Intrapartum Pain Management in Hispanic Women

Juliane Milburn

Palmyra, Virginia

MSN, Vanderbilt University, 1996

ADN, El Camino College, 1993

A Dissertation Presented to the Graduate Faculty of the

University of Virginia in Candidacy for the Degree of

Doctor of Philosophy

Department of Nursing

Graduate School of Arts and Sciences

University of Virginia

May 2014

Table of Contents

List of Tables & Figures

Abstract

Background and purpose. Current literature on labor pain management highlights a disparity in pain control administration with regard to minority groups, including Hispanics, as compared with Caucasian women, with particular attention on epidural anesthesia (Atherton, Feeg, & El-Adham, 2004). However, cultural practices have an enormous influence on the health behaviors of the Hispanic community, prompting the question of whether this difference is a disparity or a woman's choice. The purpose of this study was to understand Hispanic women's use or non-use of pain medication or anesthesia during labor and to shed light on health disparities identified in the literature.

Methods. A mixed methods approach was used to reinforce the strengths as well as address the weaknesses within the respective methods used. A secondary data analysis was conducted with six years of data on inpatient intrapartum admissions from the Clinical Data Repository (CDR) at the University of Virginia (UVa) Health System. Individual interviews with a convenience sample of Hispanic women, less than 2 years postpartum, from a prenatal education class in Winchester, VA were conducted, to provide context to the secondary data analysis.

Findings. Findings from the quantitative analysis show a significant difference in the use of childbirth pain management methods based on race, age, and insurance provider. Hispanic women were 53% less likely than all other races to use regional analgesia (epidural), and 41% less likely to use a combination of epidural and intravenous (IV) medication during labor. In addition, women under 30 years of age, for all races, were more likely to use epidurals or a combination of epidurals and IV medications than no pharmacologic method, while women who were self-pay were less likely to use these methods. Findings from the qualitative analysis revealed four main themes: 1) pain: a childbirth rite of passage; 2) bravery shapes personal agency; 3) cultural mystery; and 4) communicating quality care.

Discussion. The findings from the quantitative phase of this study are supported by the results from the qualitative interviews with Hispanic women. The interview participants spoke of the desire for an ideal birth experience with little medical intervention, and all spoke of a fear that epidural anesthesia would cause permanent back pain or problems. The qualitative findings shed light on possible reasons why Hispanic women used epidurals less often than other races. Additional findings were that the women spoke of misconceptions about the safety and efficacy of

pharmacologic pain control methods, as well as communication barriers between themselves and health care providers.

Conclusions. The racial differences in epidural use during childbirth does not appear to be a health disparity, but a choice made by Hispanic women. Overall findings from this study demonstrate a need for the use of shared decision-making strategies for childbirth pain management in the intrapartum setting, and development of a decision-making tool that can be used in this setting

Chapter 1: Introduction

Scope of Problem

Childbirth is an area of research that receives considerable attention in the literature; however, only certain aspects of the perinatal period (prenatal, intrapartum, and postpartum) have been highlighted. Most maternal health research is focused on the prenatal and the postpartum periods, including infant outcomes, with limited consideration given to the actual childbirth process, known as the intrapartum period (defined as the period of labor and birth) (Handler, Kennelly, Peacock, & SpringerLink, 2011). This is true of provider-focused studies as well as large national database studies that focus on vital statistic reporting (Handler et al., 2011). While these research areas are critically important, given that the leading cause for hospitalization in the United States is to give birth, there is a need for further study of this key phase in the perinatal period (Handler et al., 2011). The intrapartum period can produce considerable stress for the laboring mother, causing a rise in catecholamine levels. An increase in these levels can affect the long term outcomes of infant health and behavior that can, in turn, impact future health care resources (Handler et al., 2011; Ruiz & Avant, 2005).

Considering the emerging evidence of long term health consequences related to the birth process, more attention needs to be allocated to research of the intrapartum experience. While outcomes can be enhanced for all women, vulnerable groups, such as ethnic and racial minorities and immigrant populations, need particular attention. The experience of childbirth in an unfamiliar health care environment can exacerbate stress associated with the event, further affecting the outcome for both mother and infant. For nurses, the ability to understand the cultural beliefs and practices of ethnic and racial minorities, and/or immigrant women regarding the birth process would help to improve the overall health of the mother and her family. It also can assist in alleviating the stress of unfamiliarity during a critical time in a woman's life. While the United States is the home to many different ethnic and racial groups, the burgeoning growth of the Hispanic population in particular warrants closer study.

Hispanic Population in the United States

Data from the 2010 U.S. Census shows the Hispanic population at 50.5 million or 16% of the total population, a 43% increase since the 2000 census (Humes, Jones, & & Ramirez, 2011). The Hispanic population currently constitutes the largest minority group in the U.S., surpassing African Americans, which constitute 13% of the population (38.9 million) (Humes et al., 2011). When examining regions of the U.S., the largest increases in the Hispanic population from 2000 to 2010 were in the Midwest (49.2% increase), and in the South (57.3% increase), despite the fact that the largest total Hispanic concentration remains in the western region of the country (Ennis, Rios-Vargas, & Albert, 2012). In the state of Virginia, the Hispanic population leapt from 4.7% in the 2000 census to 7.9% in the 2010 census, representing an increase of 91.7% (Ennis et al., 2012).

Importance of Research that Focuses on Hispanic Culture

Sensitivity to practices of various cultures is essential in the health care arena as the U.S. continues to become more diverse, particularly with regard to the dramatic increases in the Hispanic population. The cultural needs of this large portion of the population need to be understood by health care providers, as many of the health beliefs of this population revolve around traditional cultural practices. While obstetric and family care is just one piece of the health care puzzle, it represents a crucial entry point for immigrant families. For many, the first encounter with the U.S. health care system is often for intrapartum care (Berk, Schur, Chavez, & Frankel, 2000). This period poses an opportune time to have an impact on the health practices of the Hispanic population, not only for delivering a healthy infant, but also for the future medical care of the family as well.

One of the most prominent areas of the birthing experience where nursing could improve in the provision of culturally sensitive care is pain management. Current literature on labor pain management notes a disparity in pain control administration with regard to minority groups, including Hispanics, as compared with Caucasian women, with particular attention on epidural anesthesia (Atherton et al., 2004). However, cultural practices have an enormous influence on Hispanic women's health behaviors, prompting the question of whether the difference in rates of epidural use is truly a disparity or a woman's choice. By understanding and respecting their cultural practices with regard to pain management during childbirth, advances can be made in bridging the gap between two very different views of childbirth practices. Shared

decision making around childbirth could lead to increasing trust in the U.S. health care system, thereby improving the long term health and quality of life for this community. With Hispanics now the largest minority group in the U.S., attention to their culture and health care needs is needed to prevent further disparities.

Specific Aims

Cultural practices have an enormous influence on the health behaviors of the Hispanic population and the lack of evidence-based methods for integrating those practices into the current health care environment can hinder the ability of health care providers to treat this population adequately and facilitate positive outcomes. One area of health care in which cultural differences are particularly apparent is in childbearing and childrearing. A family's response to this stage of life is deeply rooted in cultural beliefs and practices (Carlton, Callister, & Stoneman, 2005). A woman's experience during the childbirth hospitalization can shape future health care practices for the entire family. A significant facet of that experience is pain control, making the nurse's understanding of birthing practices and pain management for this population crucial. Without this cultural knowledge and sensitivity, there can be a large gap between a woman's expectation of her labor experience and the perception of actual events, resulting in a feeling of loss of control. This loss of control has been shown as one of the most important factors in a satisfactory labor experience (Schroeder, 1985). Feelings of helplessness and loss of control can lead to a stressful labor experience, starting a cascade of negative events. Stress from prenatal and intrapartum events can have long-term effects on the newborn's health and behavior, and also impact the use of health care resources in the future (Ruiz & Avant, 2005).

The challenges in assessment and care for clients from various cultures often include practices that are unfamiliar to U.S. nurses, and are further complicated by language barriers. Cultural norms characterize how a woman perceives and expresses her pain during the labor process, which in turn affects her care during the intrapartum period (Callister, Khalaf, Semenic, Kartchner, & Vehvilainen-Julkunen, 2003). The literature describes the lower rate of epidural usage by Hispanic women as a health disparity (Ardren, 2008; Glance et al., 2007; Rust et al., 2004). Is this truly a disparity or a personal choice for these women based on cultural beliefs? Or is the true disparity the lack of cultural understanding by U.S. health care providers, the inability for Hispanic women to communicate their desires secondary to language and cultural differences, and/or the propensity of health care providers to assert their own values, thereby possibly undermining the client's wishes?

The major objectives of this study include identifying the usage of pain management methods by Hispanic women compared to other ethnic groups over the past ten years at the University of Virginia to have an understanding of what happens in at least one large teaching hospital. Phase One of the study involved the examination of intrapartum pain management used by Hispanic women over a ten year period and comparisons of their use of pain medications and anesthesia to other ethnic groups during the same time period. Phase Two entailed qualitatively examining the prominent beliefs and birthing practices of a small group of Hispanic women to provide context to the secondary data analyzed in Phase One. The long term goals of this study are to enhance the knowledge of health care providers related to cultural norms and values held by Hispanic women, and to use that knowledge within the obstetric setting to improve the childbirth experience for these women and their families. This study is the basis for further research to develop culturally sensitive educational interventions for pain management that can be used by obstetric nurses and providers caring for this population. This ideally would facilitate more effective health promotion education for these clients and families by fostering a trusting nurse client relationship, in turn improving health outcomes in this vulnerable population.

The *specific aims* of this study were as follows:

1) Using secondary data analysis, describe pain medication and/or anesthesia usage during the intrapartum period by Hispanic women over the last 10 years at the University of Virginia (UVa) Health System compared to other ethnicities during the same time period.

2) Determine the influence of ethnicity in predicting pain management categories, after controlling for demographics.

3) Qualitatively examine a group of Hispanic women's beliefs and perceptions regarding pain management choices for labor and birth, taking into consideration acculturation to the U.S. to provide context for the quantitative data.

Research Questions

The goal of this research was to understand Hispanic women's use or non-use of pain medication and/or anesthesia during labor and to shed light on what the literature terms a health disparity. The following research questions addressed this goal:

1. What is the prevalence of pain medication and/or epidural use among laboring women admitted to UVA over the last ten years and how does that differ between racial groups?
2. Are there any differences in pain medication and/or epidural use depending on payment method for all groups and for Hispanic women?
3. What are the predominant beliefs and perceptions of Hispanic women in the area regarding pain management, the U.S. health care system, and their options for labor and delivery management?

Importance for Nursing Care

One of the most important relationships for a laboring woman in the hospital setting is the one she develops with her primary obstetric nurse. The need for nursing to be aware of and sensitive to various cultural behaviors is extremely important, as childbirth preferences are deeply rooted in cultural values. From interpreting non-verbal signals from women regarding pain or other aspects of assessment, to identifying preferences throughout the labor and delivery process, nursing plays a significant role in cultural interpretation, as well as pain management. While the nursing community itself is often as multicultural as the patients for whom care is provided, the structure of nursing care is still rooted in a homogenous approach to client care, and the overwhelming majority of nurses practicing in this country have been educated in the U.S. (Kim & Kollak, 2006). There have been movements to remedy this homogenous approach over the years, most notably the concept of transcultural nursing, pioneered by Madeleine Leininger in the 1950s (Andrews & Boyle, 2008).

The transcultural nursing paradigm involves the integration of anthropology and nursing concepts to bridge "cultural boundaries in a search for the essence of nursing" (Andrews & Boyle, 2008, p.4). This standard envisions development of nursing plans of care addressing an individual's needs in a way that is specific to his/her culture as well as being applicable to human behaviors universally (Kim & Kollak, 2006). The goal of the transcultural nursing movement is to form a knowledge base that addresses culture-specific practices (those seen as distinctive to one cultural group) as well as universal

cultural care that encompasses the values, beliefs, and practices common amongst all groups (Andrews & Boyle, 2008). While Leininger's objective was to have her theories move forward as a separate area of study in nursing, transcultural concepts are still being taught as an adjunct to traditional nursing study (Andrews & Boyle, 2008).

In the United States today, the variety of cultural backgrounds continues to expand, translating to a constantly changing environment in the health care setting. Part of the art and science of nursing is to adapt the nursing process to the individual characteristics of clients, and cultural needs are increasingly becoming part of the necessary assessment measures to administer competent care. There is a need for nurses to be more informed about cultural differences and preferences in a variety of health care settings, including obstetric care, where cultural heritage plays a large role in women's birth plan decisions and perception of their experience.

Specific cultural beliefs and practices have a great influence on a community's choices regarding wellness and treatment of illness, making it essential for nursing and other health care professionals to be aware of these influences which affect quality of life (Leininger, 2007). Culturally competent care not only improves the focus on wellness and disease prevention, but is also noted to decrease stress and improve quality of life, and could have a positive effect on recovery time as well as reducing health complications (Leininger, 2007). With increasing evidence showing possible negative effects on newborns resulting from maternal stress (Ruiz, 2005), interventions and interactions with health care providers that are culturally sensitive and reduce stress during the intrapartum period can impact not only the mother and family, but the child's long term health as well.

Chapter 2: Background

Childbirth Factors

Hospital Births

The structure of childbirth care in the United States has gone through some significant changes over time, influencing the experience for mothers and families going through this process. The move from women giving birth at home with support from other women, to delivering in a hospital under medical supervision has prompted many of the changes with regard to the labor experience (Hodnett, Gates, Hofmeyr, Sakala, & Weston, 2012). According to national vital statistics on birth rates in 2011, 98.7% of all births in the U.S. were in hospitals while only 1.3% occurred at home or other locations such as birthing centers (Martin et al., 2013). Of these hospital births, 91.9% were attended by physicians and 7.7% by midwives, highlighting the trend toward the medical model of childbirth (Martin et al., 2013). When looking at the Hispanic population in the same year, 99.6% gave birth in a hospital setting and of those, 91.5% utilized physician services and 8.1% used a midwife as the primary health care provider (Martin et al., 2013). As seen in another study, 64% of the U.S. hospital deliveries in 1999 occurred in facilities with over 1500 births per year, where birthing is a specialty within the tertiary care context, and most of these were also teaching hospitals (Marmor & Krol, 2002). This overall change in the environment of where childbirth occurs has profound effects on women's satisfaction with their experience, control over their bodies, interventions and outcomes, as well as choices for pain management.

Placing childbirth priorities within the medical standard of care changes the focus of the delivery process for women. Many physicians are trained in a model based on pathology, rather than birth being a normal process, and while every doctor has his/her own method, the basis of the focus remains similar. In the U.S., competence in obstetrics for physician residency programs include medical and surgical complications of obstetrics, genetics, operative vaginal deliveries, breech and multi-fetal deliveries, operative deliveries, and general aspects of anesthesia, along with complications (Marmor & Krol, 2002). There are no parameters for competency addressing pain control, be it pharmacological or non-pharmacological, in any of the review criteria. This leads to a very different philosophical structure for interventions and labor pain management than perhaps the women themselves anticipate when they enter the health care system (Marmor & Krol, 2002).

In addition, hospitals are obligated to adjust staffing numbers and skill sets based on patient acuity and needs. If there are more women needing care for epidurals or other interventions related to labor, this creates a very different staffing requirement than a situation in which women are planning un-medicated births or births with little intervention, leaving limited staff skilled in the care of these clients (Marmor & Krol, 2002). Hospitals with a teaching focus also may have a very different approach to interventions and pain management choices than community or private hospitals. If the residency focus is pathology, as described above, and the hospital is focused on the education of residents, the options for pain control during labor may be presented very differently at these hospitals. Because it is clear that the vast majority of women choose physicians as their obstetric care providers, the way in which these physicians frame and manage the options for childbirth pain control should be explored in more detail, along with a woman's perception of her choices in this matter.

Labor Pain

Pain during labor and delivery, as well as the management of it, is a unique phenomenon that differs greatly from other pain experiences found in various health care settings. Childbirth pain is not part of a disease process, but integral to the process of birth, resulting in a very different philosophy of management compared to pathologic processes (Lowe, 2002). Yet the pain policies seen in many tertiary facilities address pain in a general sense, and do not have specific goals or guidelines for obstetric pain management. There are many interpretations of the definition of pain, most encompassing both mechanical processes such as tissue damage, as well as emotional aspects including social, cultural, and cognitive factors unique to each individual, which influence their interpretation and expression of pain (Lowe, 2002). One of the most unique features of childbirth pain is that it is one of the few situations in health care where acute pain may be left untreated as part of care management, and for some women, the ability to make that choice is more important than medical interventions. This aspect of childbirth is acknowledged by the American College of Obstetricians and Gynecologists in a joint committee opinion statement with the American Society of Anesthesiologists in 2004 which reads:

> Labor causes severe pain for many women. There is no other circumstance where it is considered acceptable for an individual to experience untreated severe pain, amenable to safe intervention, while under a physician's care. In the absence of a medical contraindication, maternal request is a

> sufficient medical indication for pain relief during labor. Pain management should be provided whenever medically indicated (p. 1).

Many options are available for pain management during labor, and it is the woman's choice which method she will use. Pain management tools are often divided into pharmacologic and non-pharmacologic approaches. For pharmacologic labor pain relief the options involve either parenteral opioids or the placement of a labor epidural for analgesia (Roberts, 2010). In the non-pharmacologic category, there are a number of different pain management strategies including one-on-one support, hydrotherapy, intradermal water injections, movement, massage/counter pressure, breathing techniques, music, heat/cold therapies, and aromatherapy (Roberts, 2010). None of these methods are mutually exclusive throughout the process of labor and childbirth. Women may use only one of these methods, but more often it is a combination of more than one, be it pharmacologic, non-pharmacologic, or both. Again, the unique feature of pain management during childbirth is that the decision of which method to use is guided by the woman and the significance labor pain and its management have in her life.

The meaning of pain during childbirth can be very different for women and health care providers. While often the goal of care providers in the obstetric setting is to relieve pain, it may not be the shared goal of the women giving birth. Studies have demonstrated that factors such as culture, having an active role in decision making, the quality of nursing support, and the meeting of the woman's expectations for pain management were more predictive of satisfaction with the childbirth experience than being pain free during labor (Hodnett, 2002). Pain "relief" during childbirth has been found to be more correlated with how women feel they coped with the pain, and feelings of fulfillment with the process, as opposed to numbers on a pain rating scale (McCrea & Wright, 1999). Coping as a measure of a woman's emotions, actions, and ability to adapt to changing circumstances, as well as self confidence in her ability to do so, forms the cornerstone of satisfaction with labor pain management (Lowe, 2002; Roberts, Gulliver, Fisher, & Cloyes, 2010). Given that contentment with the childbirth experience is dependent heavily on coping and meeting expectations, the ability of the nurse and obstetric provider to assess and to address those needs becomes a crucial part of care management in the labor and delivery setting. Yet, this component is often overlooked, especially when there are cultural differences, and the expectations of the care providers are focused upon, rather than those of the woman giving birth.

Perception and tolerance of labor pain, as well as pain associated with other stimuli, are influenced by a number of factors. Family and cultural patterns of pain response, emotional input, gender, age, and spiritual factors all have an influence on how pain is recognized and dealt with by people (Andrews & Boyle, 2008). Expectations about childbirth pain, reactions and expressions of pain, as well as pain management choices, are all deeply rooted in cultural behaviors. Some women may embrace pain with childbirth, feeling it is a necessary part of the process, while others will have an opposite reaction to the same stimuli, making this a very personalized experience (Andrews & Boyle, 2008). While the task of nursing assessment seems daunting when thinking about the various reactions women may have to childbirth pain and how to interpret these, often it is the nurse client relationship that is the key. Establishing trust along with recognizing the cultural influences on this process is highly effective in fostering communication between the nurse and laboring mother, facilitating a more culturally congruent environment for childbirth.

Current Literature on Labor Pain Management

The trends in pain management for childbirth have changed dramatically in recent years, similar to the changes in birthing facilities and the move toward the medical model of the birth process as mentioned earlier. There is an increasing move toward medication and epidural use during labor, as well as acceptance of medical interventions. The philosophy of what constitutes labor pain management has changed as a result of these shifts, where epidurals are seen by physicians as the ideal intervention, and if women aren't getting them, there is something amiss. One article in the *Journal of Clinical Medicine Research* exemplifies this shift in attitudes by the medical community. This research journal is marketed to physicians and other health care providers, and the opening sentence in a research article about risks of epidural use reads as follows: "Intrapartum pain relief is commonly administered as a central nerve block involving injection of an analgesic into the lumbar region of the lower back…Intrapartum epidural use is associated with a more comfortable labor and a better overall labor experience" (Lancaster, 2012, p. 119). While the word "commonly" is used, the tone of this and the statements that follow suggest to this reader that there is no other method to deal with childbirth pain. The impressions given by much of the wording in the article demonstrates the messages put forth in the literature about childbirth pain and how to address it. This paradigm shift raises the question of whether the recent increase in epidural use is a result of the efficacy of the intervention, or a product of how pain control options are presented by the provider.

Prior to the 1990s, epidural use was not as popular as it is currently in the obstetric setting, as women often chose forms of labor pain management such as intravenous medication and non-pharmacologic methods (Handler et al., 2011). In addition, interventions such as labor induction and electronic fetal monitoring (EFM) are becoming increasingly popular, with one in three labors in the U.S. utilizing medical induction and almost all being monitored by EFM (Handler et al., 2011). The data on epidural use are quite variable in the literature, but clearly indicate the use of epidural analgesia as a dominant trend in obstetric care. Epidural use since the year 2000 to present is reported as being as low as 47% to as high as 76% of all births, both vaginal and Cesarean section (Declercq, Sakala, Corry, & Applebaum, 2006; Handler et al., 2011; Lancaster, 2012; Osterman, 2009; Sheiner et al., 2000).

Another method that gets considerably less attention is the use of narcotic analgesics during labor. It is estimated that as much as 39-56% of women utilize narcotic analgesics for labor pain management, yet there is a shockingly small amount of information and research dedicated to examining the effectiveness and safety profile involved with the use of these medications during childbirth (Leeman, 2003). Women will often use narcotic analgesics as the sole method of pain control, or in conjunction with an epidural, or non-pharmacologic methods (Leeman, 2003). As for non-pharmacologic methods, there is very little data on use, as this is often not quantified in the medical record. Much of the literature puts this in the category of using "nothing" for pain management during childbirth, which is about 14% of laboring women (Declercq et al., 2006; Marmor & Krol, 2002). Nonetheless, epidural analgesia is still viewed by the medical community, both obstetricians and anesthesiologists, as the preferred and best method of labor pain management, even taking into account risks associated with this approach (Atherton et al., 2004; Glance et al., 2007; Lancaster, 2012).

Medical interventions such as labor induction, EFM, and epidurals are becoming part of the norm in the inpatient childbirth environment. There is a positive correlation noted in the literature between medical induction of labor and use of epidural analgesia in the U.S., with a variety of explanations as to the reason. The literature cites that women who are experiencing labor induction may choose epidurals more often due to the women possibly being more comfortable with medical interventions, having more pain associated with the labor induction, as well as experiencing labor complications as a result of epidural anesthesia necessitating induction or augmentation of labor (Lancaster, 2012). In addition, these interventions are associated with risks to the labor

process and both mother and infant. Studies show that epidural anesthesia can increase the length of labor, especially the second stage, as well as having an impact on fetal malposition, maternal puerperal fever incidence, infant Apgar scores, and breastfeeding success (Leeman, 2003; Lieberman, 2004). Risks also are documented with regard to Cesarean sections, showing an increase in operative deliveries in both the U.S. and other countries, attributed to the prolonged second stage of labor and failure to progress as a complication of epidural use (Jonsson, Cnattingius, & Wikström, 2013; Leeman, 2003). Despite the risks noted in current research, epidural anesthesia is still seen by the medical community as the best option for labor pain management. Yet a woman's idea of a satisfactory birth experience is not solely reliant on the absence of pain.

While physicians consider relieving pain one of the most prominent characteristics of successful labor management, this is only one feature of a positive birthing experience for a woman. Personal agency, self-respect, control, caregiver support, and knowledge of available options all contribute to a woman's expectations of a positive birth experience, of which labor pain management is only one component (Marmor & Krol, 2002; Namey & Lyerly, 2010). Yet with most women giving birth in a hospital setting that values medical intervention, and where anesthesiologists are considered the experts on labor pain control, these aspects of a woman's experience are often not considered when presenting labor management options (Marmor & Krol, 2002). Studies using qualitative methodologies highlight women's priorities as autonomy, control, and the importance of a trusting partnership with the health care provider. These are seen as the keys to a positive childbirth experience, where decision making is a collaborative process (Miller & Shriver, 2012; Namey & Lyerly, 2010; Simkin et al., 2012). Women also cite cultural, social, environmental, and economic factors as influences in the pain management decision making process, yet much of this is brushed over in studies using quantitative methodologies when discussing rates of epidural use (Miller & Shriver, 2012). Because of the considerable authority obstetricians and anesthesiologists have when it comes to labor management decisions, taking into account the woman's priorities in this process would go a long way in fostering the collaborative decision making process and enhancing the culture of childbirth care in the U.S.

Cultural Influences on Childbirth and Healthcare

Definition of Culture

Culture, from the Latin word *cultura* (meaning to cultivate) has been defined "as a socially interactive process of construction comprising two main components: shared activity (cultural practices) and shared meaning (cultural interpretation)" (Greenfield, Keller, Fuligni, & Maynard, 2003, p.462). This concept has been prevalent in sociological and anthropological studies since the 18th century. A related concept to culture is community, which is seen as a grouping of individuals, with distinct motivations, that take responsibility for each other and for their interactions with one another (Biceaga, 2010).

Two prominent manifestations of cultural behavior seen in many societies are that of individualism and collectivism. Individualism as noted in humanist epistemology encompasses the value of personal agency, and a sense of controlling the environment. This type of society originates mainly from the Greek tradition of debate and personal freedom and is a basic tenet of Western cultures today (Nisbett, Peng, Choi, & Norenzayan, 2001). In contrast, collectivist societies do not differentiate between personal needs and those of the group or community. If there is a distinction made, the goals of the community are put before the individual's needs (Kashima et al., 1995). From the collectivist viewpoint, individuals are part of a connective web, and are ascribed certain roles and social obligations, which guide individual behavior. The collectivist cultural framework stems from ancient Asian culture, continuing to influence Eastern societies as well as Latin American and Native American cultures, instilling a sense of "collective agency" in its members (Nisbett et al., 2001). Adhering to collectivism is often seen as passive behavior and an unquestioning acceptance of cultural norms.

Culture can influence many aspects of a person's life, including an individual's beliefs and response to pain, verbal and non-verbal expression to pain stimuli, treatment preferences and coping behaviors, as well as interactions with care-givers (Davidhizar & Giger, 2004). For example, some cultures believe asking for assistance is disrespectful and taking the nurse away from more important tasks if pain medication is requested, whereas others feel the nurse will know when medication is needed because of his/her professional skills, and not request assistance for pain management (Davidhizar & Giger, 2004). In addition, the cultural background of the health care provider has an impact on pain management, influencing perceptions of the client's

response, the treatment options offered or encouraged, as well as recognition of cues the client may be expressing (Weber, 1996).

