test-retest, $r = .73$), and concurrent validity with Zigmond & Snaith's (1983) Hospital Anxiety and Depression Scale (HADS) subscales of anxiety ($\alpha = .64$) and depression ($\alpha = .71$) in Spanish populations including male and female adults.

Cohen and Williamson (1988) described a temporal nature of perceived stress as influenced by major events, daily hassles and coping resources. Cohen and Williamson (1988) normed the PSS using L. Harris Poll gathered information on 2,387 respondents in the U.S. and suggested that predictive validity of the PSS is expected to fall off rapidly after four to eight weeks from event. An example in the questionnaire, the Perceived Stress Scale (PSS), asked the pregnant woman to rate, on a scale of 0 to 4 (0 = never and 4 = very often), "In the last month, how often have you dealt successfully with irritating life hassles?" Appendix I is the English version of the PSS and Appendix J is the Spanish version.

Data analysis

Data were collected and entered into SPSS for Windows, Version 20 (IBM, 2011) by the researcher. Cronbach's alpha coefficients for internal consistency and

reliability were computed for all psychometric measures. Descriptive statistics were computed for all variables including the sociodemographic characteristics from the Participant Information Form. Non-parametric inferential statistical method involving Spearman's rank correlation coefficient was used to examine the first research question involving the relationship between perceived trust and perceived stress. Statistical significance was measured at the 95% confidence interval (CI) level ($p <$ .05). To address the second research question, comparative analysis for the influence of COC on perceived trust and perceived stress was computed using the One-way analysis of variance (ANOVA) method.

Chapter IV

RESULTS

This chapter presents the results of the research and addresses the research questions involving the relationship of perceived trust and perceived stress among pregnant women receiving care from CNMs and the influence of continuity of carer on trust and stress. The sample characteristics are presented using descriptive statistics. An estimate of the reliability of all study instruments as well as an assessment of the psychometric properties of the HCR-R and PSS in both English and Spanish are presented. In addition, study variables and the proposed relationship are analyzed using various and appropriate statistical procedures including correlations, comparative and content analysis.

Characteristics of the sample

The sample included pregnant women receiving prenatal care at two locations of a community health center in both rural and urban settings in the Northeast region of the US. The certified nurse midwifery practice employs five full-time CNMs, two part-time CNMs and one per-diem CNM who staff these two locations. Of the 251 pregnant women screened and evaluated for participation in the study, 119 women (47%) met inclusion criteria for participation. There were 28 eligible pregnant women who did not participate in the study and were not included in data analysis, 21 (17.6%) Spanish speaking and seven (5.9%) English speaking women. Of the 21 Spanish women, 17 (80.9%) women refused, one (4.7%) woman progressed into

active labor and three (14.2%) women did not return study materials. Of the seven English speaking women who were eligible for the study and did not participant, five of the women (71%) refused and two women (28%) did not return study materials. The remaining eligible pregnant women (N = 91) did complete the study questionnaires, yielding a sample of 41 (45.1%) English speaking and 50 (54.9%) Spanish speaking participants.

Of the 91 participants, 90 (99%) women were recruited while waiting to see the CNMs in the waiting area of the maternity health services department of the community health center. One participant (1%) contacted the researcher stating her desire to participate after reading the flyer posted in the waiting area. Upon completion of the study materials, all participants returned the packets to the researcher and material was reviewed to ensure there was no missing data. The majority of participants completed all the study questions with only two participants not willing to provide a zip code. Although there was the option to return the study materials to the slotted box in the nursing office, no participants chose to return the questionnaires to the box during the study period. All participants directly returned the completed study materials to the researcher.

The participants were asked to respond to 17 demographic questions, the HCR-R and 14 items from the PSS. These study materials were provided in either English or Spanish to the participants. The data was manually entered into the statistical processing software SPSS 20.0 and all statistical analysis was examined using this software (IBM SPSS® for Windows, 2011) by the researcher. Data were

checked for completeness and entered twice into separate computer files revealing no inconsistencies. At the end of the questionnaire, one open-ended question which allowed for the participant to add any additional comments was included and content analysis was used.

In order to establish equivalence of the English speaking and Spanish speaking participants, an independent sample T Test was computed using the study variables of perceived trust, perceived stress and continuity of carer to compare mean scores of the two groups. In addition, an assumption of homogeneity of variance for the two groups was evaluated using the Levene's Test for Equality of Variances. The result of the Levene's test was not significant for perceived trust and continuity of carer between English and Spanish speaking women. However, the Levene's test was significant for perceived stress, $t(89) = 2.43$, $p = .017$, violating the equality-of-variance assumption. Since there was a critical value less than the level of .05 significance, there was insufficient evidence to claim that the variances are equal. The data were not merged and the analysis is presented for English and Spanish speaking participants separately.

Demographic characteristics

Table 1 presents a summary of reported demographic characteristics including age, education, marital status and employment for the both the English speaking pregnant women ($n = 41$) and the Spanish speaking pregnant women ($n = 50$). The demographic findings demonstrate both similarities and differences among English speaking/Spanish speaking groups.

Table I.

Demographic characteristics of English Speaking and Spanish Speaking Pregnant Women

Characteristic	English ($n = 41$) n (%)	Spanish ($n = 50$) n (%)
Age		
< 20	2 (4.9%)	2 (4%)
20-24	11 (26.8%)	17 (34%)
25-29	14 (34.2%)	11 (22%)
30-34	11 (26.8%)	12 (24%)
35-39	2 (4.9%)	8 (16%)
40+	1 (2.4%)	0 (0%)
Education		
<High school	4 (9.8%)	24 (48%)
High school	13 (31.7%)	18 (36%)
Some college	12 (29.3%)	3 (6%)
Associate	6 (14.6%)	1 (2%)
Bachelor	5 (12.2%)	3 (6%)
Graduate	1 (2.4%)	1 (2%)
Marital Status		
Single	10 (24.4%)	19 (38%)
Married	14 (34.1%)	14 (28%)
Divorced	1 (2.4%)	1 (2%)
Separated	1 (2.4%)	2 (4%)
Committed	15 (36.6%)	14 (28%)
Employment		
Working PT*	10 (24.4%)	8 (16%)
Working FT*	5 (12.2%)	6 (12%)
Not employed SE*	13 (31.7%)	1 (2%)
Not employed NSE*	12 (29.3%)	25 (50%)
Disabled	1 (2.4%)	1 (2%)

Note. PT=1-39 hours per work; FT=40+ hours/week; SE=seeking work; NSE=not seeking work.

Among the 41 English speaking pregnant women, ages ranged from 19 to 44 years with an average age of 27.26 (*SD* of 5.41). The participants in the English speaking group were generally between the ages of 25 and 29 (34.2%), unemployed (61%) and married or in a committed relationship (70.7%). Among the Spanish speaking pregnant women group (n=50), ages ranged from 18 to 39 years with an average age of 27.74 years (*SD* = 5.72). Although the majority of women were slightly younger with ages between 20 and 24 (34%), the Spanish speaking pregnant women like the English speaking pregnant women were generally unemployed (52%) and married or in a committed relationship (56%).

In comparing the English speaking and Spanish speaking groups, there were differences reported in the levels of education. Thirteen women (31.7%) reported having at least a high school education and 12 women (29.3%) reported having some college experience in the English speaking group. Among the Spanish speaking participants, 84% of these women (42/50) reported having a high school degree or less. Among these 42 women, 36% of the women in this group reported having completed high school and 48% reporting less than a high school education.

Additional demographic information regarding race and ethnicity were reported by the participants. The ethnic majority of participants in the English speaking group, 21 pregnant women, were Black or African American women (51.2%). Other groups were also represented including 11 Hispanic women (29.2%), six White women (14.6%), one American Indian or Alaskan Native woman (2.4%), one Asian woman (2.4%), and one woman from multiple races. Of the 11 Hispanic

women in the English speaking group, three women were Mexican, two women were Puerto Rican, one woman was Guatemalan, one woman was Dominican and five women from multiple races or other Spanish, Latino or Hispanic groups.

For the Spanish speaking group, one woman was white (2%) and seven women were from multiple races (14%). The majority of participants in this group were Hispanic, Spanish or Latino (84%). There were 12 women from El Salvador (24%), 11 women from Guatemala (22%), seven women from Mexico (14%), six women from some other Spanish, Hispanic or Latino group (12%), five women from Honduras (10%), four women from Ecuador (8%), three women from multiple groups (6%), and two women from Dominican Republic (4%).

Childcare and living arrangements reported among English speaking and Spanish speaking pregnant women are represented as the characteristics of the household in Table 2. Childcare was identified by the number of children living in the household and this number could include the pregnant woman's own children, the pregnant woman's siblings or other children living in the woman's home. The majority of both English speaking pregnant women (56%) and Spanish speaking pregnant women (68%) reported living with a spouse or significant other in the home. Although there were women in both English (34.1%) and Spanish speaking groups (30%) that reported not living with children, more than half of the participants in each group did report having one to two children living in the household.

Table II.

Characteristics of the Household of English Speaking and Spanish Speaking Pregnant Women

Characteristic	English ($n = 41$) n (%)	Spanish ($n = 50$) n (%)
Children in household		
0	14 (34.1%)	15 (30%)
1	14 (34.1%)	14 (28%)
2	10 (24.4%)	17 (34%)
3	2 (4.9%)	1 (2%)
4 +	1 (2.4%)	3 (6%)
Living arrangement		
Alone	4 (9.8%)	4 (8%)
With children only	2 (4.9%)	2 (4%)
With parents/family	12 (29.3%)	8 (16%)
With spouse or SO	21 (51.2%)	34 (68%)
With spouse and EF*	2 (4.9%)	0 (0%)
Other	0 (0%)	2 (4%)

Note. SO=significant other; EF=extended family including parents/ family members.

In addition to the demographic and household data, important information regarding prenatal care (PNC) was also reported from both English speaking and Spanish speaking pregnant women. Characteristics of both English speaking and Spanish speaking pregnant women regarding PNC are presented in Table 3 and include the number of previous childbirths, previous experience(s) with CNM(s) as well as informational and emotional support during pregnancy.