Many cultures believe that the pain associated with childbirth is a necessary part of the process, and overcoming this challenge is an empowering event that is fundamental to the experience (Callister et al., 2003). Some cultures of Central and South America relate the level of pain with feelings toward the newborn: "the more intense the pain, the stronger the love toward the infant" (Weber, 1996, p.69). With all of these factors influencing childbirth pain, it is essential for the nurse to consider the client's needs and responses in the context of their cultural background, as well as taking his/her own cultural biases and environmental influences into account.

Hispanic Cultural History

The term Hispanic refers to people whose heritage is a Latin American country with Spanish influence. This designation gained popularity in the U.S. after its use in the 1980 Census, was spurred on by marketing promotions that followed, and continues to be a broad label used to identify this community (Telles & Ortiz, 2008). However, the 1970 Census boasts the first appearance of a Hispanic designation within the questionnaires, and some form of that question has been present in census data ever since (Ennis et al., 2012). Latino or Latina is another broad term used to identify the same population, and is an expression used more often by this community as a self-reference (Borrero, 1992). Latin immigrants to the U.S. may identify themselves using these pan-ethnic labels, or distinguish themselves in relation to subgroups by their country of origin, such as Mexican-American (Telles & Ortiz, 2008). Despite this ethnic identification with their country of origin, the more comprehensive labels such as Hispanic and Latino/Latina continue to be used as a community designation both by members of this population as well as outsiders. For the purposes of this study, the term Hispanic was used to refer to this population, for consistency with the U.S. Census designation.

While the U.S. Census has included questions on Hispanic origin since 1970, it was not until 1997 that the U.S. Office of Management and Budget revised its standards for race and ethnicity data collection (Humes et al., 2011). Starting with the 2000 Census, the two are now separated, with ethnicity being designated as 'Hispanic' or 'non-Hispanic' as a separate category from race (Humes et al., 2011). Race is distinguished by physical characteristics and/or country of origin, whereas ethnicity is determined by one's identification with a particular group or community, regardless of

physical attributes (Caliendo & McIlwain, 2011). Often the terms "race" and "ethnicity" are used interchangeably. However, within one "race" of people that share common physical traits, there can be a wide variety of ethnic origins (Ezenwa, Ameringer, Ward, & Serlin, 2006). In addition, even within a group with a common ethnic identity, such as the Hispanic population, clear distinctions are made by this group's members based on country of origin. While there is a large "community" in the U.S. identifying itself as Hispanic, there is an enormous amount of diversity among those within this group, defying the technical definition of a community.

Groups of individuals that share some attribute such as race, ethnicity, geographic location, or even a common disease are referred to in everyday language as communities. Yet they do not exactly fall into the strict definition of a community, which is defined as a distinct group with a very clear social structure and clear leaders (Ross, 2010). The Hispanic population is a large, less cohesive, and geographically dispersed community in the U.S., as compared with communities such as sovereign Native American nations that are more explicitly defined. While the Hispanic "community" varies greatly from the technical definition of the word, there are still defining features that serve to create some sense of unity among those with Latin American heritage, and these attributes need to be considered when encountering this population in the health care setting.

Those of Hispanic origin are often greatly influenced by historical constructs within their cultural heritage. For example, cultural practices of those with Mexican and Central American origins are still shaped by ancient teachings from the indigenous tribes of these countries, even as far back as before the Spanish conquest of the 1500s. This is especially true of customs surrounding childbirth, and much of what is taught today to women in this culture stems from rituals and beliefs of the Aztec and Mayan tribes during the Mesoamerican period (defined as 10,000 BCE to 1521 CE in Mexico and Central America) (Coe & Koontz, 2002). Many of the herbal remedies used today are similar, as well as the teachings, such as the belief that labor and childbirth are a battle to be overcome by the woman, and the pain of that battle is an integral part of the process as well as something that is better for infant outcomes (Green, 2006). An in-depth study of the ancient childbirth practices of Mexico and Central America during the Mesoamerican period is included in Appendix B. This historical examination is representative of only one group, and there are many different cultures that influence the Hispanic population in the U.S. today. However, there are some key features

common among the majority of those identifying with Hispanic cultural heritage that warrant consideration by health care providers.

The key influences affecting health care decisions in this population identified in the literature include the following: core Hispanic values; collectivism (defined as valuing community needs before individual needs); cultural customs and responses to the labor process; knowledge of options and access to care and services; and nursing assessment/provider preference in delivery of care (Borrero, 1992; Sanchez-Birkhead, Kennedy, Callister, & Miyamoto, 2010). While not every subgroup that designates itself as Hispanic will adhere to all of the following concepts, being aware of these general constructs enlightens aspects of the Hispanic culture as a whole and the derivation of specific cultural practices.

Core Hispanic Values. Although there are many differences among Hispanic immigrants dependent upon their country of origin, there are core values that have been identified as common among Latin Americans. These core attributes, that are present in some form within most Hispanic communities, are the use of the Spanish language, adherence to the values of Catholicism, and allocentrism, which refers to the collectivist nature of this society (Borrero, 1992). The significance of language when caring for Latinos within the U.S. healthcare system is the barrier to communication. Even if nurses are bilingual, communication may not be optimal if s/he is from a different cultural background. In the landmark program *De Madres a Madres*, an initiative in Houston, Texas, where lay health promoters were trained as mentors to pregnant Latino immigrants, it was discovered that even within the Hispanic community, the women segregated themselves according to their country of origin (Mahon, McFarlane, & Golden, 1991). To ensure effectiveness of the program, the facilitators needed to be of the same country of origin as the women in the community they were trying to help (Mahon et al., 1991). This emphasizes the importance of insider status when dealing with certain communities, as well as highlighting the challenges facing nurses in the U.S. when caring for these women.

The importance of the Catholic religion to Hispanic culture is very prominent when dealing with health care issues and childbirth. Many Latino women describe childbirth as a highly spiritual experience bringing them closer to God (Callister & Khalaf, 2010). They describe giving over control to God and the health care team, as God will take care of ensuring a successful birth

(Callister & Khalaf, 2010). Hispanic women often view the role of motherhood and the responsibility of childbearing as equal to the role of the Virgin Mary--a role of sacrificing and denying one's own needs for that of the child (Borrero, 1992).

Collectivism vs. Individualism. In line with the self-sacrificing role, is the philosophy of collectivism as opposed to individualism. The collectivist cultural framework stems from ancient Asian culture, continuing to influence Eastern societies as well as Latin American and Native American cultures. Within this construct, individuals are part of a connective web, and are ascribed certain roles and social obligations, which guide individual behavior (Nisbett et al., 2001). The individualistic basis of Western culture places the emphasis on individual achievements, whereas the focus of collectivist or allocentric societies is the family and community. Thus, the emphasis for women is to sacrifice their own needs for that of the family, or in the case of childbearing, for the needs of the infant.

The relationships that are shared among family and the roles that are designated to each member hold a significant value in the Hispanic community, providing purpose and worth for the individual. Events are evaluated by looking at how the group is affected, not just the individual (Chong, 2002), which influences decisions regarding healthcare as well as childbirth. Often, a high value is placed on conceiving and the maternal role; however, it also is seen as a method of oppression in some instances (Fernandes-Paul, 2008). Little importance is given to the mother's experience during childbirth; the focus is on the outcome. Even though the focus is on the good of the community, the Hispanic culture is still highly patriarchal. What has been found, though, is that Hispanic women use the collective nature of their culture to gain power. By supporting each other, they still make collective decisions that benefit all, while empowering each individual within the group through unification (McFarlane, Kelly, Rodriguez, & Fehir, 1994). This behavior melds the values of the collectivist society with the need for women to be empowered to better their situation.

Customs and experiences. Within the Hispanic culture, women often relate that their most fulfilling event in life is that of giving birth and becoming a mother (Callister, Corbett, Reed, Tomao, & Thornton, 2010). The experiences related by Latino women about childbirth and motherhood are outcome driven.

One prominent finding about childbirth in qualitative studies is "enduring birth to obtain the gift" (Callister et al., 2010, p.150) and silence is considered a strength. Hispanic women are often taught that they should not cry out during labor, nor should they have negative thoughts during the pregnancy, as this will harm their baby. Passivism and silence are often valued as part of the identification with the Virgin Mary, and experiencing the pain of labor is valued within this culture (Callister et al., 2010). Some Hispanic cultures believe that the offer of an epidural means there is a complication, and that they are destined for a Cesarean section (Callister et al., 2010).

The literature refers to Hispanic women's view of pregnancy and childbirth as a state of wellness rather than illness, which can account for many of the beliefs related here about pain management measures (McFarlane et al., 1994). In addition, many believe it is better not to express pain during labor verbally, leading to misinterpretation of pain management needs by health care personnel (Darby, 2007). Hispanic women also practice many customs that may be unfamiliar to U.S. nurses, some of these stemming from ancient Central and South American indigenous practices. Things such as adherence to hot and cold theories for foods and medicines, specific rituals surrounding birth and the postpartum period, as well as rules and superstitions regarding behaviors during pregnancy are often still practiced by Hispanic immigrants to the U.S. today (Darby, 2007). Because these often differ from mainstream U.S. customs, assessment and care of the laboring Hispanic immigrant presents challenges for obstetric nurses, especially when paired with a language barrier.

Disparities in Care

Disparities in the delivery of health care have been described in the literature to be pervasive in a variety of settings and circumstances, from primary care to acute care, and among various treatment modalities. Disparities are often defined as inequities in treatment between various groups (Meghani et al., 2012). Yet when examining the differences in care between racial and ethnic groups, there is a lack of differentiation among the goals of care in the different clinical settings. Study results and future health care agendas tend to be applied universally, when there needs to be a distinction with regards to clinical situations, particularly when referring to obstetric care. One stark example of this is seen with pain management policy and practice, where the goals of pain management (elimination of pain) in the care of acute and chronic diseases are

automatically applied to obstetric pain management, even though there are vast differences in the circumstances surrounding these scenarios.

Since the year 2000, there has been an increased emphasis on pain control in the U.S., with various pain management initiatives being passed by Congress, placing pain in the forefront of public health strategic plans (Meghani et al., 2012). In addition, the same year saw the passage of the Minority Health and Health Disparities Research and Education Act that established the National Center on Minority Health and Health Disparities (NCMHD) at the NIH with the mission of expanding research and grants to address minority health disparities, as well as developing a tactical plan for addressing these issues (Meghani et al., 2012). In the years following, research on treatment of acute and chronic pain has addressed racial and ethnic differences in care delivery, as well as the reasoning behind these differences. In the majority of studies involving an examination of pain management, the evidence has shown a difference in assessment and treatment of pain among minority groups, independent of other demographic factors (Meghani et al., 2012). Studies have shown repeatedly that Caucasian patients receive more accurate assessment of their pain and treatment needs, as well as access to more analgesic treatment for their pain (Ezenwa et al., 2006). With legislative action putting this topic on the national agenda, there is increased pressure for health care providers to respond to disparities in providing treatments to reduce pain. While the need for more adequate pain assessment and treatment is clear, applying this agenda to all situations, such as the obstetric setting, can result in misguided efforts on the part of the health care team.

As discussed earlier, the pain experienced in childbirth is highly culturally influenced, and is seen by women as a completely different phenomenon than pain associated with illness, injury, or surgery. Consequently, applying strategies developed from research on other pain situations is not appropriate in this setting. In addition, another focus in health care is that of utilizing evidenced based medicine (EBM) to set the standard for health care treatment. In the situation of childbirth pain management, this emphasis muddies the waters when it comes to promotion of epidural use during labor by anesthesiologists. Research in anesthesia literature highlights the evidence that epidurals are considered the most effective method of pain control during labor and considers receiving an epidural as the goal of quality care in obstetrics (Atherton et al., 2004; Glance et al., 2007; Rust et al., 2004). There also are indications in research that there is a wide gap between EBM and actual practice, stressing the need for health care providers to employ EBM in their practice (Handler et al., 2011).

As a result, the focus on resolving disparities in obstetric care is centered on epidural anesthesia, with a view that if women are not using it, then providers are not employing EBM, which then prompts a greater push toward epidural use. Yet, for laboring women, the goal is not always to get rid of childbirth pain entirely. The birth plans of many women do not include epidural usage, but other methods of pain management, such as intravenous medication or non-pharmacologic pain control techniques. The decision of how to manage labor pain is based on more than just a pain rating, and providers need to take into account personal and cultural desires and not simply advocate their own agendas. In the case of Hispanic women, this is particularly evident, as the literature identifies a significant difference in epidural utilization with this population, yet these women often do not have the same goals for childbirth pain control as the health care providers (Osterman, 2009).

Quantitative Literature

Current literature on birthing pain management, which focuses primarily on the use of epidural anesthesia, cites disparities in pain control administration among minority groups, including Hispanics (Atherton et al., 2004). Yet, these studies look solely at epidural anesthesia use, many are focused in regions of the U.S. with a limited minority population, and are retrospective quantitative analysis only, which leaves the studies unable to determine reasons for epidural use or non-use. Some studies involving larger Hispanic populations showed a similar trend of a lower rate of epidural anesthesia use by Hispanic women, as well as a correlation between higher education levels and increased epidural requests (Harkins, 2010; Orejuela, 2012; Sheiner et al., 2000). In response to some of this research, researchers note that there are still gaps in our knowledge of patient factors for epidural use, such as cultural and family beliefs, preferences, and other influences (Green, 2007). In addition, no studies were found that address the prevalence of other pharmacologic (non-epidural) methods of pain control, such as narcotic analgesics.

With most of the literature on disparities in labor pain management focusing on epidural use only, the knowledge in this area is skewed when referring to this as a health disparity for minorities. There are many ways of dealing with childbirth pain, and while epidural anesthesia is one of those methods, it cannot be the only measure of whether or not women are satisfied with pain management during labor. Examining only epidural use leaves the knowledge base in this area in a very one dimensional realm. In addition, much of the secondary data analysis that has been done in this area has been on populations with a very small number of minority patients, as well as

having no method of determining reasons for use or non-use of epidural anesthesia, and no information on narcotic analgesia (Glance et al., 2007; Greenberg et al., 2006). In 2003, it was noted that up to 56% of women in the U.S. use some form of narcotic analgesia during labor, yet there are virtually no studies examining the use of these drugs and the choices women are making surrounding their use (Leeman, 2003).

Qualitative Literature

Qualitative literature regarding the Hispanic population and pain management emphasizes the cultural influences on pain perception. Values noted prominently in the Hispanic community such as suffering through pain, fatalism, and religion are described as influencing pain response as well as pain management decisions made by this group (Calvillo & Flaskerud, 1991). Interviews with Hispanic women regarding labor pain management confirm this focus on suffering through childbirth pain, and that silence and endurance are considered a sign of strength in a laboring woman (Callister et al., 2010). Yet the question remains as to whether the lower rate of epidural administration in the Hispanic community is truly a health disparity, or a personal choice made by these women based on their cultural beliefs. Are Hispanic women finding pain relief with analgesics or other non-pharmacologic methods? By considering non-epidural use a health disparity, will the health care community increase efforts to impose epidural administration on Hispanic laboring women contrary to their cultural values, further decreasing their sense of control and autonomy, with possible negative effects on the birthing experience?

While the qualitative literature is rich in cultural information on childbirth beliefs of enduring pain during childbirth as strength in the Hispanic culture, it is not correlated with the quantitative data on current practices within the U.S. health care system. The opportunity exists to examine the epidural rates in a large teaching hospital, and to interview Hispanic women living in the area about their perceptions of pain management during childbirth to get a better understanding of this phenomenon. This type of investigation can shed light on whether the true disparity is in not respecting the cultural preferences of Hispanic women, as opposed to assuming the disparities can be attributed to a fewer Hispanic women utilizing epidural pain control.

Cultural Barriers

While many Hispanic women in the U.S. may adhere to the cultural influences previously discussed, there will be varying degrees of observance of these traditions. Depending on the level of acculturation, country of origin, and desire to observe established customs, there will be a variety of influences on these women. For example, outsiders may consider someone part of the Hispanic community because of their designation in the medical record, yet the person may not feel any identity with this group depending on her situation (Ross, 2010).

This stereotyping is one issue considered not only with regard to recruitment in this dissertation study, but also to be taken into account with regard to dissemination of the findings. When conducting research and disseminating findings about specific groups of people such as ethnic groups, anyone who identifies with that community may be lumped in with the study population, and ascribed the attributes found in the study (Francis, 2010). Often the goal of the researcher is to inform about the norms of the particular community in question, yet there is a risk of the public's view of that group narrowing even more, categorizing certain ethnic groups, which adds to cultural stereotyping (Osland, 2000). Given this risk, careful consideration needs to be given toward avoidance of stereotyping when writing and publishing results; however, the perception of the findings by the public is still an unknown variable.

Some ethical concerns for recruitment in this study, as well as any studies involving an immigrant population, are related to immigration status. If some of the women are undocumented, they may not want to participate for fear of deportation or misunderstanding of what the study is about (Shedlin, 2011). It has been shown that avoiding words that had legal connotations (like "investigation") for study descriptions, along with utilization of trusted individuals improved participation levels for research involving Hispanic communities (Grady, 2006; Shedlin, 2011). In addition, it also has been demonstrated that face-to-face enrollment yielded almost double the participation with Hispanic female populations (Gilliss, 2001),

When doing research with vulnerable populations such as minority groups, care needs to be taken to avoid exploitation of these groups. In research, a vulnerable group is one that has limited ability to protect its own interests to provide informed consent (Grady, 2006). Persons with limited options for health care access and insurance fall into this category, as they may participate in research simply to get basic health care services (Grady, 2006). In addition, research with the Hispanic population has shown

that the use of interpreters makes communication less personal, which inhibits building a rapport and trust when conducting qualitative interviews, and that study participants prefer a researcher of the same ethnic background (Grady, 2006; Phillips et al., 2011). Even the ability to speak Spanish may not engender trust with these women, so the ethnicity of the researcher or interviewer needs to be taken into account.

Access to Healthcare Services

In addition to nurses often lacking knowledge of Hispanic customs and beliefs, many immigrants do not know the services available to them or how to access those services. The barriers to accessing care are well documented in the literature and include the following: financial/insurance issues, fear, transportation, customs/beliefs, lack of awareness of services, and negative past experiences with the health care system either in the U.S. or their country of origin (McFarlane et al., 1994). Hispanic women also may show reluctance to be cared for by males, and can be very hesitant to communicate through a male interpreter who is a stranger (Hazard, Callister, Birkhead, & Nichols, 2009). Many immigrants also are unaware of their rights to an interpreter in the medical setting which affects knowledge acquisition (Gurman & Becker, 2008). Isolation can be another barrier to accessing care. When women from this collectivist society move to a country where they no longer have community support, that sense of empowerment gained from such unity is stripped from them.

Gaps in Research

In 2003, it was noted that up to 56% of women in the U.S. use some form of narcotic analgesia during labor, yet there are virtually no studies examining the use of these drugs and the choices women are making surrounding their use (Leeman, 2003). With most of the literature on disparities in labor pain management focusing on epidural use only, the knowledge in this area is skewed and very one dimensional when referring to this as a health disparity for minorities. By addressing the gaps noted from previous studies, we will be able to identify better the issues regarding variations in epidural usage for Hispanic women, as well as gain new information on their use of other pharmacologic methods for childbirth pain management.

The University of Virginia (UVa) Health System serves a significant number of Hispanic women and maintains a large database that can be used to identify all pharmacologic pain management use (not solely epidural usage among women). The Hispanic population admitted for childbirth services in 2010 at UVa was approximately

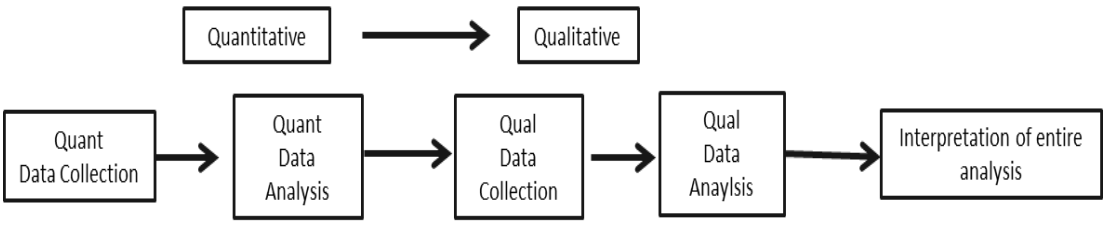
18%, which closely simulates the national figure of 16% from the 2010 census, and the numbers are similar for all years examined in the quantitative data (Humes et al., 2011; University of Virginia, 1996-present). By studying a more nationally representative sample, this can provide a more accurate depiction of intrapartum pain management in the Hispanic population compared to other ethnicities than has been described in previous retrospective studies that did not have population distributions similar to national figures. With the additional step of interviewing Hispanic women in their primary language about their perceptions of pain and pain management during labor and birth, knowledge about their expectations will provide context to the quantitative data that has been lacking in previous studies on pain management.

Study Strategy and Theoretical Framework

Mixed Methods

The research design for this study was a mixed methods approach, the first phase being secondary data analysis and the second phase involving interviews with Hispanic women. The purpose of this study design was to expand initially on the methods noted in the literature on labor pain management with the secondary analysis. Interviews were then conducted to enhance these results, with the goal of informing the findings of the quantitative analysis. While there are a number of approaches to mixed methods research, this plan followed a sequential explanatory strategy, which entails collecting the quantitative data initially, followed by the qualitative inquiry to expound on the primary results of the first phase (Creswell, 2009). A visual depiction of this strategy is presented in Figure 2.1. Using a mixed methods design, the ability to answer a research question is enhanced through a more comprehensive analysis, contextualizing results, and moderating weaknesses of each method while building on the strengths of each, as well as shedding light on research questions that cannot be fully resolved by one method alone (Doyle, Brady, & Byrne, 2009). In addition, the results of both phases of this study generated further questions that will become the foundation for future research. By enhancing our ability to describe social phenomena that impact health care delivery, a mixed methods design "responds to the pressures for outcomes in healthcare, but it can also report on the context of those outcomes"(Doyle et al., 2009, p.184).

Figure 2.1 Mixed Methods: Sequential Exploratory Design, adapted from (Creswell, 2009)



Secondary data analysis. For this study, a retrospective secondary analysis was conducted to gather information on the usage of pain medication during childbirth at the University of Virginia (UVa). Secondary analysis of existing data has become popular in nursing research, as well as other disciplines, such as marketing, education research, public health research, and more. There are two main avenues of secondary data utilization noted in these fields: data from previous research and data from existing records. Secondary analysis of previous research data involves using data collected in a prior study to examine relationships among variables that were not part of the original study analysis (Polit, Beck, & Ralph Erskine Conrad Memorial Fund, 2008). Often data collection in research studies involves gathering of more data than is needed to address the original hypothesis, and new research questions may use the same data to test different correlations among previously recorded variables (Hulley et al., 2007; Polit et al., 2008). In contrast, use of existing records involves examination of data not originally collected for research purposes, such as medical and billing records, allowing the researcher to assess a large amount of data with very little cost, as well as providing trend observations (Polit et al., 2008). The following discussion is focused on the use of existing records, as data from billing and medical records were used for the secondary analysis in this study.

Aggregate vs. individual data. Depending on the source of the data and the access available to the researcher, information may be available in an aggregate form or on an individual level. Aggregate data, useful for ecologic research, are data that are already congregated in groups by a common characteristic such as the percentage of Cesarean-section deliveries at a hospital within a certain time frame (Hulley et al., 2007). This type of data tends to be easily available from a variety of sources such as hospital record databases or large, de-identified public health databases. A weakness noted when using aggregate data is that differences among groups cannot be analyzed for causal relationships, and even if data are linked between databases or variables, there will still be individual differences that may not be apparent in the group analysis

(Hulley et al., 2007). While individual level data may be more useful depending on the research question, it may be more difficult to obtain or be cost-prohibitive, as well as being subject to privacy regulations.

Advantages of secondary data analysis. There are numerous advantages to nurse researchers when using any of these forms of secondary data. The most obvious benefit is the availability of large amounts of data that may be otherwise difficult or expensive to collect (vonKoss Krowchuk, Moore, & Richardson, 1995). While there may be some cost associated with secondary data use, often it is much less than that of other methods of prospective data collection and the time needed to procure the data is shortened. Prospective models also may restrict availability to population and variable samples needed to address the research question, which in turn will affect the results of the analysis (vonKoss Krowchuk et al., 1995). Existing health care records are widely considered to be an accurate and reliable source of information. The general consensus is that the most accurate recording of information is at the time of occurrence, and objective, retrospective data are noted as more accurate than post-event recall (vonKoss Krowchuk et al., 1995). In addition, records from a large teaching institution may provide more thorough information, given that students and residents tend to record an abundance of information compared with seasoned practitioners. However, more information does not necessarily equate to increased accuracy (vonKoss Krowchuk et al., 1995).

Another significant advantage to the use of secondary data from existing records is the ability to explore effectiveness of treatments and utilization of trends over time in a realistic setting. In the context of clinical trials, the efficacy of a treatment is evaluated in a very structured atmosphere, which may not translate to how effective or utilized a treatment may actually be in a more realistic setting (Hulley et al., 2007). Secondary data analysis has been noted to be a more efficient and effective route for analysis of the use of therapies, as well as trends or differences among population groups or regions (Hulley et al., 2007; vonKoss Krowchuk et al., 1995), making this method an ideal choice for the proposed dissertation study on the usage of pain management therapy during labor between ethnic groups. Despite the benefits of this method, there are some drawbacks and areas of caution for researchers using secondary data analysis.

Disadvantages of secondary data analysis. The main disadvantages of using existing medical record data for research is based in the knowledge that the original purpose of collecting the data was not for research. Because a research protocol was not in place at the time of collection, accuracy of records may be questionable, as well

as issues of partial or missing data without knowing the reason for the omission as a result of the retrospective nature of the analysis (vonKoss Krowchuk et al., 1995). In addition, the researcher is limited to what has been documented and the quality and storage of documentation (such as handwriting or microfilm storage), and is subject to misperception of data with changes in terms or acronyms over time (vonKoss Krowchuk et al., 1995). There also is no ability to verify information obtained, given the retrospective nature of the analysis, and there may be instances of diagnoses made from a subjective assessment with no objective data recorded to corroborate the diagnosis (vonKoss Krowchuk et al., 1995).

Additional concerns with secondary data analysis deal with the expertise needed to gather the data, conflicting information, and consent or privacy issues. When designing a secondary analysis, thought must be given to whether the personnel recovering the data need to be able to interpret the information as part of the collection process, as well as how to determine the most accurate record when there are conflicting pieces of information (vonKoss Krowchuk et al., 1995). Privacy issues constitute a major concern with retrospective analysis of existing data. Threats to privacy concerns as a result of technology advances first came to the forefront in the 1960's and have continued as a person's ability to control how others have access to their personal information defines how private their lives can be (Culnan, 1993). Because use of existing data involves no informed consent from the individual prior to acquisition, this secondary use of personal information can be viewed as an invasion of privacy, or a violation of HIPA regulations, enacted in 1996, requiring careful considerations and appropriate approvals before using such data (Culnan, 1993; Polit et al., 2008; vonKoss Krowchuk et al., 1995).

Other considerations. Attention also must be given to assemblage and manipulation of data for analysis when it is gathered from existing records not originally intended for research. When using medical record and billing data, as in this dissertation study, the records need to be assembled in a format usable by statistical software, which is subject to how the original data were recorded (Polit et al., 2008). Another consideration with analysis is the design of the statistical package being utilized, and how it interprets samples. Programs such as SPSS, which is the one used in this study, treat all data as if it were a simple random collection; therefore, a complex analysis of oversampled or clustered groups (such as the sample of all women having a vaginal birth over the last 5 years in the same institution) need to be analyzed in ways that account for that assumption (Thomas, 2001). In using SPSS, multilevel regression

was needed rather than simple regression analysis to deconstruct within group and between group variants for a more accurate analysis (Thomas, 2001).

In considering the pros and cons of secondary data analysis for this dissertation research, some of the issues and advantages have been thought through in the preliminary phases of design, while others required evaluation during the research process to support the validity of the results. Some of the benefits discussed above are apparent in the sample plan, alleviating cost and recruitment concerns. Access to the database for secondary data analysis, the Clinical Data Repository (CDR), at UVa was available as a student with no fees, offering access to years of billing and clinical data that had been recorded electronically. Initial access to information in the CDR was limited to aggregate data for the most part, so one step of the dissertation process was to request IRB approval for individual level data to allow for a more in depth analysis. Another issue was the type of data recorded, as much of the CDR information was from billing transactions and not medical records. To address this, design variables were chosen that could be obtained through the records within the database. In addition, because billing data required some interpretation to translate into events during childbirth, the author was the principal researcher retrieving the data. With her years of nursing and obstetric experience, the author was able to interpret the picture of the patient's hospital course more accurately even with limited variables. While there are issues that may arise as a result of the nature of secondary analysis, the benefits of time and cost savings made the dissertation plan much more feasible as the initial study in a research trajectory.

Andersen's Model

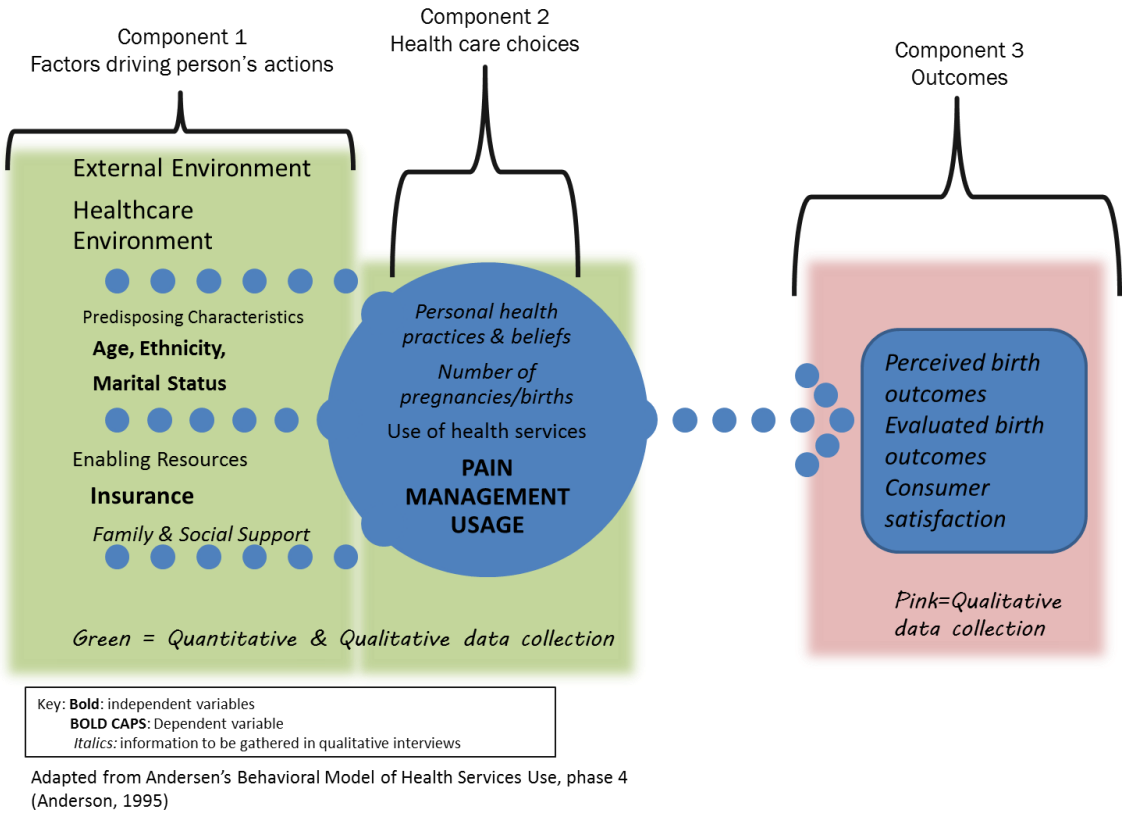
Both phases of the study were guided by Andersen's Behavioral Model of Health Services Use, developed originally in the 1960's. The model has been revised over the years, with a new version published by Ronald Andersen in 1995 (Andersen, 1995). The purpose of Andersen's Behavioral Model of Health Services Use, as it was originally developed, was to provide a method of understanding how a person's beliefs and perceptions influence health services seeking behavior (Andersen, 1995; Becker et al., 1977). The behavioral model provides insight into the factors that influence one to utilize health care services, extrapolating both explanation and prediction of these behaviors from its elements (Andersen, 1995). This theory begins with acknowledgment of the organizational factors within one's environment that set the stage for health services utilization. Fundamental components such as the type of health services and providers available, physical location of services, as well as political and economic

influences provide the backdrop for health care decisions (Andersen, 1995). The model also encompasses predisposing characteristics such as demographics, social structure, interactions and networks, as well as genetics, psychological factors, health beliefs/values, and knowledge of available health care services (Andersen, 1995).

In the context of this study, organizational factors refer to the type of hospital (teaching or community; rural or urban), the philosophy of childbirth management of that facility and its providers, as well as the current political and economic atmosphere for Hispanic immigrants, which also are region-specific. With the patient population being studied, cultural and social influences may have a significant impact on health care decisions, along with knowledge of how the U.S. health care system functions, communication with providers, and available services based on insurance and citizenship status. With regard to culture, the level of acculturation to the U.S. also may be influential, depending on whether the person is a first, second, or third generation immigrant. Andersen's Health Behavior Model has been widely used since its inception, being tested in a variety of cultural groups, including the Hispanic population (Becker et al., 1977; Hendryx, Ahern, Lovrich, & McCurdy, 2002).

All of the elements mentioned shape a person's personal health practices and his/her use of health care services. Health outcomes are defined in terms of a person's perceived health status, including how s/he evaluates his/her health as a result of care received, and the satisfaction level with either health services or self-care, ultimately affecting the population characteristics and their health behaviors (Andersen, 1995). In relation to Hispanic women receiving care for childbirth in the U.S., the components mentioned in this discussion not only affect health decisions for the women themselves, but often influence future choices for the entire family. Often the first encounter immigrant families have with the U.S. health care system is for intrapartum care, making this a key event in shaping their perceptions of the environment, resources, and future health care service choices (Berk et al., 2000). An adaptation of Andersen's model, with the variables to be examined in this study is shown in Figure 2.2. In addition to these variables, each component of the model is correlated with the phase of the study where the majority of the information for that component was obtained.

Figure 2.2 Conceptual Model (Andersen, 1995)



Adapted from Andersen's Behavioral Model of Health Services Use, phase 4 (Anderson, 1995)

Qualitative Description

To truly understand the factors that shape Hispanic women's choices in the childbirth setting, a qualitative description design was used to frame Phase Two of this study. Qualitative description is an exploratory method utilizing an inductive process that has great value in the ability to bring information to health care practitioners in a format that accurately represents the subject's viewpoint (Sandelowski, 2000; Thorne, 2008). In congruence with Andersen's model described above, and the goal of describing the behavior of the participants, qualitative description seeks to explore answers to questions important to health care practice, such as the motivation for using a service, facilitators and blockers for service use, and the meaning people attribute to events or health care encounters (Sandelowski, 2000). This method does not employ manipulation of variables, and is not bound to one theoretical construct for analysis. Instead it encourages study of the subject or event in its natural representation while taking into account that a subject's reality exists within a social framework (Sandelowski, 2000; Thorne, 2008). Qualitative description is relevant to cross-cultural

research, as it encompasses acknowledgment of the "experience from the perspective of others, while simultaneously accounting for the cultural and social forces that may have shaped that perspective" (Thorne, 2008, p.49). As this study centered on the cultural aspects of health care decision making for Hispanic women in the childbirth setting, this perspective was germane to the research questions and the focus of inquiry.

Despite the emphasis on pure description within this method, there also is an interpretation component that plays an integral role in qualitative descriptive studies. When used in the context of qualitative description, interpretation involves not only analysis of the data collected, but often can include minimal statistical analysis within the dataset to highlight patterns of behavior (Sandelowski, 2000). This inclusion gives context to the interpretation of subjects' perspectives of the experience being studied, increasing the scope of the findings. Qualitative description hinges on gathering information on how subjects experience health care situations, summarizing the participant viewpoints, quantifying patterns in a pseudo-statistical method, and analyzing the relationships and context of subjects' experiences that are clinically significant (Sandelowski, 2000; Thorne, 2008; Thorne, Kirkham, & MacDonald-Emes, 1997). This interpretation of the events being investigated is then analyzed within the framework of clinical relevance, moving practitioners closer to a general knowledge of the experience and bringing that knowledge into practice to improve clinical care (Thorne, 2008). The implementation of findings into clinical practice establishes qualitative description as an outcome to be utilized by practitioners, and has value as an entry point into further research questions and study development to improve clinical care and patient outcomes (Sandelowski, 2000).

Using an inductive method of inquiry with qualitative description involves taking specific data elements and extrapolating the findings to address more general clinical events (Thorne, 2008). For clinicians, the significance of analysis of relationships, similarities and differences, and operational patterns of behavior, portrayed in a way that is clinically meaningful, is a valuable contribution to health care research (Sandelowski, 2000; Thorne, 2008). Qualitative description's modest design allows for unencumbered analysis of clinical phenomenon, without the constraints of adhering to a specific theoretical arrangement of the data, and is seen as the preferred strategy for research goals that are focused on identifying motives behind health care choices by patients (Sandelowski, 2000). A reliable method of data analysis with qualitative description is qualitative analysis of content, which integrates the data with the social

context in which it was collected, thereby producing descriptions of how subjects view their social environment and react to it (Sandelowski, 2000; Zhang & Wildemuth, 2009).

Content analysis is a method that is seen across disciplines, and has been utilized in research since the 19th century (Elo, 2008). In health care, it has been used most in the areas of psychiatric, gerontological, and public health nursing research (Elo, 2008). The goal of content analysis is description of an event and the subject's reactions to that event, with the desired outcome being an abstraction of concepts from the data (Elo, 2008; Hsieh & Shannon, 2005). In addition, the women's descriptions of their childbirth experience are useful in explaining some of the results of the quantitative component of this mixed methods design. This process is especially useful for studies that are focused on topics for which there is limited theory or previous research in the literature, and allows abstractions to be developed inductively from the participant's descriptions (Hsieh & Shannon, 2005; Zhang & Wildemuth, 2009). A complete description of the process of content analysis conducted in this study is found in Chapter 3, Methods. The process utilized was adapted from the methods noted by Zhang (2009) as the basic framework, as this provides a clear, straightforward summary of the steps of content analysis as outlined by Zhang, which also is the same basic structure put forth by Elo (2007) and Hsieh (2005).

This study was designed with the goal of benefitting from both quantitative and qualitative data. A secondary analysis of a large data set was used to provide information on trends for labor pain management and how that differs among ethnic groups, with particular attention to the Hispanic population. To enhance and inform these results, qualitative description and content analysis of interviews with Hispanic women were added to these results, providing some insight into the results seen in the quantitative data.

Chapter 3: Methods

Research Design

Phase One: Quantitative Methods

Sample. Data were retrieved from the University of Virginia (UVa) Health System Clinical Data Repository (CDR). The CDR is a data warehouse managed by the Clinical Informatics Division of the Department of Public Health Sciences that contains retrospective views of de-identified clinical and billing data about patients seen at UVa. The CDR contains clinical data since 1996, and six of those years were used for this research. The original plan was to use 10 years of data; however, this was limited to six years because of the method of obtaining billing data for epidural use as described later in this chapter. From 2005 to 2011, the ability to accurately interpret billing codes within the UVa system was more precise. Therefore, to maintain integrity of the analysis, data retrieval was limited to those years. The unit of analysis with this dataset was de-identified individual level data. Inclusion criteria were women who had an inpatient vaginal birth from the year 2007-2012. Those delivering by Cesarean section (C/S) were excluded given that this study was focused on pain management during labor.

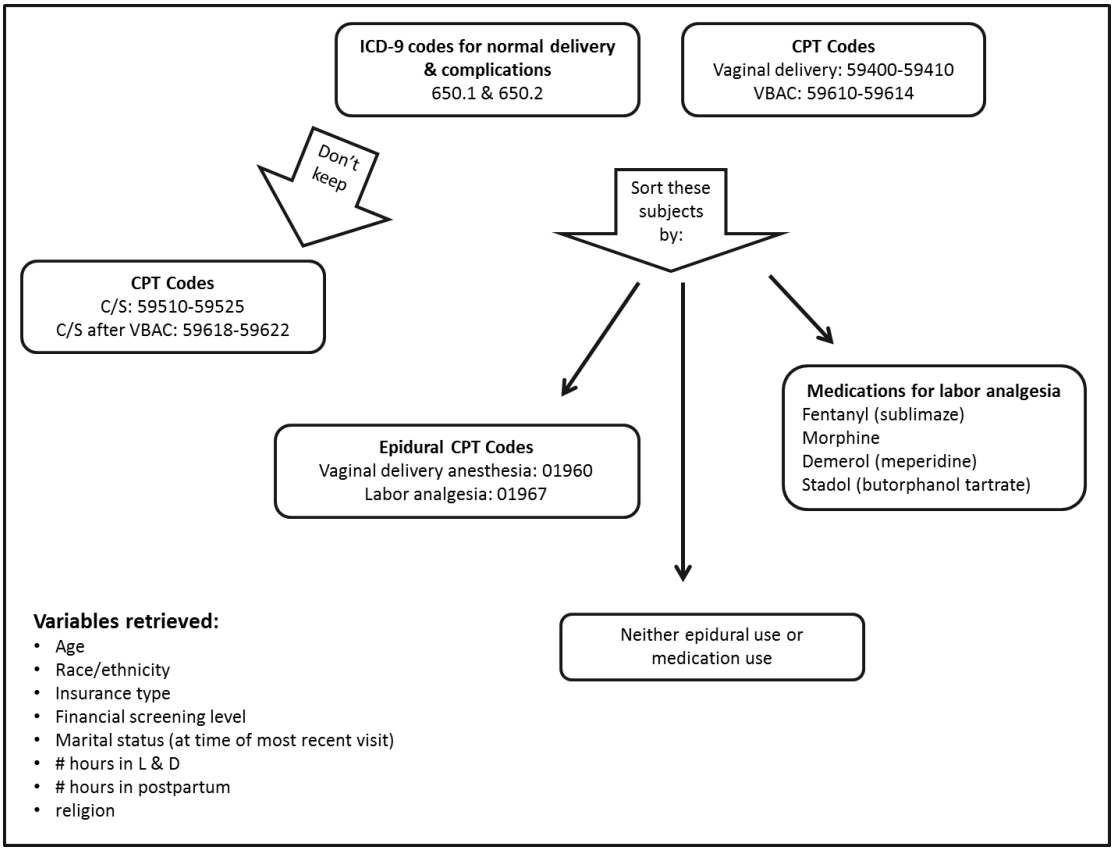
To minimize a Type II error with regard to the quantitative analysis, power was set at 0.80 using Cohen's convention, with an alpha of α=0.05. With six independent variables, the calculated sample size needed to minimize a Type II error was 151 subjects (Cohen, 1992). This was the minimum number of subjects needed; however, given that six years of data were examined and the preliminary investigations yielded over 7,400 subjects (all of which are included in the analysis) for the six year time span, the sample size greatly exceeded the minimum needed, even after data cleaning and accounting for missing values.

Setting. The University of Virginia Health System is a teaching hospital and research center located in Central Virginia. General medical and surgical services are provided, as well as level one trauma services to residents of Virginia and surrounding states. The hospital is a 570-bed facility and in the last year there were 1,662 births in their inpatient obstetric unit (U.S. News & World Report, 2013). The Hispanic population using the inpatient obstetric services has been consistently 16-18% within the last 10 years, which closely represents the national population statistics put forth in the 2010 Census (Humes et al., 2011; University of Virginia, 1996-present).

CDR Dataset.

Variables. Data were acquired with the assistance of a CDR administrator using ICD-9 (diagnosis) and CPT (procedure) billing codes (Gabbert, Kachur, & Whitehead, 2011; Hart, Stegman, & Ford, 2011) from the years 2007-2012 for the first data retrieval attempt. The initial data acquisition flow chart used by the CDR administrator to retrieve information from this billing database is seen shown in Figure 3.1. This chart guided the administrator in limiting the data to vaginal deliveries by using the ICD-9 and CPT coding, then sorting epidural usage and medication usage for each subject. However, when analyzing these data, it became clear that there was a flaw in the method of retrieval, as the percentage of all women in the sample who used epidural anesthesia was 44.7%, significantly lower than what was noted in the literature. Even with the wide range of epidural rates noted in the literature as mentioned in Chapter 2, this low number warranted investigation.

Figure 3.1 Initial CDR Data Acquisition Flow Chart (1st data retrieval)



To confirm the validity of the data retrieved, and to further investigate the discrepancy between the study results and the literature regarding epidural use, an analysis of raw data from the hand written records on the Labor and Delivery (L & D) unit at UVa was implemented. The L & D unit keeps hand written log books of every patient that is admitted as an inpatient or seen in the triage area. The information gathered in this record includes the type of delivery (vaginal or C/S), and the type of anesthesia used for each patient giving birth on the unit. The record does not include variables such as race/ethnicity, marital status, insurance, or IV medications used, thus, it could not be used as a data source for the study. However, the information was sufficient to perform a validity check on the number of epidurals provided during the same time period as the CDR data, to confirm the accuracy of the data retrieved for the study.

Using a random number generator, six random months were chosen to record data from the L & D logbooks within the same time period as the CDR dataset being analyzed. The random months selected were August 2007, April 2008, October 2008, June 2010, November 2010, and October 2012. Data recorded from these log books included the month and year, type of delivery, and type of anesthesia (epidural, spinal, general, or none). The results of this analysis are shown in Table 3.1. Of the women who delivered vaginally, the percentage of the sample choosing to use epidural anesthesia was 70.1%, which was much higher than in the initial CDR dataset analysis.

Table 3.1 Logbook Validity Check

Variable	Categories	Vaginal delivery *n*=529	C/S delivery *n*=307	Total *N*=836
Pain Control Method	General Anesthesia	0 (0.0%)	34 (11.0%)	34 (11.0%)
	Spinal anesthesia	7 (1.3%)	205 (66.3%)	212 (67.6%)
	Epidural anesthesia	371 (70.1%)	62 (20.1%)	433 (90.2%)
	Both spinal anesthesia & epidural anesthesia	0 (0.0%)	6 (1.9%)	6 (1.9%)
	None	150 (28.4%)	0 (0%)	150 (28.4%)

As a result of this analysis, the CDR administrator was consulted again to investigate this discrepancy and to resolve the issue. After several unsuccessful attempts to correct the data retrieval method, it was decided that a closer look at some individual cases was needed to see if there was a way to pinpoint the issue. The records of two subjects who had been designated as not having epidurals were examined and

the discrepancy was discovered immediately. When looking at the billing records of these two subjects in detail, each were billed for medications that are clearly used for only epidural continuous infusions. However, they did not appear in the initial retrieval process because they were billed only for the medications and not for the epidural procedure using a CPT code.

It was clear that these women would need to be identified by either the CPT code or being billed for an epidural medication. Even though epidurals and spinals are used throughout the hospital, the initial inquiry was only retrieving data from the pool of patients with either the CPT code for vaginal delivery or the ICD-9 codes for pregnancy and delivery, to prevent erroneously obtaining non-obstetric related epidural administration by using medications as a search method. The data procurement plan was altered, and the revised flow chart for this is shown in figure 3.2. With this revision, the second data retrieval showed a total epidural usage rate of 70.6%, which was almost an exact match to the random logbook analysis of hand written data. The constructs, variables of interest, and levels of measurement for the phase one data are outlined in Table 3.2.

Figure 3.2 Revised Data Acquisition Flow Chart (2nd data retrieval)

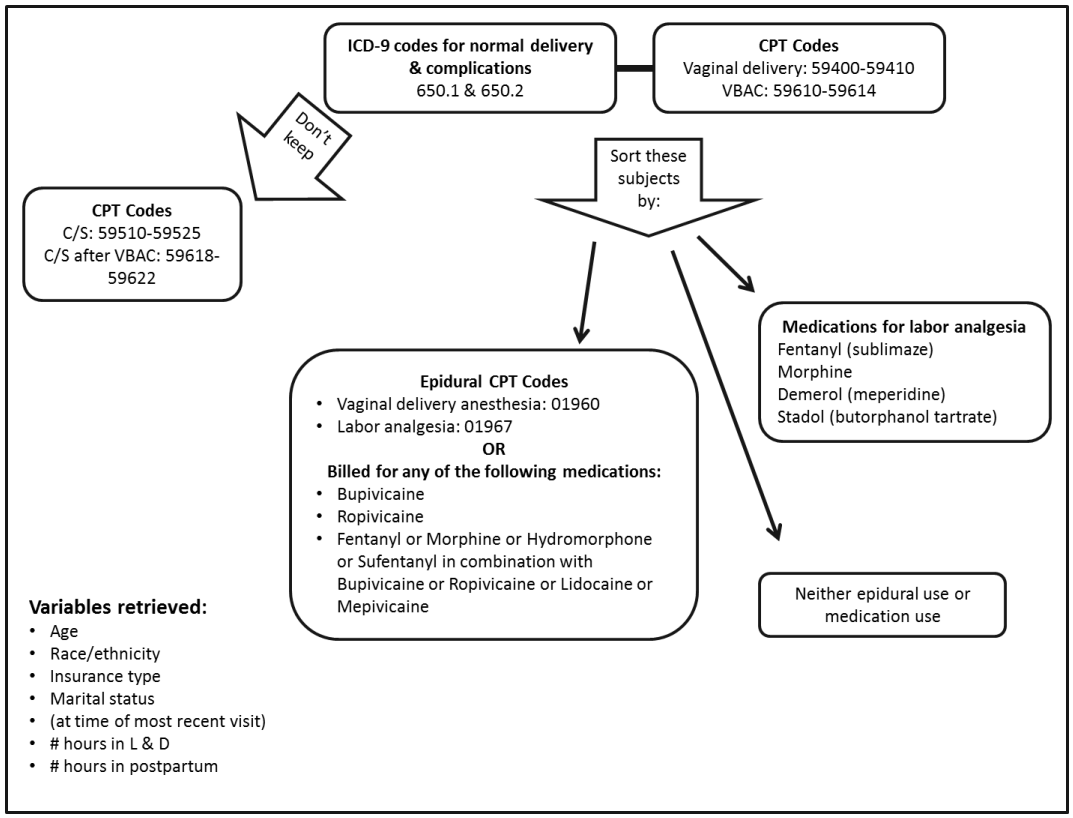


Table 3.2 Operationalization of Study Constructs

Construct	Variables/Coding	Level of Measurement	Source	Method
Independ-ent variables	1. Age Categories 0= <20 years 1= 20-29 years 2= 30-39 years 3= 40 + years 2. Race/Ethnicity H= Hispanic W= White B=Black/AA A=Asian O=Other 3. Hispanic/non-Hispanic 0=Hispanic 1=All other races 4. Marital Status M=married/partnered S=single D=divorced O=other 5. Insurance type (payer) 0=Self-pay/Other 1=Public insurance 2=Private insurance 6. Hours in L&D unit (# of hours) 7. Hours in PP unit (# of hours)	1. Nominal 2. Nominal 3. Nominal 4. Nominal 5. Nominal 6. Ratio 7. Ratio	Demogra-phic data from UVa's Clinical Data Repository	Retrospective medical record review
Dependent variable	1. Pain method 0=no pain medication 1=analgesic medication 2=regional anesthesia 3=both analgesic medication and regional anesthesia	1. Nominal	Billing data from UVa's Clinical Data Repository	Retrospective medical record review

Data Management & Cleaning. Using the second data retrieval method, the revised dataset accessed the years 2003-2013, and included 11,776 subjects from the ten years. An initial examination of these revised data continued to show a lower rate of epidural use for the first few years of data, with 2003 and 2004 having a lower percentage of epidural use than the other years recorded. Upon investigation into the CPT coding procedures during that time period, it was discovered that prior to 2002, epidurals were not coded separately, but were embedded within the labor and delivery charge by the physician as a bundled package (Cooper, 2013). While the coding regulations changed in 2002, it was clear that the new procedures of coding epidurals separately using a unique code (outlined in Figure 3) was not being followed during 2003 and 2004, or was inconsistently being used. In addition, the data from 2012 and 2013 were incomplete, as not all of the billing transactions had been finalized for those years, and retrieval was being done within the year 2013. To avoid inaccurate or incomplete data collection, it was decided that only six years of data would be used, limiting the years of data to 2005-2011.

From 2005-2011, there were a total of 8,330 potential subjects for the six-year time span. The subjects each had a unique identification (ID) number (not their medical record number), and some were in the database more than once. Some of the duplicate patient IDs were the result of the same patient giving birth in different years, as the year of birth was different and coincided with the subject's age. However, there were some duplicates that were entered for the same year. Of these, one of the entries had both labor and recovery hours associated with the entry, while the rest of the entries for that year had only labor hours recorded. Often women are admitted for labor and given that diagnosis code before delivery, then discharged because it was false labor, or they are admitted with that code to deal with complications, observed for a time period and then discharged. Given that this is common practice, it was determined that these duplicate entries with no recovery hours were women who were admitted before delivery, and the one entry with recovery hours was the actual childbirth admission. For this reason, the data were sorted to identify all subjects with no recovery hours recorded, and those entries were deleted. There were 873 entries fitting this description, and these were removed from the dataset, bringing the total to 7,457 subjects. Of the remaining subjects, there were still some with duplicate entries for different years. These were determined to be the same subjects delivering subsequent children. For analysis, these

women were treated as separate subjects because these were distinct childbirth events at different time points.