Table III.

Characteristics of English Speaking and Spanish Speaking Pregnant Women regarding Prenatal Care

Characteristic	English ($n = 41$) n (%)	Spanish ($n = 50$) n (%)
Pregnancy history		
Never been pregnant	13 (31.7%)	13 (26%)
Pregnant but NGB	8 (19.5%)	1 (2%)
Pregnant GBO	12 (29.3%)	10 (20%)
Given birth >1	8 (19.5%)	26 (52%)
Past experience with CNM		
Yes	11 (26.8%)	17 (34%)
No	30 (73.2%)	33 (66%)
Emotional support		
Family	16 (39%)	35 (70%)
Close friend	3 (7.3%)	1 (2%)
Baby's BF	17 (41.5%)	11 (22%)
Family and CF	0 (0%)	2 (4%)
Baby's BF and MOC	1 (2.4%)	0 (0%)
Family, CF and BF	1 (2.4%)	0 (0%)
Family and BF	2 (4.9%)	0 (0%)
Self	1 (2.4%)	0 (0%)
Other	0 (0%)	1 (2%)
Informational support		
Family	15 (36.6%)	33 (66%)
CF	3 (7.3%)	1 (2%)
Baby's BF	7 (17.1%)	4 (8%)
Midwife	10 (24.4%)	9 (18%)
Midwife/internet/books	1 (2.4%)	0 (0%)
Family and midwife	2 (4.8%)	0 (0%)
MOC	0 (0%)	1 (2%)
Family and BF	1 (2.4%)	0 (0%)
Family and CF	0 (0%)	2 (4%)

Note. NGB=never given birth; GBO=given birth once; BF=birth father; CF=close friend; MOC=member of community.

Thirteen participants from each group reported no previous history of pregnancy, with English speaking women (31.7%) and Spanish speaking women (26%). Women who had been pregnant before and given birth only once were reported by 29.3% of English speaking women and 20% of the Spanish speaking women. The largest percentage of women in the Spanish speaking group reported a history of pregnancy and giving birth more than once (52%). The average number of times a woman gave birth for English speaking women was .9 (SD = 1.04) with a range of 0 to 4. However, the Spanish speaking women reported an average number of childbirths as 1.4 (SD = 1.41), ranging from 0 to 7 children.

Questions regarding support during pregnancy were included in the questionnaires to gain insight into mechanisms for dealing with pregnancy and pregnancy related issues. The majority of English speaking women reported receiving emotional support during pregnancy from either a family member (39%) or baby's birth father (41.5%). Thirty-five participants (70%) reported receiving emotional support from family in the Spanish speaking group. Fifteen women in the English speaking group (36.6%) reported receiving informational support from family. Ten women in the English speaking group (24.4%) indicated that informational support was received from the midwife and seven women (17.1%) reported receiving support from baby's birth father. A majority of Spanish speaking women (66%) reported receiving informational support from family with nine women (18%) indicating that informational support was received from the midwife or a doctor. One woman (2.4%) reported that no one provided informational support in the English speaking group

while one woman (2%) in the Spanish speaking group reported receiving informational support from a community member.

Information regarding zip code was also included in the questionnaire to gain insight into the proximity of the pregnant women's homes to the health center. Evidence suggests that lack of transportation is a barrier to care for women living in poorer community (Campbell-Grossman et al., 2009) and may be a contributor to stress. The majority of both English speaking (61%) and Spanish speaking women (82%) reported living less than five miles from the health center.

Assessment of the reliability of the study instruments

The Cronbach's coefficient alpha was used to measure the reliability of both study instruments, the HCR-R and PSS. An acceptable alpha coefficient for an established instrument is .80, and for a new instrument, .70 (Burns & Grove, 2009). Results of internal consistency tests using alpha coefficient revealed acceptable reliability in the established HCR-R for the English version ($\alpha = .93$) and the newly translated Spanish version ($\alpha = .89$). Although the reliability of the English version of the PSS was good ($\alpha = .83$), lower reliability was revealed in the results of internal consistency of the Spanish version of the PSS ($\alpha = .67$). Item analyses using a corrected item-total correlation were performed on the Spanish version of the PSS, to address the lower reliability. Results of the item-total correlation revealed a negative correlation of item 12 (-.203) and low correlation for item 13 (.101), while all other items correlate at .229 or better. The scale's Cronbach's alpha would be .73 if item 12 was removed from the scale. This question item asked the pregnant woman in the last

month, how often she thought about things to accomplish. The PSS included 14 items for both English and Spanish. The deletion of item 12 would result in a scale including 13 items and an increase in Cronbach's alpha from .67 to .73 for the Spanish version and increased reliability for the English version from .83 to .84.

Characteristics of study variables

Further analysis was done on the three study variables for both the English speaking and Spanish speaking groups. Perceived trust, perceived stress and continuity of carer were measured on continuous interval scales. Characteristics of these three variables are presented in Table 4 for both English speaking and Spanish speaking pregnant women.

Trust, stress and continuity of carer were examined to determine whether or not they met required statistical assumptions necessary for answering the quantitative research questions. Assumptions included measuring variables on interval or ratio levels and tests of normality. These are important steps to avoid violating statistical assumptions which can lead to incorrect statistical analysis (Green & Salkind, 2008).

Table IV.

Characteristics of Perceived Trust, Perceived Stress and Continuity of carer among English Speaking and Spanish Speaking Pregnant Women

Measure	English (n = 41)	Spanish (n = 50)
Trust		
Mean	45.17	45.78
Median	48	48.5
Mode	52	52
SD	9.33	7.56
Variance	87.19	57.15
Skewness	-2.27	-2.05
ROS	8 - 52	15 - 52
Stress		
Mean	17.36	13.82
Median	16	13.5
Mode	16	6
SD	8.78	6.94
Variance	77.18	48.23
Skewness	-0.12	.174
ROS	0-36	0-28
Continuity of carer		
Mean	.46	.38
Median	.47	.33
Mode	1	.2, .33, .6
SD	.3	.23
Variance	.09	.05
Skewness	.49	1.09
ROS	.00 – 1.0	.1 – 1.0

Note. *SD*=standard deviation; ROS= range of scores

Perceived trust. The use of the HCR-R, a 13-item scale, involved reverse coding for item 12 and calculating a total score with possible scores ranging from 0-52 with higher scores indicating greater trust. The results of both the English version

and Spanish version of the HCR-R revealed high trust for both groups, English speaking pregnant women ($M = 45.17$, $SD = 9.33$) and Spanish speaking pregnant women ($M = 45.78$, $SD = 48.5$). Of the 41 English speaking pregnant women, 10 women (24%) scored 52 on the HCR-R with 46 % of the women scoring between 45 and 52. In the Spanish speaking group, 10 women (20%) also scored 52 and 68% of the women scored 45 or higher. Skewness statistics were performed and revealed nonnormal distribution of trust for both English (-2.27) and Spanish (-2.05) groups. Further tests of normality involving trust were performed using the Shapiro-Wilk Test, a test used to determine normality on smaller sample sizes, 50 or less (IBM SPSS® Statistics, 2013). The results of the Shapiro-Wilk test for both English speaking pregnant women ($W = .725$, $p < .001$) and Spanish speaking pregnant women ($W = .779$, $p < .001$) on perceived trust revealed a significant difference and therefore it deviates from the normal distribution. A log transformation was performed on the perceived trust scores for both English and Spanish speaking groups. Shapiro-Wilk Test was performed on the transformed data on perceived trust revealing that the data significantly deviated from the normal distribution for both groups, English speaking pregnant women ($W = .545$, $p < .001$) and Spanish speaking pregnant women ($W = .652$, $p < .001$). Statistical analysis using non-parametric measures were utilized in the presence of data not normally distributed.

Perceived stress. For statistical analysis, one item was removed from the PSS, item 12 and a new range of scores (0 to 52) was established. Higher perceived stress is indicated on higher scores on the PSS. Women in the English speaking group

revealed more perceived stress (M = 17.36, SD = 8.78) than the Spanish speaking group (M = 13.82, SD = 6.94). The majority of Spanish speaking women reported less perceived stress with 78% of the women scoring less than 20 on the scale. One woman in the Spanish speaking group revealed a score of 0, which indicates no perceived stress. In the English speaking group, 65.9% of the women scored 20 or lower. Two women also scored 0 on the PSS in the English group. The results of the Shapiro-Wilk test for both English speaking pregnant women (W = .975, p = .50) and Spanish speaking pregnant women (W = .979, p = .505) on perceived stress were not significant at the level of .05 significance. Therefore, it was assumed that the data was normally distributed for stress for both English speaking and Spanish speaking pregnant women. In addition, data for stress scores were also examined for outliers and to verify the data. The inspection of the frequency distribution revealed a number of very high scores and few very low scores for the Spanish speaking group. The overall scores for PSS for Spanish speaking women were determined to be legitimate values since the tool included reverse coding for six of the 13 items and there was a normal distribution of perceived stress scores.

Continuity of carer. The COC index was calculated on each participant using data collected on the Participant Information form to determine the continuity of carer. Women reported the total number of PNC visits, the number of times seeing the same CNM and a different midwife. COC index ranges from 0 to 1, with increasing scores indicating higher provider continuity. The English speaking women reported slightly higher provider continuity (M = .46, SD = .30) than the Spanish speaking

women (M = .38, SD = .23). Six women (14.6%) in the English speaking group reported seeing the same CNM at each prenatal visit. Three women (6%) in the Spanish speaking group also reported seeing the same midwife at every PNC visit. The average number of PNC visits for English speaking women was 6.75 visits (SD = 2.32). For Spanish speaking women, the average number of visits upon enrollment in the third trimester was 6.66 visits (SD = 2.24). For further analysis using continuity of carer, the study variable was divided into three groups based on the tertiles of the distribution for analysis for both English speaking and Spanish speaking pregnant women. Previous studies on COC also used tertiles of distribution for analysis, resulting in three groups (low, medium and high) to examine the effect of COC (Chen & Cheng, 2011; Christakis et al., 2001). The three groups of continuity of carer, describing provider continuity at high, medium and low, are presented in Table 5 for both English speaking and Spanish speaking pregnant women.