The variables of age, race, ethnicity, marital status at time of most recent admission, insurance payer, financial screening pay scale, number of hours in labor and recovery, and religion were retrieved in the dataset. The variables of religion and financial screening pay scale were not used in the analysis as the data were incomplete with a large proportion of missing data. In addition, race was chosen to identify Hispanic subjects as opposed to ethnicity, as there was a large amount of missing data with the ethnicity variable (3,006 subjects were unknown or missing within the ethnicity variable), while the race data were complete. Even though the U.S. Census has made a distinction between race and ethnicity since the 2000 census (Humes et al., 2011), the data collected in the CDR database were not complete with regard to this separation of variables. The race variable was recoded into the categories of Hispanic, White, Black, Asian, and other. The "other" category included subjects whose race was given as other, unknown, or Native American. In addition, race was re-coded to form another variable for use in examining Hispanic women compared to all other races. The two categories for this new variable were Hispanic and all other races. The marital status category was recoded into the categories of married, single, divorced, and other, with the "other" category including widowed, separated, and unknown marital status. Age was re-coded into the categories of <20 years, 20-29 years, 30-39 years, and 40+ years.

The variables of pain medication and epidural usage were separate variables in the original dataset. These two variables were recoded into a new variable labeled pain method. The categories for this variable were: none, analgesic medication, epidural anesthesia, and both analgesic and epidural anesthesia. These variables were coded as outlined in Table 3.2. The payer variable was re-coded into three categories of public insurance, private insurance, and self-pay/other. The specifics of the payer category designation are outlined in Table 3.3.

Table 3.3 Payer Re-coding Categories

Original category	Re-coded category
• Medicaid • Medicaid OS • Medicaid HMO • Medicare	Public Insurance
• Aetna • Blue Cross • Cigna • Commercial • Managed Care • Southern Health • Tricare • United • Mamsi	Private insurance
• Grant funded • Self-pay • Other	Self-pay/Other

Data Analysis Plan: Statistical Tests

To address specific aim one, descriptive statistics and chi square analyses were conducted. After the data cleaning was completed, descriptive analysis was done to examine demographics and pain management methods used. This analysis was conducted for the whole sample as well as a breakdown of these variables for each of the racial groups. In addition, the pain management method was evaluated based on payer status for the whole sample and for the Hispanic subjects separately. Following descriptive data scrutiny, a chi square analysis was conducted to determine differences in pain management method by race and payer. Additionally, a chi square analysis was conducted to determine differences with the Hispanic subjects compared to others with regard to pain management method. For this step, the race category was again re-coded into just two categories: Hispanic and other.

A multinomial logistic regression was conducted to address specific aim two, examining the influence of race, age, and payer on the pain control method choice. For the multinomial logistic regression, the re-coded race variable was used to compare

Hispanic women to all other races rather than using the detailed race category. The referent group for race was Hispanic women. The referent category for insurance type was private insurance, comparing both self-pay/other and public insurance to the private insurance category. The age category variable was used rather than the continuous variable of age to examine differences among older versus younger women. The referent group for age was the 40+ year category. This compared all other age categories to the oldest group of women. The referent group for pain management method was no pharmacologic pain method used.

Strengths and Limitations of the Dataset.

Strengths. Information on procedures, medications, demographics, and diagnoses are available on a de-identified, individual level for all patients seen at UVa, both inpatient and outpatient. In preliminary explorations of the dataset, a cross-sectional examination of the data from 2010 revealed the percentage of Hispanic women in this group to be around 18%, which closely parallels current national averages from the 2010 census (Humes et al., 2011; University of Virginia, 1996-present). Access to this dataset is available to students through the School of Nursing with no fees, and administrators of the CDR are available to assist in compiling the de-identified data.

Limitations. Demographic data only identify whether a patient is Hispanic, with no information indicating whether the individual was born in the U.S. or was foreign-born, limiting the ability to determine the level of acculturation. In addition, the number of pregnancies and live births for each subject is not available from this dataset. Another limitation is the method of data retrieval. Re-creating the picture of a hospital admission and the medical course of treatment is not 100% accurate when using billing and coding data. As noted by the discrepancies described above, this method presents limitations to the data obtained. However, with the validity check using the hand written logbook records, confidence is high that this dataset is an accurate representation of the variables examined.

Phase 2: Qualitative Methods

Sample. The sampling method for the qualitative phase of this study was purposeful sampling, with demographics and the event of childbirth at the heart of the selection process (Sandelowski, 1995). One of the goals of this study was to describe the perception of childbirth events among a group of Hispanic women who, though from different countries, were a fairly homogenous group from a cultural perspective, making early data saturation likely. The more similarities among the subjects, the fewer

participants are needed given that data saturation will occur more quickly (Guest, Bunce, & Johnson, 2006). The sample size of the study was 17 women, which allowed sufficient data saturation.

Inclusion criteria were adult women attending the prenatal classes taught in Spanish through Winchester Medical Center (WMC) in Virginia, whose primary language was either English or Spanish and who identified themselves as of Hispanic origin. Women referred by the class participants, who also self-identified as Hispanic, and had a childbirth experience within the last 2 years were included. Women under the age of 18, or whose childbirth experience was a scheduled Cesarean section birth were excluded.

Setting. Subject recruitment for Phase Two was done through contact during a prenatal class, conducted in Spanish, at WMC. The class was a program organized by the Community Prenatal and Language Access (CPLA) program, working in conjunction with WMC, to address gaps in prenatal education for low-income, Hispanic women (Pitcock, 2013). Contacting the women through the prenatal class was facilitated by Naomi Pitcock, who worked with the class leaders and was a fellow UVa student in the DNP program. After initial contact by the researchers, the women were scheduled for individual interviews to be conducted after they had given birth. The sampling method was convenience sampling, given that only Hispanic women attending these class sessions were recruited. In addition, snowball sampling was employed to reach more subjects within the local Hispanic community. Inquiry was made during the interviews as to whether the women had friends who would qualify for the study, and may be interested in an interview. This method was done to simplify the screening and recruiting process, as well as to facilitate a trusting relationship with the women through referrals (Polit et al., 2008). Eligibility included women who were recent immigrants as well as 2nd or 3rd generation Hispanic women.

Winchester Medical Center, in Winchester, Virginia, is located in the northern tip of the state, which services residents in Virginia, Maryland, and West Virginia. The medical center is a level II trauma center with 445 beds, and houses ten private birthing suites (ValleyHealth, 2013). The population of Winchester is over 26,000, with 16.1% of that population identifying as Hispanic (U.S. Census Bureau, 2013). The prenatal classes given by CPLA were designed using a culturally appropriate approach to increase participation and compliance. The class was called a “baby shower” or “fiesta” instead of a prenatal education class, which has been shown to increase participation with this

population, and specific teaching methods were used to enhance the participation and education of Mexican and Central American women (Pitcock, 2013).

The process for recruitment began with attending the prenatal classes at WMC. During the class lunch break, the women were told about the study by the researchers, and those who were interested signed a roster, including their phone number and delivery due date, and indicating that they were willing to be contacted by the researcher and research assistant later for interviews. Several weeks after their delivery due date, the women were called to set an appointment for an interview in their home or the location of their choice. Pre-screening during the phone call was limited to confirming that they did not have a scheduled Cesarean-section delivery and that they were 18 years or older. Consent was obtained at the time of the interview. After the interviews, referrals to other interested women were obtained if available.

Staff Training. There were two research assistants working on this study. Carmen Chinchay, a bilingual obstetric nurse from Mexico, was hired to assist with recruiting and interviewing the women in the study, as well as translation of the interview transcripts. Training was done by the researcher with Ms. Chinchay regarding recruitment techniques and qualitative interviewing using nursing research texts and articles, as well as individual instruction. She also completed CITI training prior to beginning work on the study. Allison Walkowski, a volunteer study nurse, assisted with the qualitative analysis of the interview data. She also was trained by the researcher in qualitative analysis and coding through the use of nursing research texts and individual instruction. In addition, Ms. Walkowski completed CITI training prior to beginning work on the study.

Consent Procedures. Consent was obtained at the time of the interview. The consent form was printed in Spanish and explained to the subjects in Spanish. It was reviewed with the women line by line, and Ms. Chinchay ensured that they understood all components of the consent. The consent was signed by the participant and Ms. Chinchay. A second copy also was signed and left with the participant for her records. Each subject was given a study ID number, and all data were filed by these ID numbers. The consents were kept in a locked file cabinet separate from the data, and the key linking names to study ID numbers was kept in a separate locked cabinet, away from the data and consent forms.

Interview format. Semi-structured interviews were conducted in the participants' native language by Ms. Chinchay and the researcher, in the subjects' homes or a location convenient for the subjects. One participant chose to conduct the interview in English; all others were conducted in Spanish. The participants were paid $10 after completion of the interview, which lasted from twenty to forty minutes for most of the women and were recorded by the researcher. A questionnaire was completed by the interviewer to gather information on participant demographics as well as specifics about their labor experience. An interview guide was used to facilitate discussion with open-ended questions and prompts used by the interviewer. The questions were used to launch discussion of birthing practices, labor pain management, and experiences the women had within the U.S. health care system (see Appendix A for qualitative demographic questionnaire and interview questions).

Qualitative Data Analysis Plan.

In addressing specific aim three, qualitative content analysis, as outlined by Zhang (2009), was used for the data analysis. These steps involve preparation of the data and definition of the unit of analysis, development of the coding scheme along with testing it against a portion of the text, coding the remaining data and assuring consistency among coders, then grouping of the codes into categories from which themes are developed (Zhang & Wildemuth, 2009).

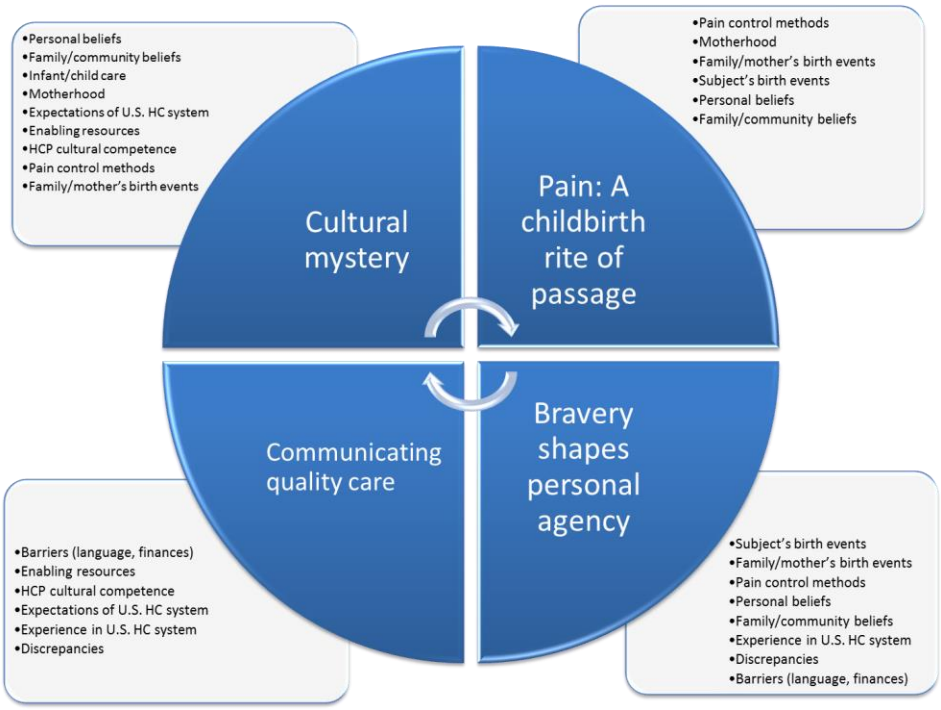
The interviews were recorded for accuracy in analysis, with two recorders used simultaneously. The recordings were then downloaded into a computer file, as well as on a disk. Audio recording files were kept on a secure drive within the UVa School of Nursing and identified only by subject number. The disks were housed in a locked cabinet within a locked room and identified only by subject number. Transcripts were prepared, in Spanish, by Landmark Associates, Inc., a professional transcription company. The interviews were transcribed word for word, to be able to see the full picture of their experience by examining the concepts as well as the wording the subjects chose to describe the events (Zhang & Wildemuth, 2009). Transcripts were then translated into English by the researcher and the bilingual study nurse. Proof reading was done by the researcher for all transcripts, which entailed reading the English and Spanish versions side by side to ensure that the intent of the subjects' statements was being translated accurately. Both the Spanish and English documents of the interviews were kept on a secure computer drive within the School of Nursing with only study ID numbers identifying the subjects.

Coding was done by the researcher and Ms. Walkowski simultaneously. Data were arranged by the interpretations of the event of childbirth as described by each participant. Codes were initially established by the content of the questions and the conceptual framework. These were then evaluated using a constant comparative method of comparing coded text to other text in the same category for the purpose of identifying the properties of each classification of text (Zhang & Wildemuth, 2009). This method allowed continual modification of the codes, based on the dynamic qualities of the interview content. A coding template was used, and text was assigned to more than one category if appropriate, as is common in qualitative content analysis (Zhang & Wildemuth, 2009). Direct quotes were evaluated in addition to content coding, to provide context to the data, or to understand the full meaning of the participants' experiences (Zhang & Wildemuth, 2009).

There were a total of fourteen categories that contributed to theme development. The categories were: personal beliefs, family/community beliefs, subject's birth event, family/mother's birth event, pain control methods, infant/child care, motherhood, experience in U.S. healthcare (HC) system, knowledge of U.S. HC system, expectations of U.S. HC system, health care provider cultural competence, discrepancies between expectations and event, barriers to care, and enabling resources. Once coding was completed, categories were refined by grouping these codes based on shared concepts (Polit et al., 2008).

From these topics, themes were abstracted to describe the participants' experience in general terms that encompass the more detailed concepts in the data in a clustering process (Polit et al., 2008). The themes were 1) pain as a childbirth rite of passage; 2) bravery shapes personal agency; 3) cultural mystery; and 4) communicating quality care. Some of the codes contributed to more than one theme, as seen in the diagram in Figure 3.3, which shows the themes along with the categories contributing to them. Interpretation of the data and conceptualization of the shared topics, as well as the themes, used a continual, iterative approach, where interpretation and restructuring of the categories occurred concurrently as the data were analyzed (Polit et al., 2008). There was continual consultation between the two coders, to test the coding scheme as well as to confirm the consistency of categorization, which continued throughout the analysis phase.

Figure 3.3 Themes with Contributing Codes



In keeping with the intent of qualitative content analysis, themes developed from the codes focused on the importance to the social reality of the events being discussed in the interviews (Zhang & Wildemuth, 2009). Patterns of behavior and meanings discovered in the data were analyzed in the context of the conceptual model outlined in Chapter 2, allowing the results to be presented in the context of clinical relevance. Conclusions were developed using a combination of description to provide a context of the women's unique perspective, and interpretation for the purpose of true comprehension of the events from the perspective of the participants (Zhang & Wildemuth, 2009). The pragmatic nature of qualitative content analysis allowed the descriptive and emerging results to then be organized in a manner appropriate to the intended audience, the obstetric care provider, and facilitate a dialogue between theory and nursing practice within the discussion (Sandelowski, 2000; Thorne et al., 1997).

While validity and reliability are well-defined in quantitative research analysis, there is no mutual agreement on the terms or methods of these processes in qualitative research analysis (Zhang & Wildemuth, 2009). Often the concepts of credibility, transferability, dependability, and confirmability are used as a basis for validity testing in qualitative research (Denzin & Lincoln, 2005; Zhang & Wildemuth, 2009). Credibility, or appropriate representation of the data and interpretation, was the main method used

in this study for validation of the accuracy of the data and was achieved with member checking (Zhang & Wildemuth, 2009). After themes were established, member checking was done with a cross section of the sample that included women from all 3 Latin American countries representing close to 25% of the total sample. Ms. Chinchay and the researcher contacted these participants by phone to allow them to evaluate the themes generated by the interpretation of the data and provide critical feedback (Polit et al., 2008). During these conversations, all participants who were called agreed with the concepts that the themes were addressing and stated they felt it was an accurate representation of common beliefs and practices in the Hispanic community.

Strengths. By recruiting from the prenatal class, as well as snowball sampling, the goal was to obtain a mix of recently immigrated individuals and those who were born in the U.S. and were acculturated. Snowball sampling also was thought to increase the likelihood of women agreeing to be interviewed. The open-ended nature of the questions used allowed women to elaborate on the areas of their labor experience that they felt were important, rather than more directed questions. By interviewing women who were less than two years postpartum, the women had a more accurate recall of the events as the experiences were recent. Conducting interviews in the women's homes, with a bilingual nurse from the same cultural background possibly increased the comfort level of the participants, facilitating the interview process.

***Limitations*.** The immigration status of the women contacted was not known prior to recruitment. In addition, the homogeneity of the population influenced data saturation (Guest et al., 2006), which occurred early in the data collection process. Despite the homogeneity of the sample, 17 interviews were conducted, which provided some variation as a result of the circumstances of the individual childbirth events.

Cultural factors confounding enrollment potential for Phase Two were addressed. Studies have shown that when dealing with the Hispanic population, particularly women, recruitment and retention is much more effective when the study personnel are of the same ethnic background (Larkey et al., 2002; McFarlane et al., 1994). To combat this potential barrier to interview recruitment, a bilingual study nurse with connections to the Hispanic community was employed to enhance subject comfort and trust, and to facilitate gathering the most accurate and rich qualitative data. The research nurse, Ms. Chinchay, attended the prenatal classes, conducted the one-on-one interviews with the researcher, and assisted with the translation of the interview transcripts.

Protection of Human Subjects

Approval was obtained from the UVa Health Sciences Research (HSR) Institutional Review Board (IRB) for both Phase One and Phase Two data collection. IRB approval also was acquired from WMC for Phase Two subject recruitment (details described within the Phase Two data collection section. Approval record numbers are as follows: UVa: IRB-HSR #16672; WMC: IRB #20130201.

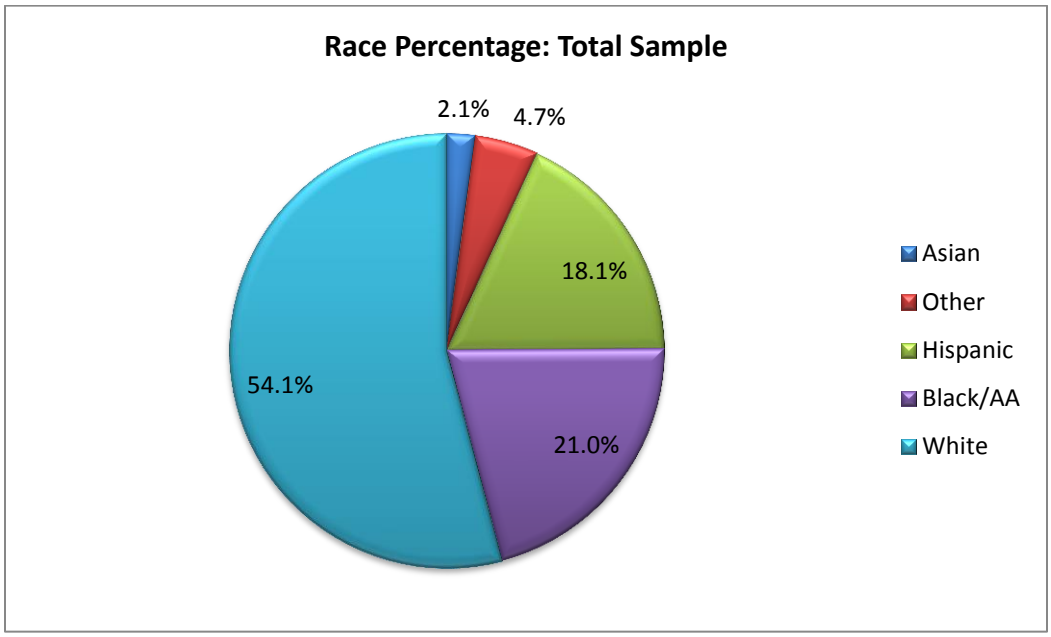
Chapter 4: Results

Findings

Phase One Results

There were a total of 7,457 women in the sample used for final analysis. A summary of the racial distribution for this sample is shown in Figure 4.1. While the population at the facility did not mirror the exact percentages seen in the 2010 U.S census for all races, the Hispanic population percentage was close to the national Census estimate of 16.3% in 2010, yet higher than the Virginia Census estimate of 8% (Humes et al., 2011).

Figure 4.1 Race Distribution: Total Sample



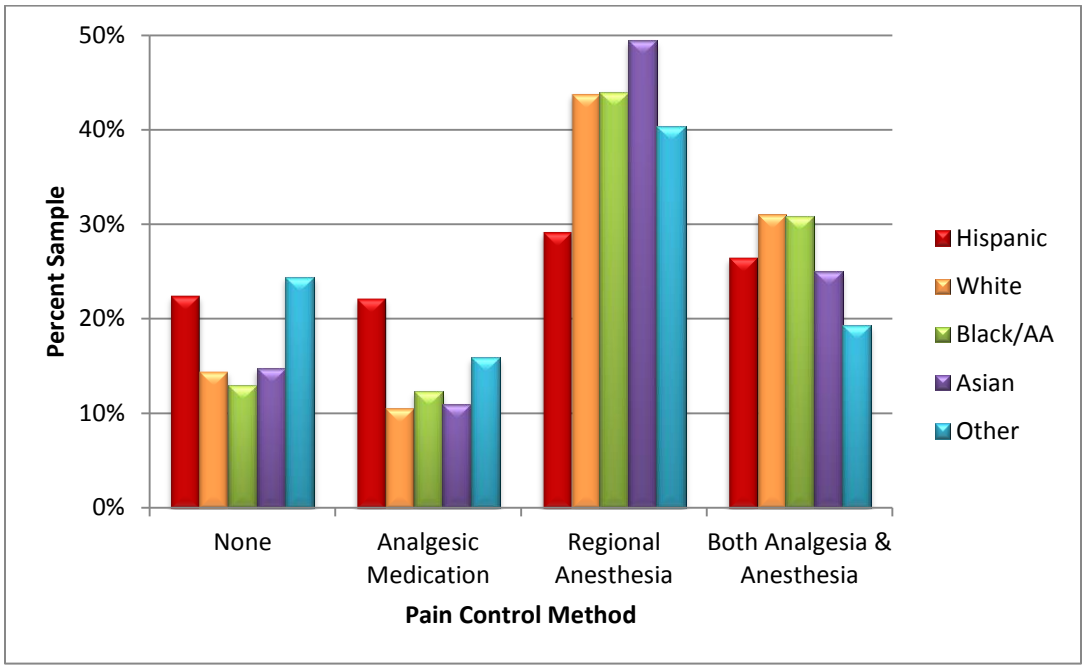
The age range for the women in this sample was from 13 years old to 54 years old, with the majority of women (83.9%) between the ages of 20 and 39. Of the total sample, 42.8% were single and 40.3% were married at the time of their last admission to the hospital. Public insurance was used by 55.2% of the women. A detailed list of specific insurance categorization can be found in Chapter 3, Table 3.3.

Pain control methods used varied among the racial groups, as will be discussed further in the analyses. For the total sample, 16.1% of the women chose no pharmacologic method of pain control during labor, 42.8% chose an intravenous

analgesic medication, and 70.6% chose regional analgesia/anesthesia for labor pain management. Of those last two groups, 29.5% chose both intravenous analgesic medication and regional analgesia/anesthesia combined.

The pain control methods used by the women in the sample are shown in Figure 4.2, classified by racial groups. This bar graph illustrates the differences noted in the sample with regards to labor pain management. As depicted in the graph, Hispanics and the "Other" category had similar frequencies that differed from the other racial groups with regard to use of intravenous analgesic medication, and the choice of no pharmacologic pain control method. For all pain control method categories, the Asian, Black/African American, and White groups made very similar choices, with the exception of Asians using only regional analgesia/anesthesia with greater frequency than all other groups.

Figure 4.2 Pain Control Method by Race



To illustrate differences in the frequency of pain control method used by Hispanics compared to the rest of the sample, this same graph is shown in Figure 4.3 with only two groups depicted, Hispanics and all other races combined. As shown, Hispanics chose no pharmacologic pain management method or intravenous analgesics more frequently than all other racial groups combined. In addition, these women chose

regional analgesia/anesthesia and the combination of those methods with intravenous analgesia less frequently than all other groups.

Figure 4.3 Pain Control Method: Hispanic & All Other Races

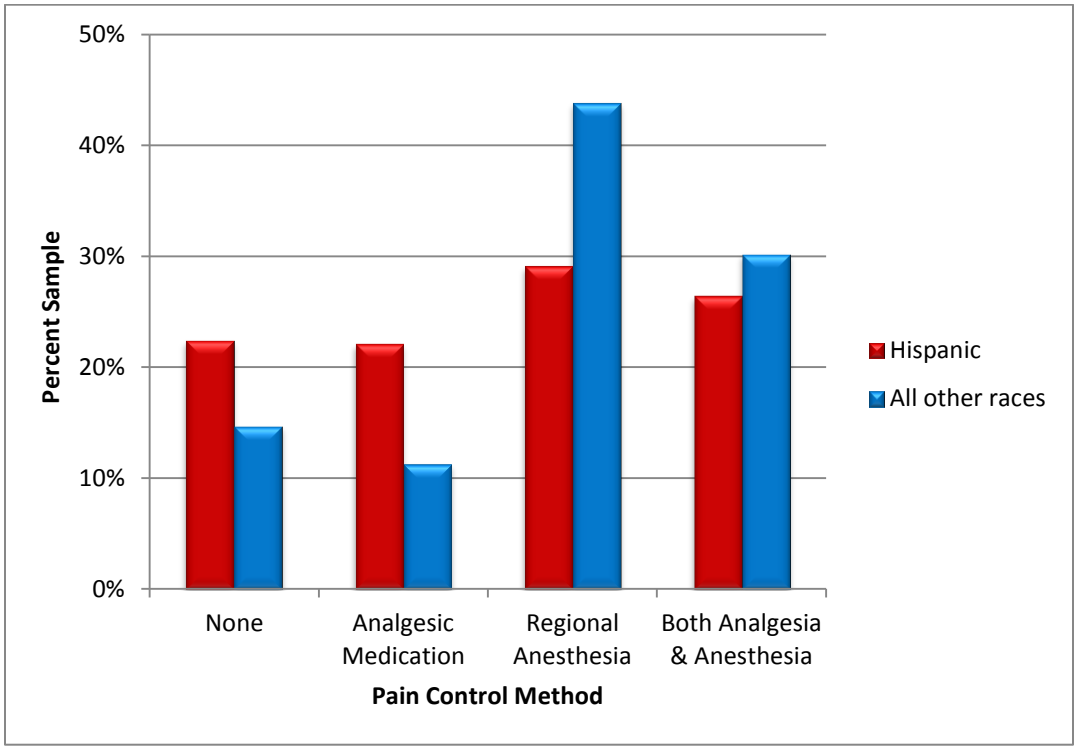
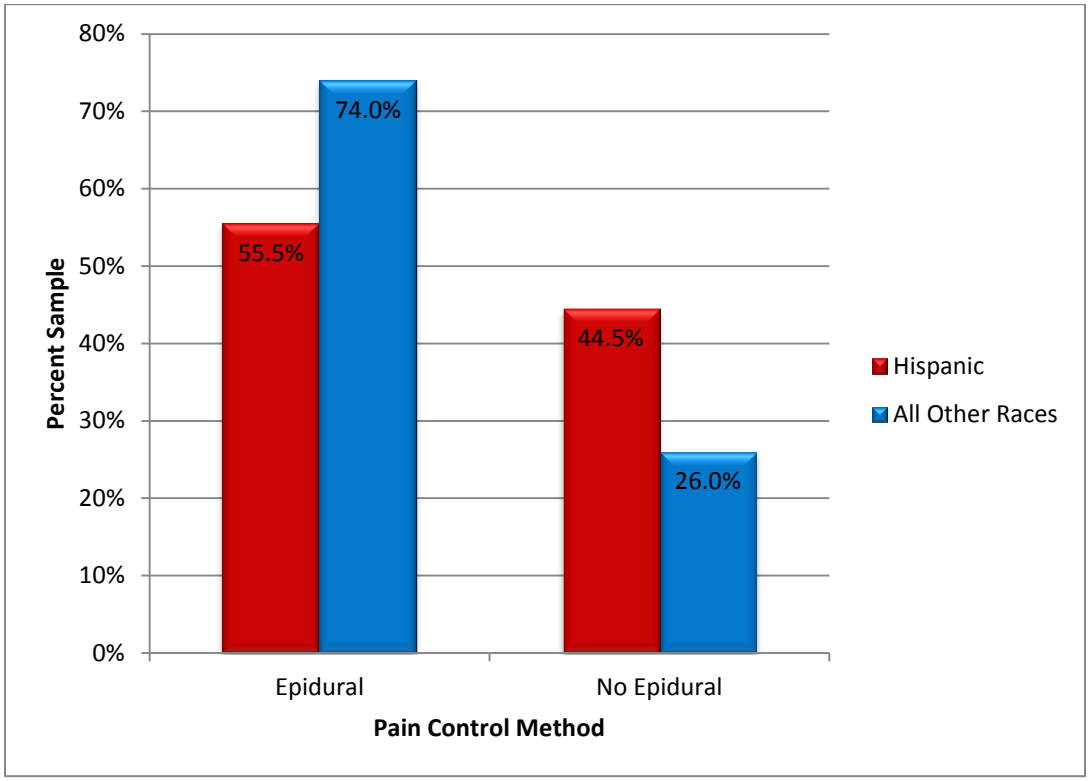


Figure 4.4 highlights use of regional analgesia/anesthesia only, or labor epidural use, as that is the more common terminology used. The frequency differences between the use of epidurals, or non-use of epidurals, examining Hispanics compared to all other racial groups are shown.