Table V.

COC index ranges for Three Continuity of Carer Groups among English Speaking and Spanish Speaking Pregnant Women

Groups	COC index ranges	
	English (n = 41)	Spanish (n = 50)
Low provider continuity	0.0-.31	0.0-.22
Medium provider continuity	.33-.54	.27-.43
High provider continuity	.57-1.0	.47–1.0

Research questions

The data set for trust for both English and Spanish groups failed a test for normality resulting in a violation of the assumption necessary for conducting the Pearson's product-moment correlation (IBM SPSS® Statistics, 2012). A non-parametric test, the Spearman Rank Order Correlation coefficient (rs), was then used to address the first research question regarding the association between trust and stress. Spearman Rank Order correlations were analyzed on perceived trust and perceived stress in both English and Spanish speaking pregnant women. The negatively distributed trust scores and the transformed data for trust were both entered into analysis separately and results were identical. The decision was to precede using the original data, understanding that non-parametric statistics do not require normally distributed data. Statistical analysis using Spearman Rank Order correlations revealed strong, negative correlation between perceived trust and perceived stress among English speaking women (r_s = -.542, df=39, p < .001) at the .01 level of significance

as well as for Spanish speaking women (r_s = -.332, df=39, p = .018) at the .05 level of significance. According to these findings, women in both English and Spanish speaking groups who had higher perceived trust had less perceived stress.

For the second research question regarding the influence of continuity of carer on trust and stress, the One-way analysis of variance (ANOVA) method was performed to compare the effects of the three continuity of carer groups (high, medium and low) on perceived trust and perceived stress. There were four One-way ANOVAs performed. Each One-way ANOVA was used to determine the effect of high, medium and low continuity of carer for each study variable (perceived trust and perceived stress) among the English speaking and Spanish speaking pregnant women.

For the English speaking pregnant women, the Levene's Test of Homogeneity of Variance, testing for similar variances, was significant, F(2,38) = 5.414, p = .009) for perceived trust. Because the significant value is less than .05, the assumption of homogeneity of variance was not met. Careful interpretation of the findings are suggested since the assumption of ANOVA requires a significance value greater than .05 in order to have homogeneity of variances.

Since the homogeneity of variance was violated, further analysis was included using Robust Test of Equality of Means, the Welch and Brown-Forsythe statistics. Using the Welch statistic, the test was significant, F(2, 20.075) = 3.656, p = .044) using a level of significance at .05. The test for the Brown-Forsythe was also determined to be significant, F(2, 24.243) = 3.3313, p = .053. With significant p values, the null hypothesis is rejected and the group means were further analyzed

using Tukey's and Games-Howell post hoc comparisons to identify individual group differences. The Tukey's post hoc test revealed a significant difference between the high provider continuity and low provider continuity groups on perceived trust (p = .04). Using the Tukey's post hoc test, a mean score of perceived trust for the high provider continuity group was 49.15 (SD = 12.42) which was relatively higher than the low provider continuity group at 40.64 (SD = 2.85). Since the data did not meet the statistical assumption of homogeneity of variance, the additional Games-Howell post hoc test was conducted. There was no significance on perceived trust and continuity of carer groups using the Games-Howell post hoc test (p = .06). The results for descriptive statistics using the Tukey's post hoc are illustrated in Table 6.

Table VI.

Descriptive statistics on 1-Way ANOVA for English Speaking Pregnant Women

Variable	COC groups	*n*	*M*	*SD*	*F* (*df*)	*p*
Trust	Low	14	40.64	12.42	3.20 (2,38)	0.05*
	Medium	14	46	8.22		
	High	13	49.15	2.85		
Stress	Low	14	19.21	9.43	0.65 (2,38)	0.52
	Medium	14	17.42	9.74		
	High	13	15.30	7.04		

Note. COC groups refers to the tertiles of distribution of COC index among English speaking women, resulting in three groups for continuity of carer (low provider continuity, medium provider continuity and high provider continuity)
*The mean difference is significant at the 0.05 level.

The ANOVA results showed a significant difference between continuity of carer groups on perceived trust [F(2,38) =3.20, p = .05] for English speaking women. However, there were no significant differences found between groups on perceived stress.

For the Spanish speaking groups, statistical analysis was repeated using One-way ANOVA to compare the continuity of carer groups (high, medium and low) on perceived trust and perceived stress. For the Spanish speaking groups, there were no significant differences on perceived trust and perceived stress between the three groups of provider continuity. The descriptive statistics are presented in Table 6 for the Spanish speaking pregnant women. The Levene's Test of Homogeneity of Variance was significant (p = .04) on perceived trust, however no post hoc tests were performed since there were no significant differences between groups.

Table VII.

Descriptive statistics on 1-Way ANOVA for Spanish Speaking Pregnant Women

Variable	COC groups	*n*	*M*	*SD*	*F* (*df*)	*p*
Trust	Low	17	43.82	10.41	1.58 (2,47)	.21
	Medium	17	45.29	6.42		
	High	16	48.37	3.89		
Stress	Low	17	13.70	6.88		
	Medium	17	15.23	5.86	.66 (2,47)	.52
	High	16	12.43	8.11		

Note. COC groups refers to the tertiles of distribution of COC index among Spanish speaking women, resulting in three groups for continuity of carer (low provider continuity, medium provider continuity and high provider continuity)
*The mean difference is significant at the 0.05 level.

Content analysis for open-ended question

Eight participants provided comments analyzed using content analysis. Seven of the women were Spanish speaking and one woman was English speaking. The two major themes identified in the comments were 1) general care received at the center and 2) a woman's personal feelings toward self, pregnancy and care. Four women described their experiences receiving care at the center as positive with responses like "I am happy", "It is important to always see the same midwife" and "I feel good because the midwife is very attentive and caring". Two women also described negative responses regarding receiving care at the center. One woman described her appointments as "rushed due to the standards in place" and another woman depicted a similar tone in this response, "the life of the baby is the main concern and therefore you must give what is necessary regardless of country, without discrimination". Personal feelings like "I am feeling so excited", "Thank you for my participation" and "I just want to be happy and calm" suggested a more positive tone. The majority of participants, 97% of the English speaking pregnant women and 86% of the Spanish speaking women did not provide any comments or additional information in the open-ended section.

Chapter V

DISCUSSION

This chapter provides a brief summary of the study and a discussion on the findings including sample characteristics, study variables and research questions.

Summary

This descriptive correlational study used self-reports and questionnaires to examine the perceived trust and perceived stress among pregnant women receiving care from CNMs. The nature of the relationship between pregnant woman and CNM is depicted through a measure of perceived trust reported by both English speaking and Spanish speaking pregnant women. The perceived stress was also measured and results revealed a significant difference on perceived stress reported by English and Spanish speaking women [$t(89) = 2.43$, $p = .017$] with Spanish speaking women reporting less perceived stress than the English speaking women. There are similarities between the two groups regarding age, marital status, employment, living arrangements and perceived trust. However, important differences did exist including educational status, pregnancy history, social support and perceived stress which have important implications on perceived trust and perceived stress among these groups.

The psychometrics of the established PSS tools in English and Spanish as well as the HCR-R and newly translated Spanish version are presented and there are important considerations for their future use in this population. Lastly, the association of perceived trust and perceived stress was examined and statistical analysis revealed

women in both English and Spanish speaking groups who had higher perceived trust had less perceived stress. Along with perceived trust and perceived stress, continuity of carer was also examined to determine its effect on perceived trust and perceived stress. For the English speaking women, the comparative analysis revealed a significant effect on continuity of carer groups on perceived trust [$F(2,38) = 3.20$, $p = .05$] but not on perceived stress. There was no significant effect of continuity of carer on perceived trust or perceived stress for Spanish speaking pregnant women revealed in the statistical analysis.

Sample characteristics

This study describes a convenience sample of low-income, predominantly Hispanic pregnant women who receive PNC from CNMs at a community health center. The majority of participants in the study (69%, 63/91) reported being Hispanic, Latino or Spanish with 54% (50/91) requesting and completing the questionnaires in Spanish and 14% (13/91) completed the questionnaires in English. Along with the 50 Spanish speaking women who participated in the study and the 13 women who were Hispanic, Latino or Spanish and completed the surveys in English, there were 21 additional Spanish speaking women who were eligible but did not participate in the study. The largely Spanish ethnic population of pregnant women receiving PNC from CNMs stresses a large Hispanic influence of language, social norms and culture on this population. Researchers have identified a number of factors including number of years residing in the US and income as factors related to pregnancy outcomes for women of Hispanic, Latino and Spanish culture (Potter et al,

2009; Sumner et al., 2011). In a prospective, multicenter study, findings suggested that US-born women compared with non US-born women were less likely to access PNC [AOR 0.35, 95% CI (0.15, 0.81)] including women of poverty and minorities (Potter et al, 2009). For the current study, no question directly asked women to identify the number of years living in the US or whether they were US-born or non-US born. Of the non-English speaking women (54%, 50/91), the majority of participants were from Central America, 12 women from El Salvador (24%) and 11 women from Guatemala (22%). With the larger number of women from Central America, it is important for the nurse midwifery practice to understand this group's social norms and culture involving healthcare and pregnancy. For women living in Guatemala for example, traditional midwifery plays a vital role in providing health care to women and is critical to their sense of community (Foster et al., 2011). This is important aspect for understanding perceived trust with nurse midwives and their willingness to access PNC using community based nurse midwifery care.

Except for teenage women who were excluded from the current study, the ages of the participants in the study (N= 91) were widely distributed among childbearing age groups with the majority of women aged 20-24 (30%, 28/91) and women aged 25-29 (27%, 25/91). National Vital Statistic data from 2009 revealed that women of childbearing age, aged 15–44 years, had a general fertility rate of 66.7% per 1,000 women with a birth rate for women aged 20-24 at 96.3% and a birth rate of 110.5% for women aged 25-29 (US Department of Health and Human Services, 2011). In this report, 41% of births occurred among unmarried women in

2009. In this study, 31% of the women (29/91) reported being single. Pregnant married women or pregnant women in committed relationships was reported among a majority of both English speaking women (70.7%) and Spanish speaking women (56%). Studies emphasize the role of a spouse or partner as a form of social support to a woman during pregnancy (Green & Rodgers, 2001; Kim, Choi & Ryu, 2010; Logsdon, Birkimer, & Barbee, 1997; Xie et al., 2010). With higher social support, stress decreased for married Korean women who also demonstrated an increase in the practice of prenatal care (Kim et al., 2010). More than half of the women in the English speaking group (51.2%) and a majority of Spanish speaking pregnant women (68%) also reported living with spouse or significant other, suggesting tangible supports during pregnancy.

Spanish speaking women in the current study also identified family support as an important source of emotional and informational support during pregnancy. With negative outcomes related to birth and pregnancy associated with poorer and minority populations, family support may help mothers acquire knowledge and gain confidence during pregnancy. Researchers have suggested that factors attributable to positive outcomes for pregnant Hispanic women include family support, resilience, and less acculturation (Bryant, Worjoloh, Caughey, & Washington, 2010; Luecken, Purdom & Howe, 2009; Mann et al., 2010).

In addition to family support, a number of women did identify members of the healthcare team such as the nurse midwife or a doctor as a form of informational support. Twenty-two women (24%) from the entire sample (N=91) identified the

midwife as a form of informational support during pregnancy. It is important to stress that these women chose the response "other" and specified "midwife" or "partera". With serious concerns for racial/ethnic disparities in the US for women living in poor and minority communities, informational support reported by both Spanish speaking and English speaking pregnant women suggests a vital role for the CNMs in providing necessary education and counseling during pregnancy.

The current study also provides evidence for disparities related to education and employment among childbearing women living in poorer and minority communities. The majority of all pregnant women in the study reported being unemployed (56%, 51/91). In addition, 31.7 % of the English speaking group reported having at least a high school education and 29.3% reporting some college experience. Among the Spanish speaking group, the majority of participants (82%, 42/51) reported high school or less level of education. There are similar findings evident in the nursing literature regarding concerns for lower educational levels among some Hispanic groups involving women living in the US and issues related to receiving care for health related services (Armstrong et al, 2007; Durham & Pollard, 2010; Hall, Hall, Pfriemer, Wimberley & Jones, 2007; Mendelson, McNeese-Smith, Koniak-Griffin, Nyamathi & Lu, 2008; Wagner, 2009). Although the Spanish speaking women reported having a lower educational level than the group of English speaking women, the level of experience with pregnancy of Spanish speaking mothers was higher than that of the English speaking group. There were 26 women (56%) of the Spanish speaking women who reported giving birth more than once,

with an average number of births at 1.4 (*SD* = 1.41) compared to .9 (*SD* = 1.04) for English speaking women. The pregnancy history reported by a woman also provides health care providers valuable information to care for a woman during the prenatal period. Alderdice and Lynn (2009) identified careful review of a woman's obstetrical history by midwives as essential for supporting and counseling women facing stress and anxiety during pregnancy. In the current study, a woman who reported a previous history of complicated birth or high-risk pregnancy was excluded. Although lower levels of education were reported, previous experience with pregnancy was reported in the group of Spanish speaking pregnant women who reported less stress (*M* = 13.82, *SD* = 6.94) than the English speaking women (*M* = 17.36, *SD* = 8.78).

Instrumentation

There are important considerations for the use of the measurements for both perceived trust and perceived stress among English and Spanish speaking women. Acceptable reliability in the established HCR-R for the English version (α = .93) and the newly translated Spanish version (α = .89) suggests that this tool is a good measure for trust involved in the relationship between pregnant woman and CNM. Originators of the 13-item HCR-R (Bova et al., 2012) reported a Cronbach's alpha of .96 which is consistent with the findings of this study on the English version. The scale was translated for use in the Spanish speaking population. Loyalty to the original tool was established through centered translation, with no effect or change made to the original instrument (Polit & Beck, 2008). The consideration for equivalence between original and newly translated Spanish version of HCR-R

included expert review by nurse midwives dealing with diverse populations, tool creators and forward/backward translation. In addition, the validation of the HCR-R by Bova and colleagues (2012) included evidence for psychometric adequacy with Hispanic individuals reporting a subsample of 29 Hispanics with a mean score of 38 (SD, not reported) as compared to scores of 50 among 377 Whites and 48 among seven Blacks. The researchers did recognize the need for a larger sample size and pointed to concerns for the construct of trust as it differs among cultures and language, country of origin and acculturation. For these reasons, the Spanish translation was created and used in the current study.

An additional concern is also raised in the use of the HCR-R regarding the high Cronbach alpha identified in both the English version (.93) and Spanish version (.89). Originators of the English version of HCR-R scale argued that their formative work supports each item's use as different concepts of trust and concerns of removing items would weaken its meaning (Bova et al., 2012).

Regarding the use of the PSS as a measure of perceived stress among pregnant women, Cronbach's alpha for the English version did demonstrate acceptable reliability (.84). Tests for internal consistency demonstrated lower reliability in the Spanish version of the 14-item PSS in this study ($\alpha = .67$), however the revised version eliminating item 12 did demonstrate adequate internal consistency ($\alpha = .73$). The Spanish version of the PSS was reported to have adequate reliability ($\alpha = .81$, and test-retest, $r = .73$) by Remor (2006) along with the evidence reported by Mann and colleagues (2010) in pregnant women ($\alpha = .81$) and the Spanish form ($\alpha = .82$). In

light of the lower reliability scores in the current study, 78% of the Spanish speaking women did score less than 20 on the PSS. The PSS included 6 positive items and 7 negative items, eliminating item 12 which was a negative item. The intent of having both negative and positive items is to avoid "the possibility of an acquiescence response set" (Polit & Beck, 2008, p. 478). Polit and Beck (2008) also suggested that answering negative items is a difficult cognitive task. Considerations for the further use of this tool in this population not only include the appropriateness for the European Spanish version involving linguistics, but also the lower levels of education reported by Spanish speaking pregnant women.

The COC index which was calculated on each participant was used to determine the continuity of carer or provider continuity. The total number of PNC visits, the number of times seeing the same CNM and a different midwife were retrieved through self-reporting. If a woman was unsure of actual numbers, she was encouraged to ask her health care provider to review her medical record for this information. The English speaking women reported slightly higher continuity of carer (M = .46, SD = .30) than the Spanish speaking women (M = .38, SD = .23) with a similar average number of PNC visits for both English speaking women (M = 6.75, SD = 2.32) and Spanish speaking women (M = 6.66, SD = 2.24). Butler, Kim-Godwin and Fox (2008) stressed the lack of continuity in services for Hispanics in a qualitative study using semi-structured interviews among Hispanic women (n=8). Findings revealed that none of participants reported having a primary care provider either for self or a family member, although chronic illnesses like diabetes and asthma

was reported among the group. Poverty, lack of education, unemployment, low literacy and limited Spanish speaking healthcare providers have been associated with barriers to care for Hispanic populations and may also contribute to lack of continuity (Butler et al., 2008; Gonzalez, Ziebarth, Wang, Noor & Springer, 2012; Rojas-Guyler, King, & Montieth, 2008).

Study variables

English speaking pregnant women ($M = 45.17$, $SD = 9.33$) and Spanish speaking pregnant women ($M = 45.78$, $SD = 48.5$) both reported high perceived trust. Kennedy's (1995) research on midwifery suggested that a caring relationship is established through trust which was supported in the evidence of reported high scores on the HCR-R by both English speaking and Spanish speaking pregnant women receiving PNC from CNMs. This trust measured using the HCR-R described a collaborative trust involving the domains of interpersonal connection, respectful communication and professional partnering (Bova et al, 2006). According to Kennedy's (2000) exemplary midwifery care model, a midwife's philosophy of caring for and about the woman involves three dimensions, therapeutics, caring, and the profession of midwifery (Kennedy, 2000, 2004). The quantitative measure of trust used in the current study presents evidence for trust among pregnant women receiving PNC from CNMs and supports Kennedy's model. This dimension of caring is also illustrated in a response from one participant in the open-ended question which described her relationship with the CNM as "I feel good because the midwife is very attentive and caring". In addition, Kennedy's (2000) model described the outcome of

the dimension of caring in exemplary midwifery care as providing a health care experience that is respectful and empowering which is also depicted in the responses by participants as "I am happy" and "I am feeling so excited". These responses and the high measures of perceived trust reported by pregnant women in the current study suggest that women are involved in a collaborative relationship with the CNM that involved trust. It supports the evidence in the midwifery and nursing literature that describes the "with woman" philosophy and the attributes of trust and the qualities of a trusting relationship between woman and nurse midwife (Berg, 2005; Carolan & Hodnett, 2007; Edwards, 2000, 2005; Ferszt & Erickson-Owens, 2008; Green et al., 2000; Kirkham, 1999, 2011; Ny et al., 2007; Otley, 2011; Seefat -van Teeffelen et al., 2011).