Figure 4.4 Epidural Use: Hispanic & All Other Races



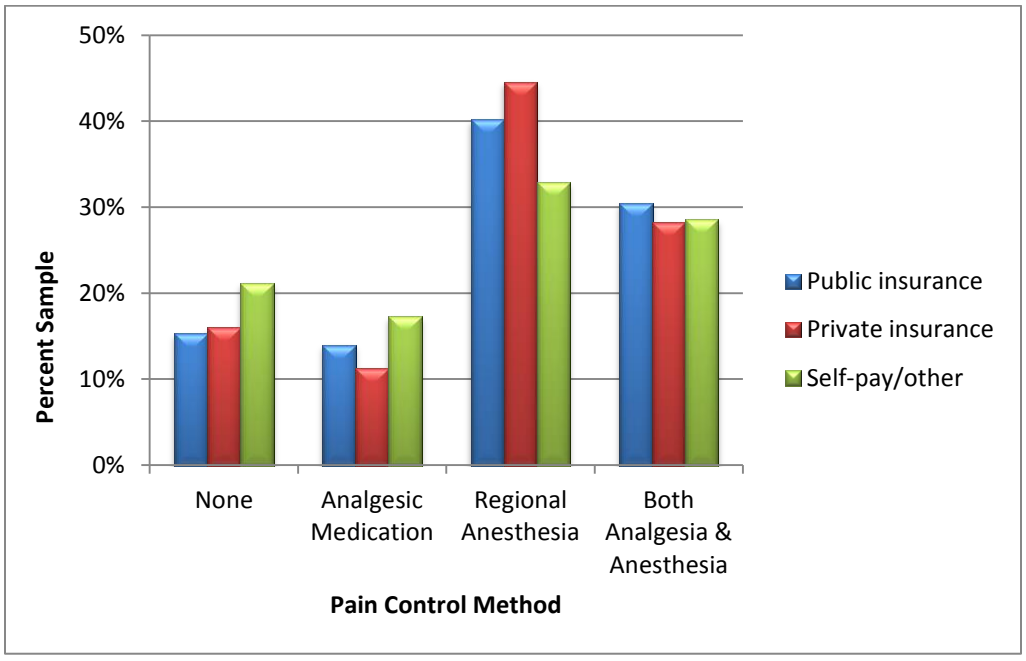
In Table 4.1, pain control method is displayed by insurance type for the total sample and for Hispanic subjects only. The frequencies did not differ greatly for either group, regardless of insurance type. The frequencies for the total sample are depicted in Figure 4.5 for a more visual representation.

Table 4.1 Pain Control Method by Insurance Type

Variable	Categories	Total Sample			Hispanic Subjects Only		
		Public Insurance *n*=4,115	Private Insurance *n*=2,682	Self-Pay/ Other *n*=660	Public Insurance *n*=945	Private Insurance *n*=102	Self-Pay/ Other *n*=303
Pain Control Method *p*<0.001*	None	629 (15.3%)	430 (16.0%)	140 (21.2%)	197 (20.8%)	22 (21.6%)	83 (27.4%)
	Analgesic medication	576 (14.0%)	302 (11.3%)	114 (17.3%)	209 (22.1%)	25 (24.5%)	65 (21.5%)
	Epidural anesthesia	1,656 (40.2%)	1,195(44.6%)	217 (32.9%)	294 (31.1%)	22 (21.6%)	77 (25.4%)
	Both analgesic medication & epidural anesthesia	1,254 (30.5%)	755 (28.2%)	189 (28.6%)	245 (25.9%)	33 (32.4%)	78 (25.7%)

*Chi Square analysis

Figure 4.5 Pain Control Method by Insurance Type: Total sample



Pain control method also was examined with regard to age for the whole sample as well as the Hispanic group. As seen in Table 4.2, in the Hispanic group, women under 29 used pharmacologic methods and regional anesthesia more frequently than those over 30. The women over 30 chose to use non-pharmacologic methods and intravenous analgesia more frequently than the younger women. This trend was similar to that of the other racial groups in the total sample.

Table 4.2 Pain Control Method by Age: Hispanic Only

Variable	Categories	<20 Years *n*=178	20-29 Years *n*=809	30-39 Years *n*=338	40+ Years *n*=25
Pain Control Method	None	28 (15.7%)	162 (20.0%)	103 (30.5%)	9 (36.0%)
	Analgesic medication	33 (18.5%)	195 (24.1%)	66 (19.5%)	5 (20.0%)
	Epidural anesthesia	60 (33.7%)	243 (30.0%)	85 (25.1%)	5 (20.0%)
	Both analgesic medication & epidural anesthesia	57 (32.0%)	209 (25.8%)	84 (24.9%)	6 (24.0%)

Chi square analysis examined pain control method choices with regard to race, insurance type, and age categories. As seen in Table 4.3, there was a significant difference in pain management method based on racial groups ($p < 0.001$). A greater percentage of women in the Hispanic group and the "Other" racial category chose no pharmacologic method of pain control as compared to Asian, Black/African American, and White racial groups. A higher percentage of Hispanics also chose intravenous analgesic medication rather than regional analgesia/anesthesia or the combination of the two, when compared to all other racial groups. In addition, Blacks/African American and Whites chose the intravenous and regional combination more frequently than all other racial groups.

There was a significant difference in pain management method based on insurance type ($p < 0.001$). Those who were self-pay/other chose no pharmacologic pain management method or intravenous analgesia more frequently than the other pain management choices. There was a higher percentage of those with either public or private insurance who utilized regional analgesia/anesthesia as compared with the self-pay/other group. Trends were similar for all payers with regards to the combination of intravenous and regional analgesia.

There was a significant difference in pain management method based on age (p = 0.001). There was a higher percentage of women over 30 years of age who chose no pharmacologic pain control method than those younger than 30. Those women under 30 years of age used regional analgesia/anesthesia more frequently than those over 30, with women under 20 years of age choosing the combination of intravenous and regional analgesia more frequently than all other age groups. Women ages 20-29 chose intravenous analgesia alone more frequently compared to all other age categories.

Table 4.3 Demographics & Pain Control Method by Race

Variable	Categories	Hispanic *n*=1,350	White *n*=4,034	Black/AA *n*=1,565	Asian *n*=156	Other *n*=352	Total *N*=7,457
Age	<20 years	178 (13.2%)	554 (13.7%)	279 (17.8%)	3 (1.9%)	30 (8.5%)	1,044(14.0%)
p=0.001*	20-29 years	809 (59.9%)	2,114(52.4%)	1,009(64.5%)	66 (42.3%)	172 (48.9%)	4,170(55.9%)
	30-39 years	338 (25.0%)	1,273(31.6%)	257 (16.4%)	77 (49.4%)	143 (40.6%)	2,088(28.0%)
	40+ years	25 (1.9%)	93 (2.3%)	20 (1.3%)	10 (6.4%)	7 (2.0%)	155(2.1%)
Marital	Single	782 (57.9 %)	1,268(33.4%)	1,042(66.6%)	8 (5.1%)	88 (25.0%)	3,188(42.8%)
	Married	422 (31.3%)	2,010(49.8%)	250 (16.0%)	120 (76.9%)	206 (58.5%)	3,008(40.3%)
	Divorced	9 (0.7%)	92 (2.3%)	20 (1.3%)	2 (1.3%)	3 (0.9%)	126 (1.7%)
	Other	137 (6.4%)	664 (16.5%)	253 (16.2%)	26 (16.7%)	55 (15.6%)	1,135(11.4%)
Payer	Public Insurance	945 (70.0%)	1,791(44.4%)	1,146(73.2%)	39 (25.0%)	194 (55.1%)	4,115(55.2%)
p<0.001*	Private Insurance	102 (7.6%)	2,021(50.1%)	345 (22.0%)	97 (25.0%)	117 (33.2%)	2,682(36.0%)
	Self-Pay/Other	303 (22.4%)	222 (5.5%)	74 (4.7%)	20 (12.8%)	41 (11.6%)	660 (8.9%)
Pain Control Method	None	302 (22.4%)	586 (14.5%)	202 (12.9%)	23 (14.7%)	86 (24.4%)	1,199(16.1%)
p<0.001*	Analgesic medication	299 (22.1%)	428 (10.6%)	192 (12.3%)	17 (10.9%)	56 (15.9%)	992(13.3%)
	Regional anesthesia	393 (29.1%)	1,767(43.8%)	689 (44.0%)	77 (49.4%)	142 (40.3%)	3,068(41.1%)
	Both analgesic medication & regional anesthesia	356 (26.4%)	1,253(31.1%)	482 (30.8%)	39 (25.0%)	68 (19.3%)	2,198(29.5%)

* Chi Square analysis

Multinomial logistic regression was conducted to further examine differences, with the variables of race (Hispanic compared with all others), age, and insurance type included in the model. The overall model was significant (AIC = 416.787; $p < 0.001$); however, only 4.8% of the variance was explained by the model (Nagelkerke R^2). A summary of the multinomial logistic regression analysis is shown in Table 4.4. Hispanic women were 1.3 times more likely to use intravenous analgesic pain control rather than no pharmacologic method compared to all other racial groups. Among all racial groups, women under 20 years of age were 2 times more likely to use intravenous analgesia rather than no method compared to all other age groups. Even more significant results were noted with regard to regional analgesia/anesthesia and the combination method.

Hispanic women were significantly less likely to choose either the regional (53%) or the combined (41%) pain management methods as compared to no pharmacologic pain method compared to all other racial groups. Women under the age of 30 in all racial groups were 2 to 4 times more likely to choose either of these methods over no pharmacologic method, as compared to women over 30. In addition, for all racial groups, women who were in the self-pay/other payer category were 37% less likely to use regional analgesia/anesthesia and 24% less likely to choose the combination rather than no pharmacologic method, compared with women who had private insurance.

The overall percent correct classification was 41.4%, which is greater than chance alone. However, the model was only accurate in explaining regional analgesia/anesthesia use (95.5%), whereas the predictive value of no pain control method (8.3%), IV analgesia only (0%), and combination IV and regional analgesia (2.5%) showed percentages much lower. Consequently, the model is useful in predicting regional analgesia/anesthesia use, but not as useful in predicting the other pain control method categories. The number of hours in labor was examined as a covariate; however, the addition of hours in labor did not improve the model, making the model less predictive (data not shown).

Table 4.4 Multinomial Logistic Regression Parameter Estimates

Pain Method	Variable	B	*P*-Value**	Odds Ratio	Confidence Interval
Analgesic Medication	Intercept	-.553	.035		
	race: Hispanic women	.246	.018	1.279	1.042-1.569
	race: all other races*				
	payer: Self-pay/Other	-.128	.425	.880	.643-1.204
	payer: Public insurance	.006	.952	1.006	.819-1.237
	payer: Private insurance*				
	age: < 20 years	.709	.017	2.032	1.138-3.631
	age: 20-29 years	.452	.090	1.571	.932-2.649
	age: 30-39 years	-.039	.886	.962	.567-1.633
	age: 40+ years*				
Regional Anesthesia	Intercept	.502	.018		
	race: Hispanic women	-.754	.000	.471	.393-.564
	race: all other races*				
	payer: Self-pay/Other	-.457	.001	.663	.488-.822
	payer: Public insurance	-.136	.097	.873	.743-1.025
	payer: Private insurance*				
	age: < 20 years	1.334	.000	3.834	2.387-6.158
	age: 20-29 years	.806	.000	2.239	1.462-3.428
	age: 30-39 years	.334	.126	1.397	.910-2.143
	age: 40+ years*				
Both Analgesic Medication & Regional Anesthesia	Intercept	.061	.791		
	race: Hispanic women	-.528	.000	.590	.489-.711
	race: all other races*				
	payer: Self-pay/Other	-.278	.045	.757	.577-.993
	payer: Public insurance	-.059	.498	.943	.795-1.118
	payer: Private insurance*				
	age: < 20 years	1.526	.000	4.600	2.770-7.641
	age: 20-29 years	.840	.000	2.316	1.459-3.677
	age: 30-39 years	.215	.367	1.240	.778-1.977
	age: 40+ years*				

*referent group

**.05 significance level

Phase Two Results

Recruitment

The process for recruitment began with attending the prenatal classes at Winchester Medical Center (WMC). The researcher and Ms. Chinchay attended 3 classes consisting of women that were in their second or third trimester of pregnancy. During the class lunch break, the women were told about the study by Ms. Chinchay, and those who were interested signed a roster, including their phone number and delivery due date, indicating that they were willing to be contacted by the researcher and research assistant later for interviews. A total of 35 women agreed to be contacted to be interviewed after the delivery of their baby.

At least 3 to 4 weeks after their delivery due date, the women were called to set an appointment for an interview in their home or location of their choice. Pre-screening during the phone call was limited to confirming that they did not have a scheduled Cesarean section (C-section) delivery and that they were 18 years or older. Of the women contacted, 3 had gone through a scheduled C-section, so were not scheduled for interviews. Fifteen of the women were not scheduled for interviews because of a change in phone number, no answer with repeated calls, or a message was left with no response. The remaining 17 women were interviewed in their homes or a location convenient for them. Consent was provided at the time of the interview. Some women attempted to make referrals to other interested women who had recently given birth, but none of those referrals generated an interview.

Of the 17 women interviewed, 30% were from Central American countries, and 70% were from Mexico. Despite the subjects being from different countries, there did not appear to be a significant differences in the responses based on country of origin. All of the women were first generation immigrants who had been in the U.S. from 1 ½ to 25 years. Four of the women had just had their first baby, while the others had multiple children. However, the connection between parity and pain management choices was not explored with this dataset. The women's ages ranged from 24-43 years, and only one woman had previously given birth outside the U.S. (in Mexico). For their most recent childbirth experiences, the women had all given birth at a local hospital, under the care of a physician. All of the participants had attended prenatal classes and received prenatal care throughout their pregnancy. Specific demographic information for the participants is shown in Table 4.5.

Table 4.5 Qualitative Subject Demographics

Subject #	Age	Marital	Gravida Para	Country of origin	Years in U.S.
1	37	M	G4 P4	Mexico	14
2	29	M	G4 P4	Mexico	9
3	28	M	G2 P2	Mexico	7.5
4	25	S	G2 P2	Mexico	8
5	38	S	G4 P3	Central America	20
6	34	M	G3 P3	Central America	13
7	34	S	G2 P2	Mexico	12
8	31	S	G2 P2	Mexico	13
9	43	M	G3 P3	Mexico	17
10	25	M	G2 P1	Mexico	2.5
11	39	S	G1 P1	Mexico	9.5
12	36	S	G3 P3	Central America	15
13	30	M	G3 P3	Mexico	7
14	43	M	G7 P3	Central America	25
15	24	S	G3 P2	Mexico	9
16	27	S	G1 P1	Mexico	1.5
17	26	S	G1 p1	Central America	16

Results

The overarching theme noted during the interviews was that childbirth is something that should be experienced fully and be as natural as possible, whether the experience is taking place in a hospital or at home, with a doctor or midwife. The more one can experience every aspect of the birth process, the better the outcome and the healthier the baby. Four main themes supported this primary theme and were (1) pain as a childbirth rite of passage, (2) bravery shapes personal agency, (3) cultural mystery, and (4) communicating quality care. As a part of the experience of childbirth, pain is seen as a rite of passage into motherhood, and is part of the ideal labor process that involves minimal intervention. Cultural influences guide many of the beliefs surrounding childbirth and child rearing, and shape the decision making for these women, despite the mystery surrounding the process. Bravery and feeling in control of the body during labor was valued and talked of frequently by the women. Culture is an

enormous part of the event, and the women talked about a lack of understanding of their cultural influences and communication issues as interfering with quality of care.

Pain: a childbirth rite of passage. Childbirth is seen by these women as a beautiful, natural process, and it should be felt fully by the woman, even though it is painful. The pain of the labor process is viewed as a battle that must be overcome, and the woman is seen as a strong, brave woman if she can "endure the pain." The participants spoke of having "courage," enduring or "bearing" the pain, and that doing so showed bravery. Some related that their family or partner praised them for being strong after they went through labor without pain medication or anesthesia and it was seen as a successful labor.

Others reported that the greater the pain, the more natural the labor and they felt that the baby would be healthier if their pain was more intense. Those that did use pain medicine or anesthesia often talked about their labor as a failed process because they could not endure the pain. One participant talked of the medical interventions needed for her labor and how she utilized medication and stated, "All was done and failed," when referring to how she felt about her childbirth experience. Another talked about the encouragement and advice from her mother, stating "she told me….to have courage, she'll tell me that when it is about to be born, you have to have lots of strength my darling, so that the baby will be born, because it is going to be born no matter what, it has to come out, because of you."

The participants discussed ways to cope with childbirth pain, taught to them by their family or that they learned from the prenatal education classes. Methods used included meditation, walking, swaying, and deep breathing exercises. Several women talked about simply finding a way to relax and be brave. If one relaxed, then the pain would be bearable. In addition, focusing on the end result helped women cope with the pain of labor. There was much emphasis on the reward of a healthy baby and that the pain would be forgotten once the child was delivered. Women related that the sacrifice of physical pain was minimal to the reward of having a healthy child, and that overcoming the pain without medication is what is valued and allows a complete childbirth experience. One woman stated, "I wanted to feel my first labor. I didn't want to be numb and I didn't want my baby to come out numb either." Another subject related that the way she dealt with the pain was to keep thinking about how she "wanted to experience the pain of having a child. And I wanted to know what it feels to have a baby." Focusing on the end result was a common theme repeated by the participants, as one woman stated that withstanding the pain of labor "was for a good

cause and she [the baby] was going to be here with me and that is what gave me strength." This desire to feel all aspects of the labor and the focus on the reward were the cornerstones of an ideal birth experience for these women.

Bravery shapes personal agency. According to the participants, a "normal" birth for Hispanic women meant a vaginal delivery, with as little medical intervention as possible and without using medication or anesthesia for pain control. If the process did not follow this pattern, it was seen as a failure, even with positive health outcomes for mother and baby. A "normal" birth also was described as one where the woman had control of her body and her actions. Because the act of childbirth was seen as a battle to be won by the woman, she needed all her strength and abilities intact to perform this feat. If she could not perform to her best ability, that contributed to the failure of the event. Women talked of being embarrassed because they could not feel what they were doing when they had an epidural and they were upset at not being able to control the lower part of their body. One participant talked of her experience during the pushing phase of her labor saying, "then I said to myself, I'm going to cover my face, I'm going to push hard. It was embarrassing. But when you are under anesthesia you can feel almost nothing, is like your feet are numbed, you know. So, this time I'm going to push hard so that they will not be looking at me."

The women interviewed also were concerned about the effects of intravenous (IV) medications on their ability to perform. Because the IV medications made them sleepy and not fully aware of their actions, it altered their sense of control and agency. While many felt that IV analgesics were more acceptable than epidurals, they felt the lack of control of their actions was not ideal and also constituted some form of failure. On woman related her perception of the pain associated with childbirth and her view on medications saying,

> ….in my case I felt like the more pain, the more natural it is. Yes, the pains come and then it is out already! When the moment of the childbearing comes, the pains get stronger, stronger, and stronger and, that's it! …I was already 8 centimeters dilated when they gave me the medicine [IV analgesia] but it only made me dizzy and this is the only effect it had on me…all it did was make me sleep, I was knocked out.

This need to carry out the tasks of the labor process effectively, and embarrassment with the lack of control and functional ability, contributed to the women's views on analgesic medication and epidural analgesia. While there was

variance among the participant's use of analgesic medication and/or epidurals, their ideas about these interventions were very similar. Of the women interviewed, 47% used epidural analgesia, and 24% used IV pain medications. The epidural usage rate for this qualitative sample was fairly close to the 55.5% seen in the phase one quantitative sample. Despite the fact that almost half of the women interviewed used epidural analgesia, all 17 of the women interviewed said they feared permanent back pain from this intervention. This statement was the most universal, as every participant related this in some form, whether they heard it from friends, family, their community, or they had a negative experience with epidural use in the past. One woman, when asked about the views of the Hispanic community on epidurals stated, "they say if you get an epidural, you always have that small risk of having—getting your back hurt." In addition, many of the women expressed fear that the epidural would cause some harm to the baby, but the overall feeling was that enduring the pain and having courage was the ideal. One participant talked of advice for other women and shared, "I will suggest to women to be brave, that's all, to be brave to have their babies and to relax and that's how the baby gets birth, and that's what makes you not feel so much pain and to think of the baby, that he is coming."

The participants shared a belief that while the ideal is to have an un-medicated birthing experience, IV medications and epidurals were acceptable in certain situations, despite the fears associated with these methods. Many felt that when they were offered an epidural, that meant they were destined for a C-section, or there were labor complications. This is similar to findings from other qualitative studies in Guatemala, where women believed that there were problems with the childbirth progress if an epidural was offered (Callister et al., 2003). The women interviewed for this study did not express any feeling of coercion to accept the epidural, but felt that if the labor was not "normal," if there were any complications, they should get the epidural because they may have a C-section. They also related that in the case of emergencies or potential complications for the baby, an epidural was acceptable. One participant stated, "I didn't want them to put the medicine in my back, but…it was due to circumstances, we did what was best for the baby." The collectivist nature of the Hispanic culture was apparent in the women's admonitions that the baby's well-being is the most important factor, and a "normal" labor experience can be forgone in light of safety for the baby.

Cultural mystery. The influence of culture was reported as playing a prominent role for Hispanic women with regard to childbirth and child rearing practices. Women reported getting a great deal of advice from their mothers and other female relatives during pregnancy, and felt they should be obedient and follow the advice of their relatives. Again, these women did not relate a sense of coercion; they felt they always had autonomy in their decision making process, but the influence of cultural norms was a strong part of this process. The knowledge of their mother and female relative's experience influenced this as well.

Most of the women reported that their mother gave birth at home with a midwife in their native country. They also related that their mothers did not use pain medication, and that the other children were often taken to a neighbor or relative while their mother was giving birth, so the process was somewhat of a mystery to some of the participants before they had their own experience. One woman talked about the mystery and that all the children thought "it was a clay belly and then they take the child out. I mean, I didn't know that it was like this...they…send us to other people, when one goes to see their mother, she already sees her with the baby." This mystery, along with the stoicism shown by their mothers, added to the women feeling as though their labor should have as little interference from medical interventions, or they had failed.

Some of the women talked about the prenatal classes and stated that Hispanic women did not like to go to the classes as they get enough advice and information from their family. Even though they get plenty of instructions on what they should and shouldn't do during pregnancy, the women still related that there was limited information about the actual events of childbirth given by their families. One woman stated, "when you are pregnant…you ignore everything except what your parents tell you…'girl, do not do this, do not eat this, don't you damage…so the baby is born healthy'…we are obedient." Although there is much advice given about pregnancy care and rules, little is said about the actual labor and delivery process, leaving women to enter into childbirth with a lack of knowledge of the process. Another woman related, "my family doesn't get involved in personal opinions when someone is pregnant. They tell you what to do during the pregnancy but about the pain they don't." Many others related similar statements, sharing that they did not get information about the actual birth from their families, which perpetuated the mystery surrounding the process.

Despite this belief that Hispanic women do not want to attend prenatal classes, almost all the women related that they learned something from the health educator and

that attendance was worth it. The women felt they learned much about breastfeeding and child care, but did not state that the education classes or the prenatal visits increased their knowledge of the labor and birth process, or their understanding of labor pain management. Breastfeeding was reported as being valued in the Hispanic culture, with some caveats. All of the women who were breastfeeding stated that the milk was not sufficient and they needed to supplement with formula. They reported that this advice came from their family and was a common practice in their culture. Many also reported feeling embarrassed if they had to breastfeed in public. Most were pleased with the care that they received in the hospital, and pediatric care for their baby, highlighting the differences between health care here in the U.S. compared to their native country.

Communicating quality care. Overall, the response during the interviews was positive when discussing the quality of care and how the women felt about the care they received in the hospital. Some discussed financial issues as a potential problem, but the majority of the financial dialogue was in support of the insurance system and public insurance. They felt strongly that insurance was important to the financial well-being of the family, especially the children, and one crucial key to accessing quality health care. One woman stated, "Well, I think that all children should have insurance. Yes, because it is too expensive, very, very expensive and we the poor people don't have the right to get sick because without insurance then we can't eat for two days for having to pay the doctor." Without insurance, health care would not be available to them. In addition, language issues were a frequent topic of conversation surrounding quality care.