Stress during pregnancy which is associated with potentially negative outcomes for mother, infant and family (Glynn et al., 2008; Humenick & Howell, 2003; Lobel et al., 2008; Nkansah-Amankra et al., 2010) was also examined in the current study. Differences in perceived stress as reported by English speaking and Spanish speaking women may be important indicators of populations most at risk for stress. Normative data was collected and analyzed using the 14-item PSS (Cohen & Williamson, 1988) including income, education, number of children, employment, age, marital status and race/ethnicity with perceived stress. Using a national area-probability sample based on the US Bureau of Census information, Cohen and Williamson (1988) reported an average score on the 14-item PSS for the entire sample (N= 2355) was 19.62 (*SD* = 7.49) with the females (n=1406) averaging a

score of 20.2 (SD = 7.8) . The current study used 13-items, eliminating item 12 and results indicated that English speaking pregnant women revealed higher perceived stress (M = 17.36, SD = 8.78) than the Spanish speaking pregnant women (M = 13.82 , SD = 6.94). The English speaking women, who were generally between the ages of 25 and 29 (34.2%), unemployed (61%), married or in a committed relationship (70.7%) and living with spouse or significant other (51.2%) indicated higher perceived stress than the Spanish speaking women. Although the majority of women in the Spanish speaking group were slightly younger, many of the women also reported being unemployed, married or in a committed relationship and living with a spouse of significant other. The less educated Spanish speaking group also reported more experience with pregnancy and previous births which may also contribute to having less perceived stress. In addition, the majority of Spanish speaking women indicated family as a source of emotional and informational support. For pregnant women coming from Central America where women are familiar with the practices of traditional midwifery, the role of the midwife in a community health center who provides PNC may also help to decrease stress and improve access to care.

In order to examine continuity of carer, the current study divided the English speaking and Spanish speaking pregnant women into three groups- low provider continuity, medium provider continuity and high provider continuity. These groups were then used in statistical analysis comparing the effect of continuity of carer on perceived trust and on perceived stress among English and Spanish speaking pregnant women. Although the Tukey's post hoc test revealed a significant difference between

the high provider continuity and low provider continuity groups on trust among English speaking women ($p = .04$), there was no significant difference among groups for trust and stress demonstrated using the Games-Howell post hoc test. The ANOVA did reveal a significant difference between continuity of carer groups on perceived trust [$F(2,38) = 3.20$, $p = .05$] for English speaking women but not for Spanish speaking women. This result suggests that continuity of carer effects perceived trust for English speaking pregnant women but not for Spanish speaking pregnant women. Although researchers have suggested that provider continuity is critical to the engaging and forming of a trusting relationship between patient and provider (Redsell et al., 2007), there was no effect of continuity of carer on perceived trust for the Spanish speaking women in the current study. Spanish speaking pregnant women reported high perceived trust with CNMs, who practice nurse midwifery care and the holistic approach toward pregnancy and childbirth that is personal and "meets the woman where she is" (Kennedy, 2004). These Spanish speaking women who are more experienced with pregnancy and childbirth may not be concerned with seeing the same CNM. Continuity of carer or seeing the same midwife might mean making appointments on specific days and may mean they cannot be flexible with their schedules and time.

In addition, researchers have examined the lack of continuity in services experienced by Hispanics in the US, highlighting acculturation and the use of traditional health practices as factors affecting care utilization (Butler et al., 2008). Although poverty, lack of education, unemployment, lack of transportation, low

literacy and limited Spanish speaking healthcare providers have been reported in the literature as barriers to care for Hispanic populations (Butler et al., 2008; Gonzalez et al., 2012; Rojas-Guyler, et al., 2008), the findings from the current study suggest that a predominantly Hispanic population of pregnant women were coming to the community health center and seeking PNC and had high perceived trust whether they saw the same midwife or not.

The reported perceived trust by Spanish speaking women supports Kennedy's work which identified the role of the midwife in the establishment of trust "with a woman they had never met before" and "provide exemplary care" (Kennedy, 2004, p.508). For English speaking pregnant women, the continuity of carer did impact perceived trust with higher provider continuity and perceived trust. These findings are also supported in Kennedy's Delphi study (2004) where the women indicated that seeing the same midwife allowed them to engage in a caring relationship. The results from the current study suggest that although continuity of carer during the prenatal period may influence some women's perceived trust with nurse midwives, the trusting relationship may also depend on cultural differences, experience of pregnancy/birth, and women's own personal needs.

A content analysis of 85 reality-based birth television shows aired in the US in 2007 on two cable television networks by Morris and McInerney (2010) also raises important issues related to how women perceive childbirth and how social influences may affect perceived trust and perceived stress among pregnant women. Morris and McInerney (2010) suggested there is a lack of representation of practices such as

physiologic birth without medical interventions and a stronger emphasis on technology on reality television shows. For Spanish speaking women who have the experience of previous childbirth, are less acculturated and less affected by such media influence, there may be less perceived stress about pregnancy and childbirth as well as stronger perceptions of trust with the community-based CNM.

For English speaking pregnant women, the continuity of carer or seeing the same midwife did have an effect on perceived trust but no effect on perceived stress. The forming of collaborative trust and a personal relationship with the same midwife is consistent with the partnership models of practice in midwifery (Freeman, 2006) where friendships occur between women and midwives. For Spanish speaking women who identified strong family support, the relationship between pregnant women and CNM may be viewed differently. For English speaking women who are seeking supportive care and a personal relationship, continuity of carer may be necessary to allow for the relationship to grow over time.

Limitations

The results from this study should be interpreted in light of several limitations. The findings of this study cannot be generalized for all Hispanic cultures and all pregnant women receiving PNC across the US from nurse midwifery practices. This descriptive study presents data on a sample of women and the cross-sectional nature of this study is a limitation. This study was unable to examine the group characteristics. The research does offer some insight by providing potential associations that should be further tested in future research.

Psychometric testing was reported for the established tool, HCR-R (Bova et al, 2012) and the newly translated Spanish version used in the study. Additional psychometrics are needed to validate the use of the Spanish version of the HCR-R using a larger sample to include males and diverse Hispanic, Latino and Spanish cultures. Polit and Beck (2008) emphasize the need for full psychometric evaluation using a large sample size to ensure soundness of the instrument and confirm inferences about equivalence. The limitations of the current study include the small sample sizes of English and Spanish speaking pregnant women and low reliability as revealed with the Spanish speaking women in this study using the European Spanish version of the PSS (Remor, 2006).

Additional limitations include the self-reporting of data used to determine the COC index. The COC index relied on the number of total visits and number of visits to CNMs reported by the participant and these reports were not objectively confirmed. This study also did not offer any incentives for participation. For future studies, it would be beneficial to offer some incentive to increase enrollment and willingness to participate in research.

Chapter VI

SUMMARY

Conclusions

Kennedy's (1995) research on midwifery suggests that a caring relationship is established through trust. This study provides a quantitative measure of collaborative trust involved in the relationship between a pregnant woman and CNMs. The current study adds to a body of knowledge regarding nurse midwifery care, prenatal stress, healthcare relationships, prenatal care and health disparities. This study provides preliminary evidence for the use of HCR-R for Spanish speaking women as well as the use of the HCR-R outside the context of chronically ill patients.

In addition to nurse midwifery care, further studies are necessary that examine HCR trust using other health care providers. The understanding of HCR trust among pregnant women using obstetricians and practices other than nurse midwifery can help identify the appropriate utilization of services for maternal health practices. In addition, the linking of perceptions of trust to patient outcomes like postpartum depression, birth weight, preterm birth, surgical delivery rate and infant mortality/morbidity in larger, more diverse population is also needed. The understanding of trust and patient outcomes may help to improve quality of care and access to appropriate services.

With the need to increase primary care services, the evidence for trusting relationships established during pregnancy between pregnant women and CNMs also supports advancing models of nurse midwifery care including providing primary care

for women. In addition, the building of a trusting relationship with women who are poor, uneducated and among minority groups with health care providers addresses eliminating barriers to care and improving health for women most at risk for negative outcomes.

Recommendations

Women with less than a high school education, low literacy and language barriers face considerable challenges when accessing appropriate and needed health care. This study does provide evidence for Hispanic pregnant women who are accessing PNC from CNMs at a community health center. For some Hispanic populations in the US, health workers in the community or "promotoras" support the delivery of culturally relevant healthcare services (Gonzalez et al., 2012). For the Spanish speaking women in this study especially those women of Spanish speaking countries like Guatemala, they understand that the relationship between a midwife and woman involves trust and respect established through confidence building and the sharing of information (Foster et al, 2011). Nurse midwifery care in these communities does promote culturally relevant healthcare services, supporting not only patient-centered care but also community-based nursing care.

Future recommendations identified in this study include 1) the development of linguistically and culturally relevant research instruments that measure perceived stress during pregnancy, 2) the relevant nature of years of residency in the US and country of origin to understand the impact of trust on outcomes, 3) inclusion of high-risk and adolescent females and their perceptions of HCR trust, 4) a review of

medical records or health care charts for objective data to measure COC index on a larger scale, examining the relationship of continuity of carer on pregnancy and birth outcomes such as postpartum depression, birth weight, preterm birth and surgical delivery rate, and 5) the need for appropriate translation services, incentive programs and funding for research in nursing and nurse midwifery.

Implications for future research

Pregnant females under the age of 18 and high-risk pregnant women were excluded in this study. Future studies addressing trust might address women under 18 to gain insight into developmental stages and its impact on HCR trust. Additional areas for future research include further psychometric testing of the newly translated Spanish tool and its use in larger populations. Longitudinal and more in-depth studies are needed to investigate the direction of causality between trust and other variables like socio demographics and birth outcomes.

Implications for education and practice

The evidence of high perceived trust reported by both English speaking and Spanish speaking women suggests that this nurse midwifery care practice promotes collaborative trust in their model of maternity care. Although the majority of CNMs in the nurse midwifery practice are not fluent in the Spanish language and the majority are not from Hispanic, Latino or Spanish ethnic backgrounds, the Spanish speaking women did report high perceived trust. The location of the community health center in close proximity to women's homes supports the role of the CNM in community-based care and may help to promote a sense of community. Pregnant

women in the study also reported that CNMs provided emotional and informational support during pregnancy which stresses the critical role of the CNM in prenatal care education and counseling.

It is the trust that develops during prenatal visits which allows a woman to accept advice and information from the nurse midwife. A collaborative trust ensures that the midwife will help the pregnant woman to make important decisions regarding pregnancy and childbirth. Findings in this study involving high perceived trust emphasize the value of nurse midwifery care during the prenatal period. In addition, low perceived stress also reported in this study provides evidence for positive outcomes for women choosing CNMs for PNC. With 7.6% of all US births attended by CNMs and nurse midwives in the US in 2009 (Hamilton, Martin & Ventura, 2010), pregnant women in the US should be encouraged to choose CNMs for maternity health services.

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Appendix A. Letter of Solicitation, English version

Study Title: THE RELATIONSHIP OF TRUST AND PRENATAL STRESS AMONG PREGNANT WOMEN RECEIVING CARE FROM A CERTIFIED NURSE MIDWIFE

My name is Maria Torchia LoGrippo and I am a doctoral student in the College of Nursing at Seton Hall University and am doing research on pregnant women receiving care from certified nurse midwives and issues like stress during pregnancy. I want to understand a pregnant woman's relationship with a certified nurse midwife, the trust involved in the relationship and also the stress experienced during pregnancy.

If a pregnant woman wishes to be in the study, the woman will be asked to complete three questionnaires that will take about 20-25 minutes. The questionnaires include the following:

1) Health care Relationship (HCR) Trust Scale-R which asks the pregnant woman about her relationship with the certified nurse midwife and an example of a question would be how the pregnant woman feels, on a scale from 0 to 4, that the "midwife is an excellent listener"
2) Perceived Stress Scale- (PSS) which asks the pregnant woman questions about stress like "In the last month, how often have you dealt successfully with irritating life hassles?"
3) Participant information form which asks the pregnant woman questions regarding facts about her social and personal life like "What is your age?" and "How many children are living in her home?"

This study is voluntary which means you may decide to be a part of the study or you may decide not to take part in the study and this does not affect your care here at the center. There is no money or other direct benefit from being in the study.

No names will be collected and there will be no way to know who did or did not take part in the study. There will be one number placed on all the pages of the study material to keep each person's responses separate and to make sure that the pregnant woman is nameless and unidentified.

The responses to the questionnaires and all the information given to the researcher will be kept under lock and key in the researcher's home and is strictly confidential. I work with a committee of three other nurses who will be able to see the answers on the questionnaires. I will need to keep these papers for three years. No information will be stored on computers or laptops. The information from the questionnaires will be put into a computer program by the researcher using a special device known as a flash drive which will be locked in a secure place in my home.

If for any reason when reading the questions, you feel uncomfortable or upset, please let me know. There are no expected issues or risks for being in the study. In the unlikely event that you tell me or show signs of feeling upset, I will refer you to the social worker here at the center or a mental health professional at Trinitas for whom you can share your feelings or concerns.

Contact information: At any time, questions or concerns regarding the study must be directed to Maria Torchia LoGrippo at (XXX) XXX-XXXX or my advisor, Josephine Devito at (XXX) XXX-XXXX. I thank you for your help and being a part of this research study.

Appendix B. Letter of Solicitation, Spanish version

Carta de solicitud

Título del estudio: LA RELACIÓN DE CONFIANZA Y ESTRÉS PRENATAL EMBARAZADAS QUE RECIBEN ASISTENCIA DE UNA ENFERMERA PARTERA CERTIFICADA

Mi nombre es Maria Torchia LoGrippo y soy estudiante doctoral en la Facultad de Enfermería de la Universidad Seton Hall y estoy realizando una investigación sobre las mujeres embarazadas que reciben asistencia de emfermeras parteras certificada y temas como el estrés durante el embarazo.

Quiero comprender la relación de una mujer embarazada con una enfermera partera certificada, la confianza involucrada en la relación y también el estrés experimentado durante el embarazo.

Si una mujer embarazada desea formar parte del estudio, se le pedirá a la mujer que complete tres cuestionarios que le tomará aproximadamente entre 20 y 25 minutos. Los cuestionarios incluyen lo siguiente:

1) Escala de confianza entre la madre y la partera (HCR, por sus siglas en inglés) que pregunta a la mujer embarazada sobre su relación con la enfermera partera certificada y un ejemplo de una pregunta sería cómo se siente la mujer embarazada, en una escala de 0 a 4, con el hecho que "la partera es una excelente escuchadora"
2) Escala de estrés percibido (PSS, por sus siglas en inglés) que formula preguntas a la mujer embarazada sobre el estrés, como "En el último mes, ¿cuán a menudo obtuvo un resultado exitoso con dificultades irritantes de la vida?"
3) Formulario con información de la participante que formula preguntas a la mujer embarazada relacionadas con hechos sobre su vida social y personal como, "¿Qué edad tiene?" y "¿Cuántos niños viven en su casa?"

Este estudio es voluntario, lo cual significa que usted puede decidir formar parte del estudio o puede decidir no formar parte del estudio y esto no afecta su atención aquí en el centro. No hay dinero u otro beneficio directo por formar parte del estudio. No se recopilarán nombres y no habrá forma de saber quién formó o no formó parte del estudio. Habrá un número colocado en todas las páginas del material de estudio para mantener separadas las respuestas de cada persona y para asegurarnos que la mujer embarazada es anónima e inidentificada.

Las respuestas a los cuestionarios y toda la información brindada al investigador se mantendrán bajo llave en la casa del investigador y son estrictamente confidenciales. Trabajo con una comisión de otras tres enfermeras con quienes veremos las respuestas a los cuestionarios. Necesitaré mantener estos papeles durante tres años.

No se guardará información en computadoras de escritorio o portátiles. El investigador cargará la información obtenida de los cuestionarios en un programa de computación usando un dispositivo especial conocido como una memoria flash, la cual se guardará en un lugar seguro en mi casa.

Si por alguna razón se siente incómoda o molesta cuando lee las preguntas, por favor dígamelo. No hay expectativas de consecuencias o riesgos por formar parte de este estudio. En el caso poco probable que me diga o me muestre señales que se siente molesta, la remitiré a un trabajador social aquí en el centro o a un profesional en salud mental en Trinitas, con quien podrá compartir sus sentimientos o inquietudes.

Información de contacto: En cualquier momento, las preguntas o inquietudes relacionadas con el estudio deben dirigirse a Maria Torchia LoGrippo al (XXX) XXX-XXXX o a mi asesora, Josephine Devito al (XXX) XXX-XXXX.
Gracias por su ayuda y por formar parte de este estudio de investigación.

Appendix C. Recruitment script, English version

Would you like to help nursing by participating in a research study that looks at your care with the certified nurse midwife, trust and stress during pregnancy?
If so, my name is Maria Torchia LoGrippo and I am a doctoral student in the College of Nursing at Seton Hall University. The title of my study is "THE RELATIONSHIP OF TRUST AND PRENATAL STRESS AMONG PREGNANT WOMEN RECEIVING CARE FROM A CERTIFIED NURSE MIDWIFE".

This study will help to provide information about receiving care from certified nurse midwives during pregnancy and issues like stress during pregnancy. You are being asked to participate in this study because you are pregnant and receiving care from a certified nurse midwife and you may have important information to share about this care.

Before I tell you more about the study, I need to ask you a few quick questions to see if you can be part of the study:
Are you age 18 or older? [Must answer "Yes" to be eligible]
Are you in your third trimester or at least 7 months pregnant? [Must answer "Yes" to be eligible immediately. If no, must wait until third trimester]
Have you had at least three visits to this center for this pregnancy? [Must answer "Yes" to be eligible immediately. If no, must wait for completion of third visit]
Do you speak, read, and understand English and/or Spanish? [Must answer "Yes" to be eligible.]
Did you have any trouble with previous pregnancies or your current pregnancy or were you ever treated for depression? [Must answer "No" to be eligible.]
[If person is eligible to participate, will proceed to give further information. If not eligible, will thank the individual for their time and interest.]

This study is completely voluntary which means that you do not have to participate in this study unless you want to. The research study involves completing three (3) questionnaires, which may take about 20-25 minutes. The three questionnaires include Health care Relationship (HCR) Trust Scale-R, Perceived Stress Scale (PSS), and Participant Information Form. The Health care Relationship (HCR) Trust Scale-R asks you questions about your relationship with the certified nurse midwife like how you feel after seeing your midwife. The Perceived Stress Scale asks you questions regarding stress like "In the last month, how often have you dealt successfully with irritating life hassles?" and the Participant Information Form asks information like do you work or how many children live in your house?

You will be given a study packet that includes a letter of solicitation and three questionnaires. I will ask that before you begin the questionnaires, you review the letter of solicitation and if you have any questions, please let me know. I will answer any of your questions or concerns. Completing the questionnaires means you are

willing to be a part of the study. You may complete the questionnaires here in a private office in the center or take the questionnaires with you and return them to the center placing them in the box labeled "NURSING STUDY" located in the nursing office, I will show you where the box is located. If you decide that you do not wish to participate in the study after reading the letter and questionnaires, I would ask that you still the papers in the box. The questionnaires are numbered so that I can know that all the pages belong to the same person. I will not collect any names and I will not know what number belongs to which person.

Would you be willing to be a part of the study? *(If yes, continue. If no, thank them for their time.)*
(If yes and are present in the center, continue. If speaking to them on the phone, set a time and date for meeting them at the center).
Thank you for agreeing to participate. I will ask that you come to an office with me so I can give you the questionnaires and I want to show you where you will return them when you are finished. (Show the woman the location of the secure and slotted box to return the study information and then continue the following discussion in the private office)

There is a possibility that some of the questions may make you uncomfortable or upset. If so, please let me know. If you feel or show any emotional concerns, I will refer you to a social worker here at the center to whom you can share your feelings or concerns. Trinitas also has a mental health program that can assist you if you feel you need further help. You also need to understand that all information that I receive from you from the questionnaires is confidential and will be kept under lock and key. When I get all completed questionnaires from everyone who has agreed to be in the study, I will group all the answers together in a report or presentation. There will be no way to identify each woman. Remember, your decision whether to be in the study is completely voluntary and will in no way affect the medical care you receive.
Would you prefer to answer the questions in English or Spanish?
(If English, provide patient with packet of study materials in English and if Spanish, provide patient with study materials in Spanish)

Appendix D. Recruitment script, Spanish version

¿Le gustaría ayudar en el trabajo de las enfermeras participando de un estudio de investigación que examina su atención con la enfermera partera diplomada, la confianza y el estrés durante el embarazo?