The women interviewed felt that their limited English proficiency hindered their ability to have their needs met during their birthing experiences, and this topic was mentioned by most of the subjects as an issue for Hispanic immigrants. However, if there were adequate interpreter services available for their hospital stay, that was touted as one of the most positive and memorable aspects of their labor experience. Two facets of language barriers were prominent in these interviews. One was the notion that without the ability to explain their needs and wishes adequately, women accept the suggestions of the medical staff without question, as they didn't know how to express their needs or communicate their need for understanding of their options. One woman, who was able to communicate well in English said, "I don't know how it is with people that don't speak enough English, but to me it helps me a lot, because if there's nobody to help you and you can't express what you feel, how you feel, what

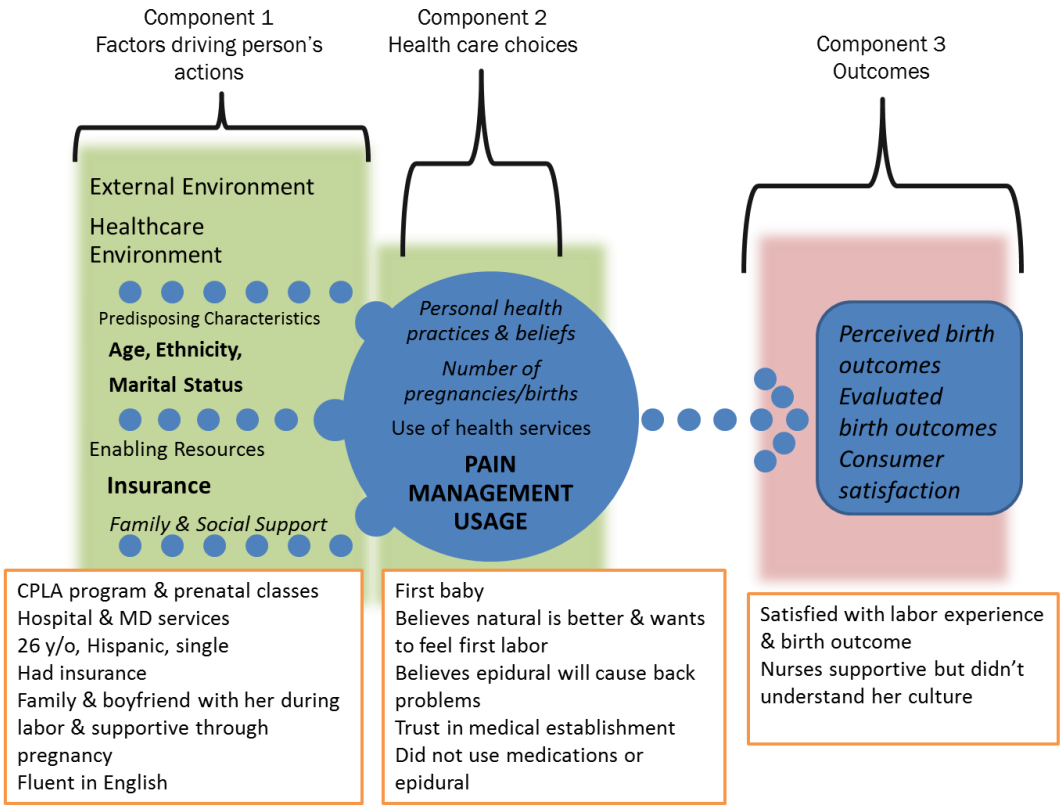
your desires are and what you want, then you say well, they're the experts, they know, they should know and I just obey."

The other aspect of language mentioned dealt with the medical jargon and the level of language proficiency. Those with limited English proficiency have more trouble with complicated terms and medical jargon than those who are native English speakers. One of the participants talked about a nurse who seemed frustrated with her when trying to communicate about her care. The woman, who spoke some English, felt that she could have understood if the nurse had used more simple terms that were in her limited English vocabulary and stated, "you know, you can say it the same thing with different words a little less sophisticated for someone whose first language is not English." She felt that a little attention to the vocabulary used would have made an enormous difference in her ability to communicate with the nurse caring for her.

Despite these issues with language, the majority of the women interviewed praised the quality of care in the U.S. as opposed to Mexico (where most of the interviewees were from). Many described the access to medical care in Mexico as limited, and that because the hospitals are over-crowded, laboring women are not admitted until 8 cm dilation, so they labor at home and sometimes with no one attending them. They also related a lack of pediatric services in Mexico, and talked about the benefits of available pediatric care here in the U.S. One woman stated, "Well let me tell you that over here I receive more help, more medicines, more care than over there [Mexico]." Overall, the perception of the women was that the care in the U.S. was adequate, sometimes better, than in their native country, even with the language and cultural differences as barriers. For the most part they feel they were treated with respect, as one participant said, "I don't know if they understand our culture well, but they treated me well."

Case example. When analyzing the results, data was scrutinized within the theoretical framework of Andersen's model as discussed in Chapter 2. Figure 4.6 outlines one subject's specifics in the context of Andersen's Behavioral Model of Health Services Use.

Figure 4.6 Case example



Adapted from Andersen's Behavioral Model of Health Services Use, phase 4 (Anderson, 1995)

In this case example, the woman was satisfied with her birth experience overall, however, she felt that the nurses still did not understand where she was coming from or how her culture affected her decision making process. She related that family played a large role in advising her on her childbirth decisions and that this process was often guided by the consensus of the family. While there was much input from family for this woman, she still felt as though the final decision was hers when it came to medical decisions, yet she continued to refer to family advice as a large influence and there was a sense that there would be disappointment in her if she made decisions outside the family's recommendations. This scenario was repeated in many of the subjects' stories, and emphasizes the collectivist nature of this society and the influence the family has on Hispanic women. It also speaks to the sense these women have of being compelled to make decisions based on how it will impact others and not just herself and her baby.

Chapter 5: Discussion

Discussion of Results

Results of this study illustrate several components shaping the choices Hispanic women make for pain management during labor. While data for the quantitative and qualitative portions were gathered from different subjects in different health care facilities, there are aspects of the results from each that support one another and move nursing science forward in regards to childbirth pain management with Hispanic women. The quantitative analysis showed that Hispanic women were more likely to either use IV medications or no pharmacologic treatment than all other races. In addition, their use of regional analgesia (i.e. epidural analgesia/anesthesia) was less than all other races. These quantitative findings are supported by the qualitative findings. The information gathered in the qualitative interviews regarding the women's feelings about medication and anesthesia use, gives insight into the fact that pain management is a choice, and agrees with what was seen in the quantitative phase.

The impetus for the Hispanic women interviewed to choose to forgo regional analgesia is that pain should be felt to experience the childbirth event fully, along with the fear of complications from epidural use. The women interviewed wanted to feel the birth and have control of their bodies during the process, thus epidurals were not the ideal choice for them. The fear of problems resulting from epidural use was still prominent, even in women who had an epidural and did not experience complications from it. The lack of knowledge about pain management options and their safety and efficacy also was a factor that was influenced by language barriers and low English literacy issues. These dynamics, along with the strong cultural influence from the family, offer some explanation of the quantitative results that Hispanic women used regional analgesia less often than other races.

Labor pain is a unique entity in the realm of pain management, in that a successful outcome does not always involve elimination of childbirth pain. The qualitative findings from this study support that a woman's knowledge of the labor process, her misconceptions about treatment, concerns for safety, and cultural influences significantly affect her decisions regarding how she wants to manage pain control during labor. When there are cultural differences between patients and providers, as is often the case with Hispanic women in the U.S. being cared for in the inpatient obstetric setting, these factors need to be considered. While researchers note that there are still gaps in our knowledge of patient factors for epidural use, such as

cultural and family beliefs, preferences, and other influences (Green, 2007), few studies have examined these factors in depth. Toledo (2013) also found women had concerns about epidural anesthesia during childbirth, highlighting the belief by Hispanic women that they fear back pain with epidural use. However, a unique contribution of the current study is that it is the first to show that Hispanic women use more IV analgesic medications to control childbirth pain, opposed to using regional analgesia/anesthesia.

To determine if there was a true disparity among women who received epidural anesthesia, multinomial logistic regression (MLR) was conducted to determine the impact of age, race, and insurance status on epidural use. As described in the results, there were significant differences in this usage by race. Age also was a significant predictor of pain medication use for Hispanic women, with those 20 years of age or less using more regional analgesia/anesthesia. Type of insurance, however, was not a significant predictor. The model was only successful at predicting usage of epidurals (95.5% accuracy), where the other pain control methods (none, IV medications, or combination epidural and IV medications) had successful prediction rates from 0% to 8.3% only. While the overall model explained 4.8% of the variance in pain control method choices, there is still 95.2% of the variance that was not explained by the factors of age, race, and insurance payer, but could be attributed to a variety of other variables not available in the data used in this study. Some of these variables include parity, amount of family support present, previous experiences with labor and prenatal care, language proficiency, and acculturation. As seen in the qualitative interviews, another variable which influences women's choices for pain control is their knowledge, or lack thereof, about the birthing process and what to expect; information which also was not available in the dataset analyzed for this study.

Many of the pain management influences were unable to be assessed in the dataset used for phase one; however, some elements of influence over decision making were revealed in the qualitative interviews in phase two of this study. The results of the qualitative interviews showed that cultural and family factors had a large impact on childbirth decision making. In addition, communication with health care providers and misconceptions about safety and efficacy of procedures exerted a substantial influence. There is even some indication that historical influences, as far back as the 16th century in Mexico and Central America have some effect on Hispanic women's beliefs surrounding childbirth and child rearing. The women's references to bravery and strength in the interviews have connections as far back as the Aztec empire, when labor was seen as a battle. This ancient society believed the woman who endured childbirth was a warrior,

and the midwife attending gave out a war cry at the moment of birth, signaling the woman's triumph (de Sahagún, Anderson, & Dibble, 1950; 1982). [see Appendix B for a more detailed account of Aztec childbirth practices]. Much of the language the participants used to describe the pain and process of childbirth evoked this sense of being a warrior in battle when enduring childbirth and the victory that followed a successful delivery.

The strong cultural influences guiding these women, misconceptions about services and procedures, along with communication issues, are the true disparities in care, highlighting the need for patient education, as well as improved culturally competent and compassionate care by clinicians involving enhancement of dialogue about labor pain management decisions. The mystery perpetuated in this culture surrounding the childbirth process prompts Hispanic women to adhere to practices and beliefs for which they may or may not have a rationale. To increase the cultural understanding of health care providers, as well as childbirth knowledge for Hispanic women, collaboration is needed between doctors or midwives, nurses, and the women being cared for. One way to achieve this is through health care provider mindfulness and awareness of the cultural and communication issues these women face, as well as culturally appropriate education for the patients about options for labor pain management. While this education can be done in the prenatal clinic setting, often the first encounter with Hispanic women in the U.S. health care system is when they are admitted to the inpatient obstetric unit for labor and delivery care, creating a need for on-site education or collaboration in the intrapartum setting. In addition, based on the reluctance of Hispanic women to attend prenatal classes spoken of by participants in the interviews, future educational programs for this marginalized group should consider following Winchester Medical Center's example of providing educational events marketed as fiestas or celebrations. These events will not only provide educational material in a culturally constructive manner, but occasions like these could provide social support for these women as well.

Some limitations to the data are noted in both phases of this study. In the quantitative phase one, the use of billing data was a significant limitation. This characteristic of the clinical data repository data limited the variables retrieved, as well as the method of retrieval. The parity of the women was not available using this data retrieval method, as well as information on any complications or pre-existing medical conditions that would have been obtainable through the detailed medical record information. The country of origin for the Hispanic women in the sample was not

available, nor any information on acculturation. In addition, the use of billing codes and charges for medications used limits the precision with which information was gathered in this dataset. Coding methods vary based on the physician, insurance, time period, and the proficiency of the person entering the data at the time of service. While great care and time was taken to ensure that these variables were addressed, there is still an element of limitation resulting from these factors. The demographics of the sample were also considered a limitation as well as a strength. While the Hispanic population of the sample was close to the national level, the other racial groups were not represented in the same percentages as national statistics which may affect results when comparing Hispanics to other ethnicities.

There also were limitations involving data management. When removing subjects from the analysis for whom no recovery hours had been recorded, those women who stayed on the labor and delivery unit for their entire recovery were lost in the statistical analysis. Women do not often stay on the labor and delivery unit for their entire hospital stay, but there was no effective way to determine how many subjects who actually gave birth were eliminated in this phase of data cleaning. Because the total number of women removed from analysis in this step was less than 10% of the original sample size, the impact from this discrepancy was considered minimal.

Limitations with the qualitative phase two data were based on the homogeneity of the sample as well as the facilities the subjects were recruited from. The homogeneity of the sample could be viewed as a limitation as well as a strength. The cultural heritage of the women involved 70% who were from Mexico, and the remaining 30% from Central America, limiting the variety of experiences from the native countries of the participants. All of the subjects gave birth in the same hospital and had similar experiences through the prenatal education and care program from which they were recruited. These factors limited the variety of experiences and cultural backgrounds inherent in the women's narratives, yet also contributed to adequate data saturation with the 17 subjects being interviewed. Another strength related to the homogeneity involves the confidence level of the data obtained in the interviews. There is increased confidence in the accuracy of the themes generated from the interview data with this homogenous population. The samples for the quantitative and qualitative analysis were obtained from two different facilities, which can also be viewed as a limitation of this study. However, similarities were that both samples were taken from large tertiary care facilities in the same state, and all of the subjects from both gave birth on the inpatient unit under the care of a physician. It does need noting that all of the subjects were

enrolled in the CPLA program, therefore receiving significant prenatal medical and educational support, which may have influenced their decisions for labor management compared to women who did not have these services available. Even with these limitations, the data obtained have a significant contribution to the literature on this topic.

In conducting this study, there was a risk of recruitment issues during Phase 2 as were mentioned in Chapter 2. Consequently, when recruiting participants for the qualitative phase of this study, a Hispanic, bilingual obstetric nurse was enlisted for collaboration. Care was taken to use non-threatening study descriptors in the event of legal concerns, as well as direct contact recruitment tactics to enhance participation numbers. As stated in Chapter 2, many of the women targeted for this study may not have adequate health care coverage, as well as having a language or literacy barrier with regard to informed consent. Care was taken during recruitment to ensure that participants understood that no health care services would be delivered through participation in this study. In addition it was made clear that their care at the clinic would not be affected by participation, or the lack thereof, in this dissertation study. To address the language and literacy issue, consent for the qualitative phase was available in both Spanish and English, and at the appropriate literacy level for the general public. In addition, to overcome outsider concerns with this population, a bilingual study nurse with ties to the local Hispanic community was employed to facilitate trust and further alleviate any language or cultural barriers in conducting the interviews.

The strengths of this study are that it includes evaluation of the additional variable of IV pain medication usage, and it is a more accurate representation of U.S. population demographics, as many previous studies have been implemented in areas resulting in less racial diversity in their sample. Results from these studies do not accurately portray racial distribution in the U.S., or adequately represent the Hispanic community's population statistics (Glance et al., 2007; Harkins, 2010; Rust et al., 2004). In addition, the qualitative results in this research study shed light on the reasoning behind some of the decisions made by Hispanic women, highlighting the fact that the differences noted in epidural usage may not be a disparity related solely to discriminatory factors. While there are issues with communication between Hispanic women and health care providers that contribute to inequities in care, the misconceptions about epidural safety and efficacy, as well as strong cultural influences, also prompt Hispanic women to choose alternative methods of pain management, such as IV analgesic medications.

If health care providers are able to acknowledge and respect cultural beliefs unique to this population, as well as assist Hispanic women to understand the options available to them, it will go a long way toward bridging the gap between differing perspectives on health care during childbirth. This understanding between health care providers and patients can lead to advances in shared decision making that can improve not only outcomes for mothers and babies, but enhance Hispanic women's experiences of childbirth care in the U.S. To address this need in the inpatient setting, education of health care providers is needed along with a shared decision-making tool that can be utilized with this population.

Conclusions

The findings of this study indicate a need for shared decision making between obstetric care providers and Hispanic women, with culturally appropriate communication about the management of childbirth pain. The culture of childbirth care in the U.S. is often based on the physician having a large influence on women's decision making in the inpatient setting, especially for Hispanic women struggling with comprehension of their options from either language difficulties or cultural preconceptions, making collaborative decisions between provider and patient even more challenging.

The process of shared decision making is one of an interactive partnership between patient and health care provider. This practice involves acknowledgement of patient preferences, outlining options and choices available, discussion of concerns about options, and development of a mutually respectful partnership between the two in which responsibility for agreed upon decisions is shared (Glass et al., 2012; Stiggelbout et al., 2012). A collaborative decision-making process that is easily understandable, despite language and cultural differences between parties, is essential for enhancing the quality of care for this population. In many settings, this is done through decision aid tools; however, the tools can often be costly to develop and complex, requiring considerable time for patients to complete involving a high level of literacy as well as health care literacy (Marrin et al., 2013). The benefits of collaboration along with a practical tool that is usable in the inpatient setting will facilitate development of increased patient self-efficacy and participation by patients in their own care decisions (Stiggelbout et al., 2012).

The childbirth process is one of the areas of health care where there are many options for care management, and there is not always a right or wrong choice for many

clinical decisions, making this an ideal setting for shared decision making to deal with "preference-sensitive decisions" (Adams, 2012). Preference-sensitive decisions refer to those where there is no correct or incorrect option, and opting not to act is acceptable as well, as long as the patient's inclinations, along with collaboration from the health care provider, are part of the equation (Adams, 2012; Stiggelbout et al., 2012).

An alternative to traditional decision aid tools that has gained recent popularity is the option grid. Option grids are short, one-page tools that succinctly convey treatment options along with probability statements about benefits and harms associated with those options, and are presented in the form of frequently asked questions (FAQs), making the tool more understandable for patients (Marrin et al., 2013; Stiggelbout et al., 2012). The purpose of decision tools has been to increase the patient's knowledge of options as well as decrease his/her anxiety (Dugas et al., 2012). Yet, if the tool is too complex or not easily implemented in the inpatient obstetric setting, it may increase anxiety in patients and not fulfill the need of facilitating health care decision making between patients and health care providers. In this respect, option grids that are culturally appropriate, may be able to accomplish the goal of educating Hispanic women about labor pain management options as well as guiding the health care provider down a pathway to collaborative decision making with Hispanic laboring women, decreasing the patient and family's anxiety and fears about the childbirth process and pain control decisions.

Implications

Clinical Practice and Nursing Care

This study has important implications for nursing practice involving awareness of the cultural and educational differences of the patients encountered in the obstetric setting, and adapting the nursing process, as well as the medical model of care, to the individual needs of women during the childbirth process. With the growth of the Hispanic population in the U.S. over the last decade, this need for culturally competent and compassionate care for Hispanic women in labor is becoming a necessary skill for all health care providers in this setting. Education for obstetric nurses, doctors, and midwives on the cultural differences and unique challenges of this population is needed, as well as development of a culturally appropriate, evidenced-based decision tool to facilitate shared decision making for labor pain management.

Training for inpatient obstetric care providers can be implemented in a variety of ways, with further research needed to determine the knowledge base obstetric health care providers have of the Hispanic childbirth prior to launching cultural competence education programs. Implementing training about cultural needs and challenges, along with the integration of an option grid for labor pain management decisions, is a first step to improve the care and experience for Hispanic women in the U.S. being cared for in the inpatient obstetric environment.

The movement to incorporate evidenced-based practice with shared decision making is receiving more discussion in the literature and more support clinically (Stiggelbout et al., 2012). An option grid accomplishes this by facilitating discussion between providers and patients, while conveying evidenced-based knowledge about risks and benefits of the different pain management options to those patients (Stiggelbout et al., 2012). For example, questions like 'what does the treatment/procedure involve? 'how will this affect my labor and my baby?' 'what risks are involved?' could be included in an option grid for labor pain management. Information about IV medications, epidural anesthesia, as well as labor without these options can be incorporated into this decision tool.

Developing an option grid tool for use in the clinical setting will require partnership with the Option Grid Collaborative which is based in the U.K. and involves assignment to a development group. This group will involve a team of editors, clinicians, and patients who collaborate on the development process (Elwyn, 2013). The tool will need to be developed prior to educational interventions, to implement these as a combined intervention for health care practitioners. Development of this tool for the Hispanic population will require the additional research component of cultural relevance and appropriateness, as well as the use of this tool for those with limited English proficiency or low literacy level. The Option Grid Collaborative has been contacted by the researcher to begin this process of developing a tool that is accessible and effective at facilitating shared decision making regarding labor pain management options.

Policy

At the institutional level, there are a number of policy implications to be examined. The first is to look at the policy on pain management in a variety of tertiary care institutions and how that policy is implemented in the inpatient obstetric setting. With the recent initiatives that have been enacted by congress and the NIH placing

adequate pain management as well as elimination of health care disparities for minorities at the forefront, it is necessary to investigate how inpatient facilities have implemented these policies within the hospital, as well as looking at the way these policies are dealt with in obstetrics.

As previously discussed, the goals for pain management in labor and delivery are very different, for many women, than other types of pain control needs seen in the hospital setting. How hospitals have adapted national pain guidelines to inpatient obstetric care will need to be examined as well as the current implementation of these guidelines. In addition, the cultural component enacted within these pain management guidelines to address health care disparities will need to be explored, also looking at the integration of these two components with the uniqueness of childbirth pain management needs. Research on these policies will need to be conducted to determine any need for policy changes or implementation within institutions.

Within the community, there are further implications for practice and education. The Community Prenatal and Language Access (CPLA) program that is currently being implemented in Winchester is a model of culturally effective health education, as well as an affordable way for Hispanic women to access prenatal care and education. This program addresses not only cultural and language barriers, but financial barriers as well, improving outcomes for Hispanic women and their infants during the perinatal period. Additionally, the program provides a social network and support system for these women, which is highly valued in this culture as discussed in Chapter 2. Expanding this program to encompass other regions in the state would be beneficial for the Hispanic community in Virginia. Research into how this program could be adapted to central Virginia or other areas could be done, to ascertain the need for services such as this and the feasibility of implementation.

At the national level, research can be done to explore access to prenatal care and prenatal education in the U.S., and how that affects decision making in the perinatal period. Examination of how implementation of the Affordable Care Act affects access for Hispanic women and prenatal care needs to be conducted. Women who were interviewed for this study related that insurance and financial security were important factors in health care access, so research into how the new health care laws are affecting immigrant families will be crucial in the next few years, with prenatal and intrapartum care and education playing a large role in quality health care.

Globally, the development of an option grid for use in the intrapartum setting will be beneficial for women in many areas. The Option Grid Collaborative team works not only in the U.S., but in the U.K. as well. Once this tool is developed, it will be available to the international community, and may be translated to other languages in addition to English and Spanish. The option grid tool also can be implemented locally at UVa, as the researcher can provide educational sessions to the obstetric health care providers there, as well as teaching on the tool and its use in the intrapartum setting.

Future Research

The first priority for further research is to develop a quasi-replication of this study that would broaden the scope of the data available. Retrieving the quantitative data through billing records was a method that limited the variables available, and the quantitative sample subjects were not the same as the qualitative sample pool. To improve the methods and strength of this study, a prospective study could be developed where the quantitative and qualitative data were collected from the same women who would be recruited during pregnancy and followed through to postpartum, to gain more insight into the research questions from this study, and improve the strength of the quantitative and qualitative merging of data.

Another area for future research as a result of this study is to evaluate the efficacy of development of an option grid to be tested in the clinical setting. As stated, development of this tool will be done in collaboration with the founding organization of option grids, and will require more research and testing to ensure validity and reliability of the instrument, as well as testing the cultural appropriateness of the tool with the Hispanic population. Once the instrument is developed, further qualitative research will need to be done to determine the knowledge base of clinicians (MD's, midwives, and nurses) regarding the Hispanic community and their cultural influences. Gaps in clinicians' knowledge will then guide development of the educational program for obstetric health care providers, with the integration of the option grid tool for labor pain management shared decision making.

References

Adams, J. R. (2012). Communicating with physicians about medical decisions: A reluctance to disagree. *Archives of Internal Medicine (1960), 172*(15), 1184.

American College of Obstetricians and Gynecologists, Committee on Obstetric Practice. (2004). Committee Opinion on Pain Relief During Labor in conjunction with the American Society of Anesthesiologists, reaffirmed in 2008. Retrieved from http://www.acog.org/~/media/Committee%20Opinions/Committee%20on%20Obstetric%20Practice/co295.pdf?dmc=1&ts=20140317T1614538995 on 3/10/14.

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior, 36*(1), pp. 1-10.

Andrews, M. M., & Boyle, J. S. (2008). *Transcultural concepts in nursing care.* Wolters Kluwer Health.

Ardren, T. (2008). Studies of gender in the pre-Hispanic Americas. *Journal of Archaeological Research, 16*(1), 1-35. doi:10.1007/s10814-007-9016-9.

Atherton, M. J., Feeg, V. D., & El-Adham, A. F. (2004). Race, ethnicity, and insurance as determinants of epidural use: Analysis of a national sample survey. *Nursing Economics, 22*(1), 6-13.

Becker, M. H., Don P. Haefner, Kasl, S. V., Kirscht, J. P., Maiman, L. A., & Rosenstock, I. M. (1977). Selected psychosocial models and correlates of individual health-related behaviors. *Medical Care, 15*(5, Supplement: Issues in Promoting Health Committee Reports of the Medical Sociology Section of the American Sociological Association), pp. 27-46.

Berk, M. L., Schur, C. L., Chavez, L. R., & Frankel, M. (2000). Health care use among undocumented Latino immigrants. *Health Affairs, 19*(4), 51-64. doi:10.1377/hlthaff.19.4.51

Biceaga, V. (2010). *The concept of passivity in Husserl's phenomenology.* Springer.

Borrero, S. E. (1992). *Hispanic immigrant mothers: Acculturation, supports, and stress*

Caliendo, S. M., & McIlwain, C. D. (2011). *The Routledge companion to race and ethnicity*. London ;New York: Routledge.

Callister, L., & Khalaf, I. (2010). Spirituality in childbearing women. *Journal of Perinatal Education, 19*(2), 16-24. doi:10.1624/105812410X495514.

Callister, L. C., Corbett, C., Reed, S., Tomao, C., & Thornton, K. G. (2010). Giving birth the voices of Ecuadorian women. *Journal of Perinatal & Neonatal Nursing, 24*(2), 146-154. doi:10.1097/JPN.0b013e3181db2dda.

Callister, L. C., Khalaf, I., Semenic, S., Kartchner, R., & Vehvilainen-Julkunen, K. (2003). The pain of childbirth: Perceptions of culturally diverse women. *Pain Management Nursing, 4*(4), 145-154. doi:DOI: 10.1016/S1524-9042(03)00028-6.

Calvillo, E. R., & Flaskerud, J. H. (1991). Review of literature on culture and pain of adults with focus on Mexican-Americans. *Journal of Transcultural Nursing, 2*(2), 16-23.

Carlton, T., Callister, L. C., & Stoneman, E. (2005). Decision making in laboring women: Ethical issues for perinatal nurses. *Journal of Perinatal & Neonatal Nursing, 19*(2), 145-154.

Chong, Nilda (2002). *The Latino Patient*. Yarmouth, ME: Intercultural Press.

Coe, M., & Koontz, R. (2002). Mexico from the Olmecs to the Aztecs.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155-159.

Cooper, R. (2013). In Milburn J. (Ed.), *Coding & billing discussion.*

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Culnan. (1993). "How did they get my name?" An exploratory investigation of consumer attitudes toward secondary information use. *MIS Quarterly, 17*(3), 341-363.