Si es así, mi nombre es Maria Torchia LoGrippo y soy estudiante doctoral de la Facultad de Enfermería de la Universidad Seton Hall. El título de mi estudio es "LA RELACIÓN DE CONFIANZA Y ESTRÉS PRENATAL EN EMBARAZADAS QUE RECIBEN ASISTENCIA DE UNA ENFERMERA PARTERA CERTIFICADA". Este estudio ayudará a brindar información sobre la atención recibida de las enfermeras parteras diplomadas. Se le solicita participar en este estudio porque está embarazada y recibe atención de una enfermera partera diplomada y puede tener información importante para compartir relacionada con este cuidado.

Antes de contarle más sobre este estudio, necesito realizarle unas preguntas breves para ver si puede formar parte del mismo:
¿Tiene 18 años o más? [Debe responder "Sí" para ser elegible]
¿Se encuentra en el tercer trimestre de embarazo o por lo menos en el 7° mes? [Debe responder "Sí" para ser elegible inmediatamente. De lo contrario, deberá esperar hasta el tercer trimestre]
¿Tuvo por lo menos tres visitas a esta clínica en este embarazo? [Debe responder "Sí" para ser elegible inmediatamente. De lo contrario, deberá esperar hasta completar la tercera visita]
¿Habla, lee y comprende inglés y/o español? [Debe responder "Sí" para ser elegible.]
¿Tuvo algún problema con embarazos anteriores o con el embarazo actual o alguna vez realizó un tratamiento por depresión? [Debe responder "No" para ser elegible.]
[Si la persona es elegible para participar, proceda a brindar más información. Si no es elegible, agradezca al individuo por su tiempo e interés.]

Este estudio es completamente voluntario, lo cual significa que no tiene que participar en este estudio, salvo que lo desee. El estudio de investigación implica completar tres (3) cuestionarios, lo cual puede tomarle aproximadamente entre 20 y 25 minutos. Los tres cuestionarios incluyen Escala de confianza entre la madre y la partera (HCR, por sus siglas en inglés), Escala de estrés percibido (PSS, por sus siglas en inglés) y Formulario con información de la participante. El cuestionario Escala de confianza entre la madre y la partera (HCR) le formula preguntas sobre su relación con la madre y la partera , tales como el modo en que se siente luego de visitar a su partera. El cuestionario Escala de estrés percibido le formula preguntas relacionadas con el estrés, como "En el último mes, ¿cuán a menudo obtuvo un resultado exitoso en dificultades irritantes de la vida?" y el Formulario con información de la participante solicita información tal como, ¿trabaja? o ¿cuántos niños viven en su casa?

Se le entregará un paquete de estudio que incluye una carta de solicitud y tres cuestionarios. Le voy a pedir que antes de comenzar con los cuestionarios, revise la carta de solicitud y si tiene alguna pregunta, por favor dígamela. Responderé cualquiera de sus preguntas o inquietudes. El hecho de completar los cuestionarios, implica que desea formar parte del estudio. Puede completar los cuestionarios aquí en una oficina privada en el centro, o llevarse los cuestionarios y devolverlos al centro colocándolos en la caja etiquetada "NURSING STUDY" (ESTUDIO SOBRE ENFERMERÍA) ubicada en enfermería, le mostraré donde está ubicada la caja. Si decide que no desea participar en el estudio después de leer la carta y los cuestionarios, le pediría que deje los papeles en la caja. Los cuestionarios están numerados de modo que yo pueda saber que todas las páginas pertenecen a la misma persona. No recopilaré ningún nombre y no sabré qué número pertenece a cada persona.
¿Desearía formar parte del estudio? *(Si la respuesta es Sí, continúe. Si la respuesta es No, agradézcales por su tiempo.)*
(Si la respuesta es Sí y están presentes en el centro, continúe. Si están hablando por teléfono, coordinen una fecha y una hora para reunirse en el centro).
Gracias por acceder a participar. Le voy a pedir que venga conmigo a una oficina así puedo darle los cuestionarios y quiero mostrarle donde los devolverá cuando los haya terminado. (Muéstrele a la mujer la ubicación de la caja asegurada y con la ranura para devolver la información del estudio y luego continúe con la siguiente discusión en la oficina privada)

Existe la posibilidad que algunas de las preguntas la puedan hacer sentir incómoda o molesta. Si esto sucede, por favor dígamelo. Si siente o manifiesta cualquier inquietud emocional, la remitiré a un trabajador social aquí en el centro con quien puede compartir sus sentimientos o inquietudes. Trinitas también tiene un programa de salud mental que la puede ayudar si usted siente que necesita más ayuda. También es necesario que entienda que toda la información que yo recibo de parte suya proveniente de los cuestionarios es confidencial y se mantendrá bajo llave.
Cuando tenga todos los cuestionarios completos de todas las personas que accedieron a formar parte del estudio, agruparé todas las respuestas juntas en un informe o presentación. No habrá forma de identificar a cada mujer. Recuerde, su decisión de formar parte o no del estudio es completamente voluntaria y no afectará de ninguna manera la atención médica que recibe.
¿Prefiere responder las preguntas en inglés o en español?
(Si prefiere responder en inglés, déle a la paciente el paquete de materiales del estudio en inglés y si prefiere responder en español, déle a la paciente los materiales de estudio en español)

Appendix E. Participant Information Form, English versión

DATE:

Study #___

1. _____Continuity of care index (Researcher will complete this section)

$$\frac{\sum_{j=1}^{s} n_j^2 - N}{N(N-1)}$$

PLEASE BEGIN HERE:
Answer these questions to the best of your ability.
1A. How many total visits did you have to the center for this pregnancy?

_____

1.B How many times did you see the same midwife for your visit?

_____

1.C How many different midwives did you see coming to the center for this pregnancy?_____

1.D. When was your first visit to the center for this pregnancy?

_____

2. What is your age?

_____

3. How many children age 17 or younger live in your household? Please specify the ages of each child.

_____

_____

_____

4. What is your home's ZIP code? (Please enter 5-digit ZIP code; for example 00544)

_____

Please respond to the following questions. Place a check mark (✓) next to the best response and provide explanations if necessary.

5. Which of the following responses best describes your current household living arrangement?

- o I live alone
- o I live with my parents, a guardian or family member
- o I live with my spouse or significant other
- o Other (please specify) _____

6. What is the highest level of school you have completed or the highest degree you have received?

- o Less than high school degree
- o High school degree or equivalent (e.g., GED)
- o Some college but no degree
- o Associate degree
- o Bachelor degree
- o Graduate degree

7. Which of the following categories best describes your employment status?

- o Employed, working 1-39 hours per week
- o Employed, working 40 or more hours per week
- o Not employed, looking for work
- o Not employed, NOT looking for work
- o Retired

- Disabled, not able to work

8. Are you now married, widowed, divorced, separated, never married or in a committed relationship?

- Single
- Married
- Widowed
- Divorced
- Separated
- Committed relationship
- Other (please specify) _____

9. Are you White, Black or African-American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific islander, or some other race?

- White
- Black or African-American
- American Indian or Alaskan Native
- Asian
- Native Hawaiian or other Pacific Islander
- From multiple races
- Other (please specify) _____

10. Are you Mexican, Mexican-American, Chicano, Puerto Rican, Cuban, Cuban-American, or some other Spanish, Hispanic, or Latino group?

- o I am not Spanish, Hispanic, or Latino
- o Mexican
- o Mexican-American
- o Chicano
- o Puerto Rican
- o Cuban
- o Cuban-American
- o Some other Spanish, Hispanic, or Latino group
- o From multiple Spanish, Hispanic, or Latino groups
- o Other (please specify) _____

11. Which of the following best describes the person you look to for emotional support concerning your pregnancy and current health status?

- o Family member
- o Close friend
- o The baby's birth father
- o Neighbor
- o Community member (a person from church, workplace, school)
- o Other (please specify) _____

12. Which of the following best describes the person you look to answer important questions concerning your pregnancy and current health status?

- o Family member
- o Close friend
- o The baby's birth father
- o Neighbor
- o Community member (a person from church, workplace, school)
- o Other (please specify) _____

13. Which of the following best describes your pregnancy history?

- o I have never been pregnant before
- o I have been pregnant but have never given birth before. Please specify how many times_____
- o I have been pregnant and I have given birth only one time before
- o I have given birth more than once. Please specify how many times_____

14. Have you had previous experience with care from a nurse midwife?

- o Yes (please indicate when and how long?)_____
- o No

Please feel free to provide any additional comments:_____

_____

_____

_____

THANK YOU!!!

Appendix F. Participant Information form, Spanish version

Formulario con información de la participante, versión en español
Estudio #____

1. _____Continuidad del índice de atención (El investigador completará esta sección)

$$\frac{\sum_{j=1}^{s} n_j^2 - N}{N(N-1)}$$

POR FAVOR COMIENCE AQUÍ:
Responda estas preguntas lo mejor que pueda.

1.A. En total, ¿cuántas visitas realizó al centro por este embarazo?

_____

1.B ¿Cuántas veces vio a la misma partera en sus visitas?

_____

1.C ¿Cuántas parteras distintas vio que vienen al centro en este embarazo?

_____

1.D. ¿Cuándo fue su primera visita a la clínica para este embarazo?

_____

2. ¿Qué edad tiene?

_____

3. ¿Cuántos niños de 17 años o menores viven en su vivienda? Por favor especifique las edades de cada niño.

_____

_____

_____

4. ¿Cuál es el código postal de su casa? (Por favor ingrese un código postal de 5 dígitos; por ejemplo 00544)

_____

Responda las siguientes preguntas. Marque con un tilde (✓) la mejor respuesta y provea una explicación si fuera necesario.

5. ¿Cuál de las siguientes respuestas describe de la mejor manera cómo se conforma su hogar hoy?