Darby, S. B. (2007). Pre- and perinatal care of Hispanic families: Implications for nurses. *Nursing for Women's Health, 11*(2), 160-169. doi:10.1111/j.1751-486X.2007.00131.x

Davidhizar, R., & Giger, J. N. (2004). A review of the literature on care of clients in pain who are culturally diverse. *International Nursing Review, 51*(1), 47-55. doi:10.1111/j.1466-7657.2003.00208.x

de Sahagún, B., Anderson, A. J. O., & Dibble, C. E. (1950; 1982). *General history of the things of new Spain: Florentine codex* [Historia general de las cosas de Nueva España. English & Aztec]. Santa Fe, N.M.: School of American Research ;Salt Lake City, Utah.

Declercq, E. R., Sakala, C., Corry, M. P., & Applebaum, S. (2006). Listening to mothers II. *New York: Childbirth Connection.*

Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research* (3rd ed.). Thousand Oaks: Sage Publications.

Doyle, L., Brady, A., & Byrne, G. (2009). An overview of mixed methods research. *Journal of Research in Nursing, 14*(2), 175-185. doi:10.1177/1744987108093962.

Dugas, M., Shorten, A., Dubé, E., Wassef, M., Bujold, E., & Chaillet, N. (2012). Decision aid tools to support women's decision making in pregnancy and birth: A systematic review and meta-analysis. *Social Science & Medicine, 74*(12), 1968-1978. doi:http://dx.doi.org.proxy.its.virginia.edu/10.1016/j.socscimed.2012.01.041

Elo, S. (2008). The qualitative content analysis process.(report). *Journal of Advanced Nursing, 62*(1), 107.

Elwyn, G. (2013). Option grid. Retrieved 12/10, 2013, from http://www.optiongrid.org/.

Ennis, S., Rios-Vargas, M., & Albert, N. (2012). *The Hispanic Population 2010: 2010 Census Briefs.Washington, DC: US Census Bureau; 2011.*

Ezenwa, M. O., Ameringer, S., Ward, S. E., & Serlin, R. C. (2006). Racial and ethnic disparities in pain management in the United States. *Journal of Nursing Scholarship, 38*(3), 225-233.

Fernandes-Paul, M. (2008). *Deconstructing the challenges of immigrant birth: An analysis of cross-cultural obstetrics.* Minnesota: University of St. Thomas. , 195(3318742).

Francis, L. P. (2010). Group compromise: Perfect cases make problematic generalizations. *American Journal of Bioethics, 10*(9), 25-27.

Gabbert, W., Kachur, K. H., & Whitehead, T. (Eds.). (2011). *Current procedural coding expert*. USA: OptumInsight.

Gilliss, C. L. (2001). Recruitment and retention of healthy minority women into community-based longitudinal research. *Journal of Women's Health & Gender-Based Medicine, 10*(1), 77-85.

Glance, L. G., Wissler, R., Glantz, C., Osler, T. M., Mukamel, D. B., & Dick, A. W. (2007). Racial differences in the use of epidural analgesia for labor. *Anesthesiology, 106*(1), 19-25.

Glass, K. E., Wills, C. E., Holloman, C., Olson, J., Hechmer, C., Miller, C. K., & Duchemin, A. (2012). Shared decision making and other variables as correlates of satisfaction with health care decisions in a United States national survey. *Patient Education and Counseling, 88*(1), 100-105. doi:http://dx.doi.org.proxy.its.virginia.edu/10.1016/j.pec.2012.02.010.

Grady, C. (2006). Exploring the ethics of clinical research in an urban community. *American Journal of Public Health (1971), 96*(11), 1996.

Green, C. (2006). Birth processes and views among the Maya of Yucatan and the women of Tamil Nadu.

Green, C. R. (2007). Racial and ethnic disparities in the quality of pain care the anesthesiologists call to action. *Anesthesiology (Philadelphia), 106*(1), 6-8.

Greenberg, M. B., Cheng, Y. W., Hopkins, L. M., Stotland, N. E., Bryant, A. S., & Caughey, A. B. (2006). Are there ethnic differences in the length of labor?. *American Journal of Obstetrics & Gynecology, 195*(3), 743-748.

Greenfield, P. M., Keller, H., Fuligni, A., & Maynard, A. (2003). Cultural pathways through universal development. *Annual Review of Psychology, 54*(1), 461.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? *Field Methods, 18*(1), 59-82. doi:10.1177/1525822X05279903.

Gurman, T. A., & Becker, D. (2008). Factors affecting Latina immigrants' perceptions of maternal health care: Findings from a qualitative study. *Health Care for Women International, 29*(5), 507-526. doi:10.1080/07399330801949608.

Handler, A., Kennelly, J., Peacock, N. R., & SpringerLink. (2011). *Reducing racial/ethnic disparities in reproductive and perinatal outcomes*. New York: Springer.

Harkins, J. (2010). Survey of the factors associated with a woman's choice to have an epidural for labor analgesia. *Anesthesiology Research and Practice, 2010*, 1-8.

Hart, A. C., Stegman, M. S., & Ford, B. (Eds.). (2011). *ICD-9-CM for physicians, vol 1 & 2*. USA: OptumInsight.

Hazard, C. J., Callister, L. C., Birkhead, A., & Nichols, L. (2009). Hispanic labor friends initiative: Supporting vulnerable women. *MCN: The American Journal of Maternal Child Nursing, 34*(2), 115-121.

Hendryx, M. S., Ahern, M. M., Lovrich, N. P., & McCurdy, A. H. (2002). Access to health care and community social capital. *Health Services Research, 37*(1), 85-101. doi:10.1111/1475-6773.00111.

Hodnett, E. D., Gates, S., Hofmeyr, G. J., Sakala, C., & Weston, J. (2012). Continuous support for women during childbirth. *Cochrane Database of Systematic Reviews, 3*(10).

Hodnett, E. D. (2002). Pain and women's satisfaction with the experience of childbirth: A systematic review. *American Journal of Obstetrics and Gynecology, 186*(5, Supplement), S160-S172. doi:10.1016/S0002-9378(02)70189-0.

Hsieh, H., & Shannon, S. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 15*(9), 1277; 1277-1288; 1288.

Hulley, S. B., Cummings, S. R., Browner, W. S., Grady, D. G., Newman, T. B., & Ralph Erskine Conrad Memorial Fund. (2007). *Designing clinical research* (3rd ed.). Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Humes, K. R., Jones, N. A., & & Ramirez, R. R. (2011). *Overview of race and Hispanic origin: 2010 census briefs.* (2010 Census Briefs). Retrieved from 2010 Census.

Jonsson, M., Cnattingius, S., & Wikström, A. (2013). Elective induction of labor and the risk of cesarean section in low-risk parous women: A cohort study. *Acta Obstetricia Et Gynecologica Scandinavica, 92*(2), 198-203. doi:10.1111/aogs.12043.

Kashima, Y., Yamaguchi, S., Kim, U., Choi, S. C., Gelfand, M. J., & Yuki, M. (1995). Culture, gender, and self: A perspective from individualism-collectivism research. *Journal of Personality and Social Psychology, 69*, 925-925.

Kim, H. S., & Kollak, I. (2006). *Nursing theories: Conceptual and philosophical foundations* Springer Publishing Company.

Lancaster. (2012). Risk factors associated with epidural use. *Journal of Clinical Medicine Research.*

Larkey, L. K., Staten, L. K., Ritenbaugh, C., Hall, R. A., Buller, D. B., Bassford, T., & Altimari, B. R. (2002). Recruitment of Hispanic women to the women's health initiative: The case of embajadoras in Arizona. *Controlled Clinical Trials, 23*(3), 289-298. doi:DOI: 10.1016/S0197-2456(02)00190-3.

Leeman, L. (2003). The nature and management of labor pain: Part II. pharmacologic pain relief. *American Family Physician, 68*(6), 1115.

Leininger, M. (2007). Theoretical questions and concerns: Response from the theory of culture care diversity and universality perspective. *Nursing Science Quarterly*, 20 (1), 9-13.

Lieberman, E. (2004). Epidemiology of epidural analgesia and Cesarean delivery. *Clinical Obstetrics and Gynecology, 47*(2), 317; 317-331; 331.

Lowe, N. K. (2002). The nature of labor pain. *American Journal of Obstetrics and Gynecology, 186*(5, Supplement), S16-S24. doi:10.1016/S0002-9378(02)70179-8.

Mahon, J., McFarlane, J., & Golden, K. (1991). De madres a madres: A community partnership for health. *Public Health Nursing, 8*(1), 15-19.

Marmor, T. R., & Krol, D. M. (2002). Labor pain management in the United States: Understanding patterns and the issue of choice. *American Journal of Obstetrics and Gynecology, 186*(5, Supplement), S173-S180. doi:http://dx.doi.org.proxy.its.virginia.edu/10.1016/S0002-9378(02)70190-7

Marrin, K., Brain, K., Durand, M., Edwards, A., Lloyd, A., Thomas, V., & Elwyn, G. (2013). Fast and frugal tools for shared decision-making: How to develop option grids. *European Journal for Person Centered Healthcare, 1*(1), 240-245.

Martin, J. A., Hamilton, B. E., Ventura, S. J., JK, M. M., Osterman, M., & Mathews, T. (2013). Births: Final data for 2011. *National Vital Statistics Reports, 62*(1).

McCrea, B. H., & Wright, M. E. (1999). Satisfaction in childbirth and perceptions of personal control in pain relief during labour. *Journal of Advanced Nursing, 29*(4), 877-884. doi:10.1046/j.1365-2648.1999.00961.x.

McFarlane, J., Kelly, E., Rodriguez, R., & Fehir, J. (1994). De madres a madres: Women building community coalitions for health. *Health Care for Women International, 15*(5), 465-476.

Meghani, S. H., Polomano, R. C., Tait, R. C., Vallerand, A. H., Anderson, K. O., & Gallagher, R. M. (2012). Advancing a national agenda to eliminate disparities in pain care: Directions for health policy, education, practice, and research. *Pain Medicine, 13*(1), 5-28. doi:10.1111/j.1526-4637.2011.01289.x.

Miller, A. C., & Shriver, T. E. (2012). Women's childbirth preferences and practices in the United States. *Social Science & Medicine, 75*(4), 709-716. doi:http://dx.doi.org.proxy.its.virginia.edu/10.1016/j.socscimed.2012.03.051

Namey, E. E., & Lyerly, A. D. (2010). The meaning of “control” for childbearing women in the US. *Social Science & Medicine, 71*(4), 769-776. doi:http://dx.doi.org.proxy.its.virginia.edu/10.1016/j.socscimed.2010.05.024

Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review, 108*(2), 291-310. doi:10.1037/0033-295X.108.2.291.

Orejuela, F. (2012). Exploring factors influencing patient request for epidural analgesia on admission to labor and delivery in a predominantly Latino population.(report)(clinical report). *Journal of Immigrant and Minority Health, 14*(2), 287.

Osland, J. S. (2000). Beyond sophisticated stereotyping: Cultural sensemaking in context. *The Academy of Management Executive, 14*(1), 65-77.

Osterman, M. J. (2009). BirthStats: Percentage of mothers receiving epidural/spinal anesthesia by age, race, and hispanic origin of mother: Total of 18 U.S. reporting areas, singletons only, 2006. *Birth, 36*(4), 340-341.

Phillips, A. K., Fischer, B. A., Baxter, R. J., Shafranski, S. A., Coe, C. L., & Kling, P. J. (2011). Recruiting Latina families in a study of infant iron deficiency: A description of barriers, study adjustments and review of the literature. *Wisconsin Medical Journal, 110*(1), 26-31.

Pitcock, N. (2013). *Evaluation of an initiative to increase rates of exclusive breastfeeding among rural Hispanic immigrant women.* (Unpublished DNP). University of Virginia, Charlottesville, VA.

Polit, D. F., Beck, C. T., & Ralph Erskine Conrad Memorial Fund. (2008). *Nursing research : Generating and assessing evidence for nursing practice* (8th ed.). Philadelphia: Wolters Kluwer Health/lippincott Williams & Wilkins.

Roberts, L., Gulliver, B., Fisher, J., & Cloyes, K. G. (2010). The coping with labor algorithm: An alternate pain assessment tool for the laboring woman. *Journal of Midwifery & Women's Health, 55*(2), 107-116. doi:10.1016/j.jmwh.2009.11.002.

Ross, L. F. (2010). Human subjects protections in community-engaged research: A research ethics framework. *Journal of Empirical Research on Human Research Ethics, 5*(1), 5-18.

Ruiz, R. J., & Avant, K. C. (2005). Effects of maternal prenatal stress on infant outcomes: A synthesis of the literature. *Advances in Nursing Science, 28*(4), 345-355.

Rust, G., Nembhard, W. N., Nichols, M., Omole, F., Minor, P., Barosso, G., & Mayberry, R. (2004). Racial and ethnic disparities in the provision of epidural analgesia to Georgia medicaid beneficiaries during labor and delivery. *American Journal of Obstetrics & Gynecology, 191*(2), 456-462.

Sanchez-Birkhead, A. C., Kennedy, H. P., Callister, L. C., & Miyamoto, T. P. (2010). Navigating a new health culture: Experiences of immigrant Hispanic women. *Journal of Immigrant and Minority Health,* , 1-7. doi:10.1007/s10903-010-9369-x

Sandelowski, M. (2000). Focus on research methods. Whatever happened to qualitative description? *Research in Nursing & Health, 23*(4), 334-340.

Sandelowski, M. (1995). Sample size in qualitative research. *Research in Nursing & Health, 18*(2), 179-183. doi:10.1002/nur.4770180211

Schroeder, M. A. (1985). Development and testing of a scale to measure locus of control prior to and following childbirth. *Maternal-Child Nursing Journal, 14*(2), 111-121.

Shedlin, M. G. (2011). Research participant recruitment in Hispanic communities: Lessons learned. *Journal of Immigrant and Minority Health, 13*(2), 352-360.

Sheiner, E., Sheiner, E. K., Shoham-Vardi, I., Gurman, G. M., Press, F., Mazor, M., & Katz, M. (2000). Predictors of recommendation and acceptance of intrapartum epidural analgesia. *Anesthesia & Analgesia, 90*(1), 109-109.

Simkin, P., Stewart, M., Shearer, B., Christopher Glantz, J., Rooks, J. P., Lyerly, A. D., Keirse, M. J. (2012). The language of birth. *Birth, 39*(2), 156-164.

Stiggelbout, A., Weijden, T., Wit, M. D., Frosch, D., Légaré, F., Montori, V., . . . Elwyn, G. (2012). Shared decision making: Really putting patients at the centre of healthcare. *BMJ, 344.*

Telles, E. E., & Ortiz, V. (2008). *Generations of exclusion : Mexican Americans, assimilation, and race*. New York: Russell Sage Foundation.

Thomas. (2001). Analysis of large-scale secondary data in higher education research: Potential perils associated with complex sampling designs. *Research in Higher Education, 42*(5), 517-540.

Thorne, S. (2008). *Interpretive description*. Walnut Creek, CA: Left Coast Pr.

Thorne, S., Kirkham, S. R., & MacDonald-Emes, J. (1997). Interpretive description: A noncategorical qualitative alternative for developing nursing knowledge. *Research in Nursing & Health, 20*(2), 169-177. doi:10.1002/(SICI)1098-240X(199704)20:2<169::AID-NUR9>3.0.CO;2-I.

Toledo, P., Sun, J., Peralta, F., Grobman, W. A., Wong, C. A., & Hasnain-Wynia, R. (2013). A qualitative analysis of parturients' perspectives on neuraxial labor analgesia. *International Journal of Obstetric Anesthesia, 22*(2), 119-123. doi:http://dx.doi.org.proxy.its.virginia.edu/10.1016/j.ijoa.2012.11.003

U.S. Census Bureau. (2013). State & county quick facts, winchester, VA. Retrieved 10/30, 2013, from http://quickfacts.census.gov/qfd/states/51/51840.html.

U.S. News & World Report. (July 2013). University of Virginia medical center: Stats and services. Retrieved 11/15, 2013, from http://health.usnews.com/best-hospitals/area/va/university-of-virginia-medical-center-6344000/details.

University of Virginia. (1996-present). *Clinical data repository.* Unpublished database. Retrieved 11/10/2011, from https://cdr.virginia.edu.

ValleyHealth.Winchester medical center. Retrieved 11/15, 2013, from http://www.valleyhealthlink.com/WMC.

vonKoss Krowchuk, H., Moore, M. L., & Richardson, L. (1995). Using health care records as sources of data for research. *Journal of Nursing Measurement, 3*(1), 3-12.

Weber, S. E. (1996). Cultural aspects of pain in childbearing women. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 25*(1), 67-72. doi:10.1111/j.1552-6909.1996.tb02515.x

Zhang, Y., & Wildemuth, B. M. (2009). Qualitative analysis of content. *Applications of Social Research Methods to Questions in Information and Library Science,* 308-319.

Appendix A: Qualitative Questionnaires

Participant #_____

Demographic Questionnaire

1. (Check one) Married __ Single ___Divorced ___Separated __Widowed__
2. How many pregnancies have you had? How many children do you have?
3. Where did you deliver your youngest child?

   City, State _____

   Hospital or other facility? _____
4. Did you have a doctor ____ or midwife ____
5. Did you have prenatal visits?(circle one) Yes/No
6. Did you go to prenatal education classes?(circle one) Yes/No If so, where?
7. Were your previous childbirth experiences in the U.S.? If not, what country?
8. Were you born in the U.S.___ or another country? (name of country)
9. If you were not born here, how long have you lived in the U.S.?
10. Were your parents born in the U.S. or another country? (name of country)
11. Were your grandparents born in the U.S.___ or another country? (name of country)

Intrapartum Pain Management in Hispanic Women: Qualitative Questionnaire

1. Tell me about your most recent labor experience.
    - Where did you deliver?
    - How long was your labor?
    - Was anyone with you?
    - Did you have a physician or midwife for your delivery? Reason for choice?
2. What was your expectation of what childbirth would be like? Did your experience meet those expectations? If this is not your first baby, how did this experience differ from previous labor experiences?
3. Tell me about your experience of pain during your recent labor.
    - What did you do for pain control? Medications? Epidural? Natural?
    - How did you decide on that method of pain control?
    - What are your thoughts about pain medications during labor? What are your thoughts about epidural use during labor?
4. If this was not your first baby, tell me about your experience of pain during your previous deliveries.
    - What did you do for pain control? Medications? Epidural? Natural?
    - How did you decide on that method of pain control?
5. What influenced you most in making your decision about pain control? Family present/absent? Communication with medical staff? Beliefs about pain during labor? Cost/insurance? Understanding of options?
    - Was pain control talked about in your prenatal classes with your doctor or midwife during your prenatal visits or in prenatal classes? How did this affect your decisions?
6. Did being a (first time mom/having babies before) make a difference in your choice for pain control?

7. Tell me about your family beliefs about pain during childbirth and how to deal with it.
    - What did you learn about childbirth pain from your mother/grandmother/aunts/other female family members?
    - How did what you learned from them influence your decisions or experience?
    - Any influence from men in your family about childbirth & pain control?
    - Did having/not having family with you during labor make a difference in your choices for pain control?
8. Tell me about your cultural/community beliefs about pain during childbirth and how to deal with it.
    - How does your community/culture view pain and pain control during childbirth?
    - Does religion play a part in your decisions or beliefs about pain control?
9. Tell me about your understanding of childbirth and the how the medical system works for childbirth here in the U.S.
    - What was your understanding of health services available to you in the U.S. during childbirth and prenatally?
10. What was your understanding of your options within the health care system for pain control?
    - How much information did you feel you had about your options and the process?
    - Did payment or insurance play a role in your choices for care/services/pain control?
11. What was your experience with the medical and nursing staff during your prenatal visits and during labor?

- Was language a factor in your relationship with staff and understanding of your visits or hospital stay?
- Describe some of the comfort measures you were offered for pain control during labor. (medication? epidural? massage? other?) Other options offered for pain?

12. Looking back on your experience during labor, were there things that you feel that you accepted or did during labor that you might not have done? Could you explain?
13. Is there anything else you would like to share about your childbirth experience that we haven't talked about yet?

Appendix B: Mesoamerican History Paper

"A precious feather, a unique stone"

Mesoamerican childbirth culture prior to 1521; Changes after the Spanish conquest, and its lasting influence on childbirth and midwifery in Mexico and Central America

Juliane Milburn, MSN, RN, FNP

GNUR 8230

May 11, 2011

On my honor as a student I have neither given nor received aid on this assignment.

Juliane Milburn

> Listen, everybody; our gods have put a precious feather, a unique stone in this woman's womb....We should all take care of our pregnant woman…..For this reason, she should be put under the care of a *ticitl*, a good midwife. In her hands she will be safe.[i]

These were the words usually spoken by the eldest member of the family when an Aztec woman became pregnant in the 15th century, referring to the unborn child as a precious feather. This reference has many possible origins; for the Aztecs, the most prominent being the connections with the goddess Coatlicue and the god Quetzalcoatl. Coatlicue was an earth goddess, who, while sweeping feathers in the serpent mountain of Coatepec, became impregnated as a ball of the feathers she was sweeping "descended upon her."[ii,iii] She gathered the feathers to her chest, and when she later went to remove them, found the feathers were gone, and she was pregnant.[iv] Her children, the stars and moon,[v] were angered by their mother's conception without a male partner, and planned to kill her as a result of the shame brought upon them. Yet, at the time of the attack that killed her, Coatlicue's infant was born; not as an infant, but a fully armed warrior who slayed the attackers.[vi] This warrior, called Uitzilopochtli,[vii] was revered as a god, adorned in feathers, and was eventually killed by Quetzalcoatl, one of the most celebrated of the Aztec gods.[viii] The name Quetzalcoatl literally translates as "feathered serpent," and the quetzal bird, with its colorful feathers is still seen throughout Mexico today. The feathers of the quetzal bird were, and still are, used on many ceremonial costumes and headdresses in Mexican culture. Despite the violence of these tales, the quetzal feather

was highly valued in the Aztec society, and referring to the unborn as a precious feather demonstrated the highest regard for the child.

The Aztecs had the utmost respect and reverence for the phenomenon of pregnancy and childbirth; as well as commitment to the institution of family. In addition, the Aztecs demonstrated a profound respect for the contributions of the midwife in caring for mother and infant throughout the process. All involved were to play a role in ensuring a safe and healthy outcome for this new life and the mother. This was a dominant theme in many of the ancient cultures of *Mesoamerica* (Latin American civilizations from 10,000 BC through 1521 AD), and implementation of this care and concern took on many forms in the different groups during this time period. Despite the vast expanse of time between the first ancient civilizations of Mexico and current day, there is still a high regard for pregnancy and childbirth in the Hispanic culture, along with ancient beliefs and practices still being passed on today.

The purpose of this paper is to examine the predominant beliefs surrounding childbirth and midwifery during the pre-Hispanic era in Mexico (Mesoamerica), and how those beliefs became intertwined with the Catholicism of the Spanish conquerors in the 1500s. The unifying of these two cultures' unique sets of values and practices that combined the ritualism and deity worship of the native Indian cultures with European religion and beliefs about childbirth are explored, as well as the beliefs and practices that have continued to this day.

The following research questions will guide this study. (1) What were the predominant themes surrounding pregnancy and childbirth among the major civilizations of ancient Mesoamerica? (2) How were those beliefs affected by the Spanish conquest in the 1500s? (4) What was the role of midwives in these societies? (5) What are the most common beliefs about pregnancy and childbirth that have survived within the Hispanic culture from those ancient civilizations, and how does that affect obstetric nursing care today?

Mesoamerican overview

From 10,000 BC to 1521 AD, known as the Mesoamerican period, ancient native societies inhabited Mexico and Central America. While many tribes inhabited this region during this time period, the majority of accessible information on these cultures revolves around the Mayans and the Aztecs. Because of the length of time the Mayans occupied this area of land, the Mayan civilization had an immense impact over time to southern Mexico and Central America. The Aztecs were also extremely influential due to the expanse of land they occupied and their domination over other groups. Other civilizations that had a major influence were the Olmec, Toltec, and Mixtec societies. The Mayans, Aztecs, and Mixtecs were all thriving societies at the time of the Spanish conquest in 1521, ensuring that many aspects of their cultural history were preserved, even though much was destroyed during the transition of power.[ix]

The Mayans occupied the area of southern Mexico on the Gulf coast, the Yucatan Peninsula, and into Central America in what are presently the countries of Guatemala,

Belize, Honduras, and El Salvador. The Mayans were present in this region from around 200 AD to the time of the Spanish conquest, with a transitional period of Toltec influence from 700 AD to 1100 AD.[x] The Mixtec society inhabited the southern Pacific coast of Mexico; current day Oaxaca, from 1100 AD to the 1500s. The Aztecs dominated the central plateau of Mexico, the heart of their civilization being Tenochtitlan, where currently Mexico City is located.[xi] While the Aztecs only reigned from 1400's to the time of the Spanish conquest, their influence on Mexican culture is considerable. An overview of the major Mesoamerican cultures is shown in a timeline of this period (Figure 1). Much of what was learned about these civilizations was discovered through artifacts as well as codices (example, Figure 2), which were pictorial depictions of life, war, and worship within these communities.[xii]

Figure 1. Mesoamerican timeline[xiii]

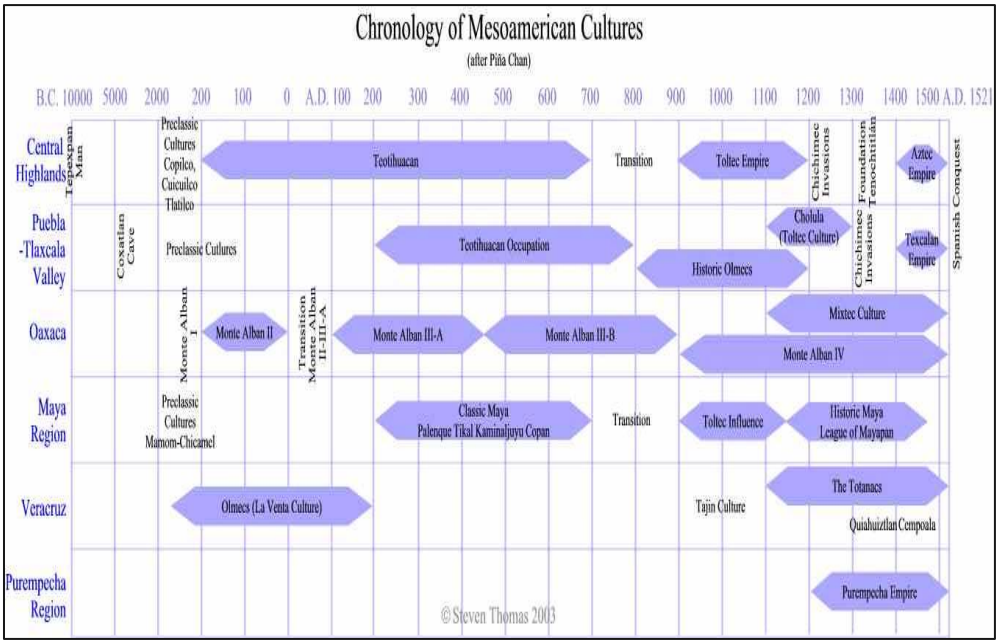


Figure 2. The Codex Nuttall (Maya)

Spanish Conquerors and the Codices

In the year 1511, the first explorers from Spain landed on the coast of Veracruz, in the Gulf of Mexico. Over the next several years, more Spaniards arrived, and by 1521 the capital of the Aztec empire, Tenochtitlan, had been taken over by Hernando Cortes, who claimed the land for King Charles V of Spain.[xiv] At the time of the Spanish conquest of Mexico, one of the goals of the settlers was to Christianize the native peoples. Part of this conversion involved destruction of any influences from their native religious and ritualistic practices, so most of the original codices were destroyed.[xv] However, a few of the Spanish friars were also early ethnographic researchers, who valued the preservation of cultural history. These friars gathered what they could of artifacts that had not been destroyed, as well as commissioned natives to illustrate new codices. These depictions were not without bias though, as the friars dictated the topics to be included in the codices, usually focused around religious rituals, as well as being geared toward a Spanish audience. Some were kept in Mexico, but most were sent to the royalty of Spain, over the years being given as gifts so they are now dispersed throughout many countries in Europe.[xvi]

While there are codices scattered throughout Europe, Mexico, and South America, there is debate among archeologists and anthropologists about the dates of origin for many of these documents. Some that are questionable as to the dates of origin were painted on paper made from the bark of a fig tree, coated with a sealant wash before the illustrations were done. These are long panels (sometimes over 20 feet in length), painted on both sides, and are fan-folded.[xvii] Others were clearly commissioned by the

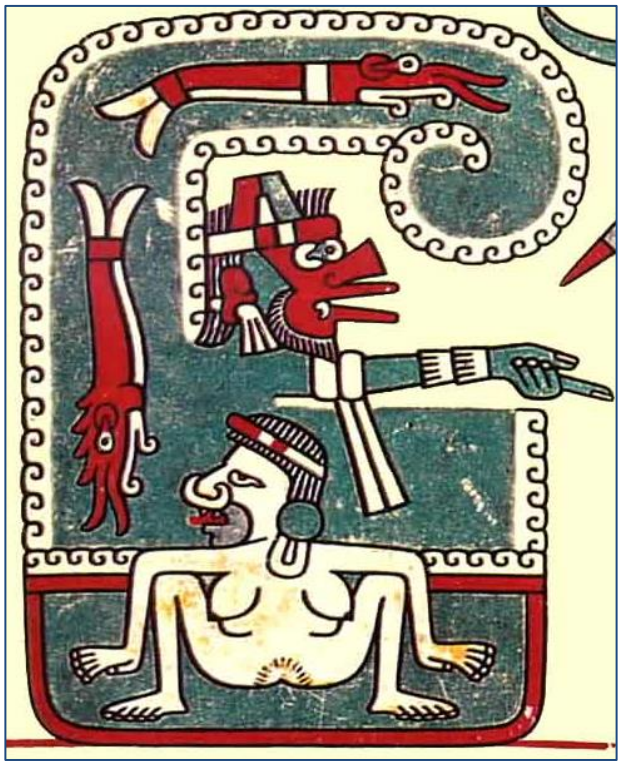
friars, painted on European paper and the people depicted in them appear more European than did the native peoples. Often they would leave space for the friars to add explanations to augment the pictures.[xviii] One example of the questionable origin involves the Madrid Codex, discovered in Spain in the 1860s. Some scholars date this Codex to the 1200s by analysis of the drawings, while others point to paper with Latin writing embedded in the Codex that is purported to be an integral component to the document, dating this closer to the 17th century.[xix] Regardless of the biases of the friars, and the debate on the origin of the codices, they continue to be a vital source of information about the life and beliefs of ancient Mexican civilizations.