- o Vivo solo/a
- o Vivo con mis padres, un tutor o un miembro de la familia
- o Vivo con mi esposo o pareja
- o Otro (especificar) _____

6. ¿Cuál es el máximo nivel de educación que ha completado o el mayor título que ha obtenido?

- o No completó el nivel secundario
- o Completó el nivel secundario o equivalente (por ejemplo, GED)
- o Estudio superior sin obtener el título
- o Tecnicatura
- o Título terciario
- o Título universitario

7. ¿Cuál de las siguientes categorías describe de la mejor manera su situación laboral?

- o Trabajo entre 1 y 39 horas por semana
- o Trabajo 40 o más horas por semana
- o No trabajo pero estoy buscando empleo
- o No trabajo y NO estoy buscando empleo
- o Jubilado
- o Discapacitado, no puedo trabajar

8. ¿Actualmente se encuentra casado/a, viudo/a, divorciado/a, separado/a, soltero/a, o está comprometido/a?

- o Soltero/a
- o Casado/a
- o Viudo/a
- o Divorciado/a
- o Separado/a
- o Comprometido/a
- o Otro (especificar) _____

9. ¿Es de raza blanca, negra o afroamericana, amerindio o nativo de Alaska, asiática, nativo de Hawai u otra isla del Pacífico, o de otra raza?

- o Blanca
- o Negra o afroamericana
- o Amerindio o nativo de Alaska:
- o Asiática
- o Nativo de Hawai u otra isla del Pacífico
- o Dos o más razas
- o Otra (especificar) _____

10. ¿Es mexicano, mexicano-estadounidense, chicano, de Puerto Rico, de Cuba, cubano-estadounidense, o de algún otro grupo étnico español, hispánico o latino?

- o No soy español, hispánico ni latino
- o Mexicano
- o Mexicano-estadounidense
- o Chicano
- o Puertorriqueño
- o Cubano
- o Cubano-estadounidense
- o Otro grupo étnico español, hispánico o latino
- o Más de un grupo étnico español, hispánico o latino
- o Otro (especificar) _____

11. ¿A cuál de las siguientes personas recurre cuando necesita apoyo emocional en relación con su embarazo o su estado de salud actual?

- o Miembro de la familia
- o Amigo cercano
- o Padre biológico
- o Vecino
- o Miembro de la comunidad (una persona de la iglesia, del trabajo, de la escuela)
- o Otra (especificar) _____

12. ¿A cuál de las siguientes personas recurre cuando tiene alguna duda importante en relación con su embarazo o su estado de salud actual?

- o Miembro de la familia
- o Amigo cercano
- o Padre biológico
- o Vecino
- o Miembro de la comunidad (una persona de la iglesia, del trabajo, de la escuela)
- o Otra (especificar) _____

13. ¿Cuál de las siguientes opciones describe de la mejor manera el historial de embarazo?

- o Nunca estuve embarazada
- o Estuve embarazada pero nunca di a luz. Especificar cuántas veces estuvo embarazada_____
- o Estuve embarazada y di a luz una sola vez
- o Di a luz más de una vez. Especificar cuántas veces dio a luz_____

14. ¿Alguna vez ha recibido asistencia por parte de una enfermera partera?

- o Sí (indicar cuándo y por cuánto tiempo)_____
- o No

Por favor siéntase libre de proveer cualquier comentario adicional:

_____

_____

_____

¡MUCHAS GRACIAS!

Appendix G: Health Care Relationship (HCR) Trust scale- R, English version

Directions: Listed below are a number of statements about your relationship with the nurse midwife here at the health center. Please read each item and decide which of the following response best describes how you feel about your midwife who helps to manage your prenatal care.

0=none of the time
1=some or a little of the time
2=occasionally or a moderate amount of the time
3=most of the time
4=all of the time

	0=none of the time	1=some or a little of the time	2=occasionally or a moderate amount of the time	3=most of the time	4=all of the time
1.How often does your midwife discuss options and choices with you before health care decisions are made?	0	1	2	3	4
2.My midwife is committed to providing the best care possible	0	1	2	3	4
3.My midwife is sincerely interested in me as a person	0	1	2	3	4
4.My midwife is an excellent listener	0	1	2	3	4
5.My midwife accepts me for who I am	0	1	2	3	4

6.My midwife tells me the complete truth about my health-related problems	0	1	2	3	4
7.My midwife treats me as an individual	0	1	2	3	4
8.My midwife makes me feel that I am worthy of his/her time and effort	0	1	2	3	4
9.My midwife takes the time to listen to me during each appointment	0	1	2	3	4
10.I feel comfortable talking to my midwife about my personal issues	0	1	2	3	4
11.I feel better after seeing my midwife	0	1	2	3	4
12.How often do you think about changing to a new midwife?	0	1	2	3	4
13.How often does your midwife consider your need for privacy?	0	1	2	3	4

Appendix H. Health Care Relationship (HCR) Trust scale- R, Spanish version

Escala de confianza entre la madre y la partera

Instrucciones: A continuación se enumera una serie de afirmaciones sobre su relación con la partera aquí en el centro de salud. Por favor, lea cada frase y decida cuál de las siguientes respuestas describe mejor cómo se siente acerca de su partera que ayuda a administrar su cuidado prenatal.

Respuestas opcionales:
0 = ninguno de los casos
1 = una parte o pocas veces
2 = de vez en cuando o una cantidad moderada de veces
3 = la mayor parte del tiempo
4 = todo el tiempo

	0 = ninguno de los casos	1 = una parte o pocas veces	2 = de vez en cuando o una cantidad moderada de veces	3 = la mayor parte del tiempo	4 = todo el tiempo
1.Con qué frecuencia su partera discute sobre las opciones y elecciones con usted antes de tomar decisiones de atención de salud	0	1	2	3	4
2.Mi partera se encuentra comprometida a ofrecer la mejor atención posible	0	1	2	3	4
3.Mi partera se encuentra sinceramente interesada en mí como persona	0	1	2	3	4

4.Mi partera es se encuentra una persona que escucha excelentemente	0	1	2	3	4
5.Mi partera me acepta por quién como soy	0	1	2	3	4
6.Mi partera me dice totalmente la verdad acerca de mis problemas de salud	0	1	2	3	4
7.Mi partera me trata como a una atención personalizada	0	1	2	3	4
8.Mi partera me hace sentir que soy digno de su tiempo y esfuerzo	0	1	2	3	4
9.Mi partera dedica su tiempo a escucharme durante cada cita	0	1	2	3	4
10.Me siento cómodo hablando con mi partera sobre mis cuestiones personales	0	1	2	3	4
11.Me siento mejor después de ver a mi partera	0	1	2	3	4
12.Con qué frecuencia piensa en cambiar de partera?	0	1	2	3	4
13. Con qué frecuencia su partera considera su necesidad de privacidad?	0	1	2	3	4

Appendix I: Perceived Stress Scale, English version

Perceived Stress Scale

Instructions: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

0= Never
1= Almost never
2= Sometimes
3= Fairly often
4= Very Often

	0=never	1=almost never	2=sometimes	3=fairly often	4=very often
1.In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3.In the last month, how often have you felt nervous and "stressed"?	0	1	2	3	4

4. In the last month, how often have you dealt successfully with irritating life hassles?	0	1	2	3	4
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	0	1	2	3	4
6. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
7. In the last month, how often have you felt that things were going your way?	0	1	2	3	4
8.In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
9.In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4

10.In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
11. In the last month, how often have you been angered because of things that happened that been outside of your control?	0	1	2	3	4
12.In the last month, how often have you found yourself thinking about things that you have to accomplish?	0	1	2	3	4
13.In the last month, how often have you been able to control the way you spend your time?	0	1	2	3	4
14.In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Appendix M. Perceived Stress Scale, Spanish version

Escala del estrés percibido

Las preguntas en esta escala hacen referencia a sus sentimientos y pensamientos durante el último mes. En cada caso, por favor indique con un círculo alrededor del número cómo usted se ha sentido o ha pensado en cada situación.

0= Nunca
1= Casi nunca
2= De vez en cuando
3= A menudo
4= Muy a menudo

	Nunca	Casi nunca	De vez en cuando	A menudo	Muy a menudo
1. En el último mes, ¿con qué frecuencia ha estado afectado por algo que ha ocurrido inesperadamente?	0	1	2	3	4
2. En el último mes, ¿con qué frecuencia se ha sentido incapaz de controlar las cosas importantes en su vida?	0	1	2	3	4
3. En el último mes, ¿con qué frecuencia se ha sentido nervioso o estresado?	0	1	2	3	4
4. En el último mes, ¿con qué frecuencia ha manejado con éxito los pequeños problemas irritantes de la vida?	0	1	2	3	4

5. En el último mes, ¿con qué frecuencia ha sentido que ha afrontado efectivamente los cambios importantes que han estado ocurriendo en su vida?	0	1	2	3	4
6. En el último mes, ¿con qué frecuencia ha estado seguro sobre su capacidad para manejar sus problemas personales?	0	1	2	3	4
7. En el último mes, ¿con qué frecuencia ha sentido que las cosas le van bien?	0	1	2	3	4
8. En el último mes, ¿con qué frecuencia ha sentido que no podía afrontar todas las cosas que tenía que hacer?	0	1	2	3	4
9. En el último mes, ¿con qué frecuencia ha podido controlar las dificultades de su vida?	0	1	2	3	4
10. En el ultimo mes, ¿con que frecuencia se ha sentido que tenia todo bajo control?	0	1	2	3	4
11. En el último mes, ¿con qué frecuencia ha estado enfadado porque las cosas que le han ocurrido estaban fuera de su control?	0	1	2	3	4
12. En el último mes, ¿con qué frecuencia ha pensado sobre las cosas que le quedan por hacer?	0	1	2	3	4

13. En el último mes, ¿con qué frecuencia ha podido controlar la forma de pasar el tiempo?	0	1	2	3	4
14. En el último mes, ¿con qué frecuencia ha sentido que las dificultades se acumulan tanto que no puede superarlas?	0	1	2	3	4