The codices and childbirth

From the codices is noted the focus on god and goddess worship, with feminine goddesses playing a dominant role in the belief system of these societies. Agriculture was a major part of the Mesoamerican culture, especially noted in the codices of the Aztec and Maya, so female figures of fertility were prominent in the worship of the earth and its bounty. Many of the Aztec and Mayan goddesses were pictured as the dominant force, but always working together with Tlaloc, the rain god, to provide fertile land and vegetation.[xx] The two forces combined to provide fertile crops, similar to procreation. The goddess images often involved life and death duality, with many of these pictured in violent scenes. The goddess Coatlicue, mentioned earlier, is often pictured in this way, being the goddess of fertile land, yet the keeper of the underworld.[xxi] One of the most prominent goddesses of the Aztec codices was Toci, or grandmother, who was the mother of all the gods and seen as the center creator of the earth. Toci was touted to have given

birth to all creation, a champion of midwives and healers, and along with other goddesses, presided over the *temazcal*, a traditional sweat-bath ritual prominent in prenatal and postnatal care.[xxii] A digital image from the Aztec Codex Laud shows Toci in the traditional squatting birthing position, surrounded by creation waters (*Figure 3).*

Figure 3. Toci, Aztec Codex Laud.[xxiii]



Another reference to childbirth is seen in the Codex Nuttall, of the Mixtec group, which depicts the political and family life of the warrior Lord Eight-Deer Jaguar Claw who ruled in the late 11th and early 12th centuries, as well as other nobility of the time.[xxiv] In this codex, we see the symbol of fertility, a triangular shaped woman's cape with a shell emblem on it. This is seen above a painting of the meeting of Lord Five-Flower and Lady Three-Flint[xxv] (figure 4). On the next panel of this codex, Lady Three-Flint is

shown giving birth, with the infant still attached by the umbilical cord, a look of pain on her face and her hands on her back symbolizing the pain of childbirth. The triangular fertility symbol is seen in this drawing as well.[xxvi] The next scene (to the left of the birth, as these documents are read from right to left) is of Lady Three-Flint entering the temazcal, the traditional sweat bath, to be purified after delivering her child (Figure 5).[xxvii]

Figure 4. Meeting of Lord Five-Flower and Lady Three-Flint, Codex Nuttall.

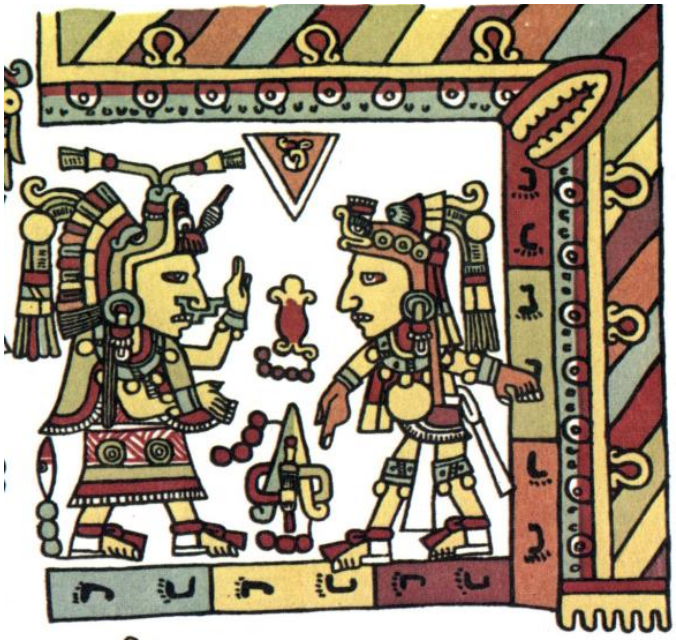


Figure 5. Lady Three-Flint giving birth, then purification in the Temazcal, Codex Nuttall.

Bernardino de Sahagun and the Codex Florentine

While the above mentioned codices show representations of general birth scenes, there are some that describe in detail prenatal, intrapartum, and postpartum practices of this time. One representation of this is seen in the work of Bernardino de Sahagun in *La Historia General de las Cosas de Nueva Espana*, also known as the Codex Florentine, so named because the original is housed in Florence, Italy. Sahagun was a Spanish friar and was recognized as one of the first ethnographic researchers, an early anthropologist, whose mission was to record the culture of the native people of Mexico. He worked on this, as well as many other books, from 1529 until his death in 1590, not only chronicling the culture of the natives, but developing a written vocabulary of the Nahuan language.[xxviii] This particular work is 12 volumes in length with over 2,000 illustrations by native artists.[xxix] As stated previously, there is some bias in this work; the diction reflects European origin, and the figures depicted in the illustrations appear more

European, and less native Aztec. However, the content of the writings is rich in details of the daily life and events of these people, providing us with a window into their world, despite the European influence in the writing and illustrations.

Due to the detail of the accounts in the Codex Florentine regarding pregnancy and childbirth among the Aztec people, the information from this document will be used to portray the general childbearing practices of the ancient civilizations of Mexico, even though specifics will vary among the different groups and time periods.

Early Pregnancy. When a young woman learned she was pregnant, a large feast and ceremony was prepared. During this ritual, the woman was addressed by the elder men in the family or community to inform her she was pregnant. They praised the gods and admonished her to be humble, saying,

> Within thee he wisheth to place a life; he wisheth to provide thee with a precious necklace; he wisheth to provide thee with a precious feather….And do not become proud, do not become arrogant! Our lord will know of that within thee; he knoweth of things…..soon something will therefore cause the baby, the tender thing, to be stillborn.[xxx]

After which the woman would respond by professing her humbleness and showing a lack of pride. There were many more instructions given to the woman by the elders: she was not to let herself become upset, and not to look upon things which would frighten her, lest she lose the baby.[xxxi] There were also instructions given as to sexual conduct with her husband. They were given permission to have relations during the first 3-4 months of

pregnancy, but not after. The warnings were given that if she did have sexual encounters in the later months of pregnancy, it would cause either a feeble baby with deformities or the baby would become stuck and not able to be born, as the semen would act as a glue in the birth canal.[xxxii] As stated in book six of the Florentine Codex,

> Before the baby has attained form, after one, two, or three months, her husband should still be accepted, so that the child may attain form….When what is within the pregnant woman is well formed, when it is enlarged….no longer should she at any time take her pleasure with her husband, no longer should she give herself to worldliness.[xxxiii]

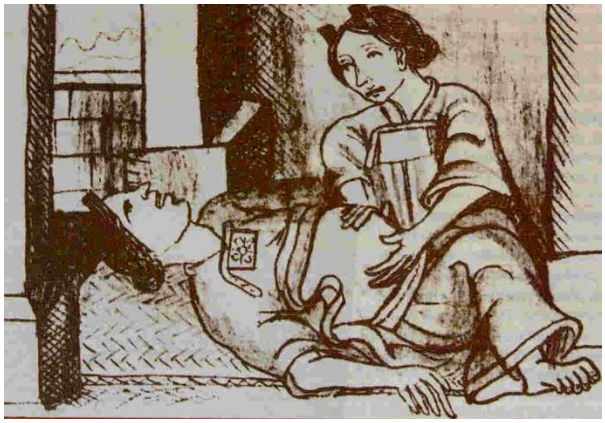
A midwife was consulted early in pregnancy and gave many similar warnings to the pregnant woman, as well as many others. The woman should not chew tzictli, a type of gum from the zapote tree, as that would cause swelling to the gums and palate of the newborn, so that it could not feed properly.[xxxiv,xxxv] She was told to put ashes under her clothing if going out at night, so as to not be frightened by ghosts; and admonished not to look upon an eclipse, lest the child be born with cleft lip.[xxxvi] There were also warnings for the father of the baby, the most prominent being that he should not go out at night, as he may encounter a ghost, which would cause the child to have a heart condition.[xxxvii] The woman was also told that if the tamales she cooked adhered to the cooking dish, that signaled an impending difficult labor as the baby would be stuck.[xxxviii]

Late Pregnancy. At 7-8 months gestation, another ceremonial feast was given where the *ticitl*, or midwife, was called upon by the elders, usually the women this time, and given her charge.

> With a word or two we here entreat thee. Show favor to the baby, the girl, the maiden. Perform thy task, thy duty, since thou art the skilled one, the artisan of our lord; since thou art empowered by him.[xxxix]

The midwife was denoted as "the one who brought about birth, the one who delivered, the one in charge of birth."[xl] Once the midwife accepted her charge and showed her humility to the gods, then she again counseled the woman on things she should do or be wary of during pregnancy. Her advice included: not to get overheated, the pregnant woman should be given whatever she desired without waiting, she should not fast nor eat clay or chalk, as the baby absorbed all that the mother ate. She advised the woman not to look upon anything red, or the child would be stuck in a malposition for labor; she was advised against heavy physical labor, and again the same advice was repeated about sexual relations.[xli] The midwife also beseeched the women of the family and community to assist the pregnant one, to watch over her, not letting her work too hard or be frightened. She then took the pregnant one to the temazcal, or sweat bath and massaged her belly to put the fetus in a favorable position for birth, and this was done many times before the birth.[xlii] Often during these baths, the woman was cleansed with jabon negro,[xliii] or black soap, made from ashes, lime, and lard. It is very slippery, and used for perinatal cleansing, other healing rituals, as well as cleaning of laundry.[xliv] A depiction of the midwife massaging the belly is seen in the Codex Florentine (Figure 6).

Figure 6. Midwife massaging abdomen of pregnant one, Codex Florentine (Aztec)



Birth of the infant. When labor was imminent, the midwife took her to the temazcal again, to prepare for birth. She was washed by the midwife, and again her belly was massaged to assess the position of the baby and, if needed, to put it in a favorable lie for birth. The woman was often given a tea made from the root of the herb cihuapatli which was referred to as an expellant or ejectant, especially if the labor was prolonged or delayed.[xlv] In recent studies, this herb has been shown to have properties similar to the action of oxytocin, a hormone released in the body that stimulates uterine contractions, that is also give synthetically today to augment labor and decrease postpartum bleeding.[xlvi] If labor was stalled, more of the herb tea was given, and in extreme cases, a tea infused with opossum tail was also used. This infusion was considered a more powerful expellant, ensuring an immediate and intense delivery.[xlvii] In addition, the woman was taken back to the temazcal, to again massage the abdomen and set the baby into a favorable position for birth. At the moment of the birth, the midwife gave out a loud war-like cry, to signify that the woman had fought a good battle and that she was a brave warrior.

If the woman were to die in childbirth, the midwife and the women of the family let out loud war cries as the woman was buried. One who died in childbirth was afforded the same status as a warrior who died in battle. The woman was cleaned, then her husband carried her on his back to the burial place, with the midwife and all the elder women accompanying him. The women carried swords and shields, crying out warrior attack cries, and she was buried at sunset.[xlviii] The body was guarded for four days, as the young warriors would try to steal the body if possible. The woman who died as a brave warrior in a battle was now considered holy, and if the young warriors carried a lock of her hair, or one of her fingers on his shield, is was said that would paralyze their foes in battle.[xlix] Hence her body was protected against this post-mortem violation.

Postpartum. After the birth, the midwife cut the umbilical cord, buried the placenta in a corner of the house or in the temazcal, and the cord was dried and saved. The place of burial for the placenta was important, as it is still considered a part of the individual, and one would pray to the burial site throughout their lifetime. In addition, if the birth happened away from home, the placenta was put in a clay pot, allowed to dry, and taken back to the home for burial.[l] The burial of the umbilical cord was significant as well; for a boy in the battlefield to denote his status as a warrior, and if a girl, near the hearth to denote her place in domestic life.[li] While cutting the umbilical cord, the midwife would speak to the child of his or her future duties. For a male child she would say:

> Dear son…you must understand that your home is not here where you have been born, for you are a warrior, you are a quecholli bird, and this house where you

> have just been born is only a nest…your mission is to give the sun the blood of enemies to drink and feed Tlaltecuhtli, the earth, with their bodies.[lii]

Then the cord was tied to a small shield with four arrows attached and given to the warriors of the community to take to the battlefield for burial.[liii] For a female child, the cord was put into a pot with implements of woman's domestic duties, such as weaving and spinning materials, and buried near the hearth saying:

> As the heart stays in the body, so you must stay in the house; you must never go out of the house…you must be like the embers in the hearth.[liv,lv]

The baby was then given the first bath by the midwife, softly praying to Chalchiuhtlicue, the water goddess. She would blow her breath on the water, then ceremoniously touch the water to the head, neck, and chest of the infant prior to bathing.[lvi] To prevent infection of the eyes, they were cleansed with a solution made from the seeds of the Mucana vine, also referred to as ojo de venado (or eye of the deer, as the seeds look like deer eyes).[lvii,lviii] In her prayers during the first bath, the midwife admonished the infant to be cleansed of the filth of the parent's vices, all the while referring to the child as a precious necklace or precious feather.[lix] She then presented the new child to the family so that all could welcome the infant into the family and community, pledging their support of this new life. The midwife would say:

> Here are gathered thy beloved grandfathers, thy beloved grandmothers, who await thee. Here in their hands thou hast come to arrive.[lx]

In addition to the different activities with the umbilical cord between males and females, the naming ceremony (performed by the midwife) also distinguished the new infant's role in society, usually along gender lines.[lxi] For this ceremony, a tonalpouhqui, or soothsayer was summoned to assess the sign that the child was born under and whether or not it was a lucky sign, and the midwife would tailor her speech for the naming ceremony based on his interpretation.[lxii] The Aztecs had an elaborate system of rituals and astrological dates for lucky birth signs that revolved around 13 day cycles. Those born under lucky signs were said to be prosperous & wealthy if of noble class, and brave if of lower class. Even if born under a lucky sign, one needed to do penance to keep that luck; humble oneself, and be a good citizen, lest the luck be taken away.[lxiii] If born under an unlucky sign, one could improve his or her fate by ritualistic penance such as self-inflicting pain, fasting, being clever or intelligent, and being obedient.[lxiv] The child was named by the midwife and dedicated to the lucky or unlucky sign and the god that governed it. She raised the child toward the sky four times, as that was the sacred number in the Aztec belief system,[lxv] and he or she was dedicated to the gods, the earth, the community, and the family as well as charging the child with their role in society.

The midwife spoke to the woman as well, praising her endurance of labor, referring to it as a battle, and calling the woman a brave warrior. She was still warned to be humble, and not to brag about her accomplishment, while still paying tribute to the feat of giving birth.[lxvi] During the postpartum period, there began the ceremony of thanks and good wishes from the family and community. The midwife was thanked, and all greeted the newborn child.[lxvii] Before entering to greet the newborn, everyone rubbed

ashes on their knees, and if it were a child, all the joints were covered with ash. This was thought to prevent loosening of the joints.[lxviii] A fire was lit in the home after the birth and kept burning for four days postpartum (again, the sacred number four). If the fire went out, it was said that luck would be taken away from the baby, so someone was charged with vigilant care of the fire for those four days.[lxix] The woman was then taken again to the temazcal, several times during the postpartum period, in order to close her womb and heal her body, using medicinal herbs to form a healing steam. The midwife also skimmed the woman's body with special herbs, touching her genitals, abdomen, and back.[lxx]

The Temazcal

While the Codex Florentine displays many of the details of pregnancy and childbirth unique to the Aztec culture, many of the rituals and practices were very similar throughout pre-Hispanic Mexico and Central America. As outlined in the Codex Florentine, the temazcal held a place of great importance for pregnancy and childbirth, as well as other rituals and healing treatments. The temazcal is noted in virtually every reference to the life of the Mesoamerican people. The word temazcal comes from the Nahuatl (Aztec) language; the word *temaz* means bath, and the word *calli* signifies house. The structure was usually dome shaped and made of adobe bricks, with an idol of the goddess who rules the temazcal buried under the building to protect those within.[lxxi] The configuration consisted of two separate parts; a steam chamber where the person bathed, and a fire chamber with heated stones that water was poured on to make the steam, similar to a modern day sauna.[lxxii] The temazcal was used for a multitude of purposes all

throughout Latin America, for health and hygiene as well as curing ailments. Herbs were infused into the steam, the type depended on the ritual or ceremony, or the condition being treated.[lxxiii] A depiction of the temazcal is seen below from the Codex Magliabecchiano of the Aztecs (Figure 7).

Figure 7. The temazcal, Codex Magliabecchiano (Aztec)

The temazcal was often thought to be ruled by the mother goddess Tonantzin, and the structure considered a representation of her. When one entered the temazcal, it symbolized going back into the womb as it was a small space, dark, hot, humid, and isolated from the world.[lxxiv] It was used as a place of introspection, treatment of illness, preparation for childbirth, and postpartum healing. When one exited the temazcal, it was through a smaller opening, representing a re-birth, leaving the darkness of the temazcal into the light of day.[lxxv] In fact, one of the terms in the Spanish language which refers to giving birth is “dar la luz,” which is translated as “to give light.” The re-birth symbolism

was applied not only to healing from illness or childbirth, but a mental healing after the introspection done during the time in the sweatbath. Other benefits noted were that the body sweats, circulation was stimulated to activate metabolism and get nutrients to the whole body, and the heart would beat faster and stronger.[lxxvi] The heat of the temazcal was also seen as crucial in the treatment of cold conditions, or prevention of harm from cold influences.

The Hot and Cold Humors of the Body

The balance of hot and cold influences on the body and its effect on health and wellness were prominent themes noted not only in pre-Hispanic Mexico, Central, and South America, but in many other cultures such as the Asian, Indian, and Middle Eastern societies. The basis of the hot and cold influence has its root in the teachings of Hippocrates, popular among European physicians in the sixteenth century, and was imparted to the pre-Hispanic peoples by the Spanish conquerors.[lxxvii] The premise of hot and cold influences lies in equating the four humors of the body to that of the earth's four elements. In the earth fire is hot, earth is dry, water is moist, and air is cold. All four elements are given equal importance, and are associated with the four humors of the body.[lxxviii] In the body, however, they are seen as mixtures. "Blood is hot and moist; phlegm is cold and moist; yellow bile is hot and dry; black bile is cold and dry."[lxxix] In order to achieve health, these four humors need to be in balance, and the body should be in a state midpoint between hot and cold.

Pregnant and menstruating women are said to be in a hot condition, and could be damaged by cold influences, thereby needing protection from such forces. Women in this state were told to avoid bathing in cold water, as well as eating cold or acidic foods. Examples of these would be watermelon, limes, tomatillos, plums, or unripe fruit. Warm foods were prescribed during this time, such as black beans, chili, and broth. Fish was eaten only if roasted, as it swims in cold water.[lxxx] If a woman was exposed to cold and wet humors during pregnancy, it was thought that the pregnancy would freeze up and the baby would stop moving, equating it to waters that no longer move and are not alive.[lxxxi] During labor, warm therapies were employed to assist with pain and reduce swelling, such as chamomile, cinnamon, or rosemary tea.

During the postpartum period the woman was thought to be in danger from cold forces due to the blood loss with delivery. Since blood is considered one of the body's hot influences, loss of this needed to be counteracted with warm treatments. At this time warm therapies were employed to combat the cold forces and restore balance to the body. Warm baths, massage, as well as warm food and drink were used to bring back heat to the body. In the immediate postpartum period, hot stones wrapped in nucutsoya leaves were placed on the abdomen. The nucutsoya are leaves of the castor oil plant and stones wrapped in these were thought to restore health to the womb, relieve pain, and prevent pregnancy for up to a year postpartum.[lxxxii]

Goddesses and the Virgin Guadalupe

A central theme that was recorded in virtually all historical accounts of Mesoamerican life is that of the gods and goddesses. Deities gave meaning to events of everyday life for the people of ancient Mesoamerica, and were an integral part of ceremonies and rituals, especially surrounding major events such as childbirth. Much of the focus was on female deities, as mentioned previously, and there are numerous goddesses associated with childbirth and midwifery. Two of the most prominent noted in historical accounts are the Mayan goddess, Ix Chel, and the Aztec goddess Tonantzin (also known as Coatlicue, mentioned in the beginning of this work). These goddesses not only were significant to birth and midwifery practice, but they were also instrumental in facilitating the conversion of the native peoples to Christianity after the Spanish conquest. The Mayan goddess Ix Chel is noted in much of the literature on the history of the Mayans. In Friar Diego de Landa's book "Relacion de la Cosas de Yucatan" she is referred to as the goddess of childbirth, pregnancy, and fertility.[lxxxiii] Diego de Landa was a Spanish friar, similar to de Sahagun, whose mission around the year 1566 was to record the cultural heritage of the Mayans, just as de Sahagun did for the Aztecs. Ix Chel was seen as one of the mother goddesses, and a shrine to her was located in what is currently Cozumel. She is depicted with a headdress of serpents, denoting her status as keeper of life and death.

Tonantzin (also known as Coatlicue) is one of the most prominent Aztec goddesses noted in relation to childbirth. She is known as the mother goddess and the keeper of the temazcal. Tonantzin was so revered in the Aztec culture, that a temple was dedicated to her in the Aztec capital city of Tenochtitlan.[lxxxiv] She is also the goddess

most associated with the Virgin Mary or Guadalupe. As mentioned previously, one of the goals of the Spanish settlers was to convert the natives to Christianity. While the deity worship of the Aztecs may seem very different from the Catholicism of the Spaniards, there are many similarities that assisted the Spanish in this endeavor. The first reference to the Virgin Guadalupe was in 1531, when a dark-skinned vision of the virgin was seen by a poor Aztec farmer, converted to Christianity. The vision was seen on the very spot that the temple dedicated to the worship of Tonantzin stood, and to this day, there is a Basilica dedicated to the Virgin Guadalupe at that same location in Mexico City.[lxxxv]

Both of these women were seen as mothers of deities; Tonantzin was the mother of the warrior god Uitzilopochtli, and the Virgin Guadalupe was the mother of Christ. They also were both impregnated by an immaculate conception, and both seen as the creators of life.[lxxxvi] The sons of both women were celebrated with communion; Uitzilopochtli with a ceremonial bread in the image of him, and Christ in the communion of bread and wine. Each ceremony represents eating the body of the god, another similarity which eased the transition to Christianity. Since the Aztecs worshiped many gods, that practice was eventually transitioned to the patronage of saints in the Catholic religion.[lxxxvii] Over time, the goddess Tonantzin and the Virgin Guadalupe were seen as the same woman, and now the names are often used interchangeably. The word Tonantzin is also used to refer to the Catholic church which is represented by the Virgin Guadalupe.[lxxxviii] As Tonantzin was seen as the goddess of birth and the mother of all, so

was the Virgin Guadalupe seen as the patron of childbirth and the quintessential mother of all.[lxxxix]

Current birthing practices

While much of the culture and practices of the ancient Mesoamerican civilizations were lost with the Spanish conquest of this region, many of the rituals and customs still remain today, in both urban areas and very isolated rural regions. As an example, within the Mam region of Guatemala, on the Pacific coast of that country, there are some isolated areas where traditional Mayan midwifery practices still occur, chronicled by Sarah Proechel in her work "Voices of Mayan Midwives, oral histories of practicing traditional midwives from the Mam region of Guatemala."[xc]

In this book, details of current midwifery practice in that country are told, and are very similar to the traditional practices of the ancient Mayans, and midwives still hold a very respected position in the community. For example, many of the warnings for pregnant women remain the same or similar: they should satisfy any food cravings, should not be under stress or worry, and should avoid fright or "susto." The concern with hot and cold forces affecting health continues with this culture as well. The temazcal is still a central part of the care during pregnancy, birth, and postpartum, as well as sobadas (the midwives massage) done with special soap (usually the jabon negro) in the temazcal.[xci] The "evil eye" is still feared in this culture, referencing the practice of cleaning the eyes of the infant with the seed of the ojo de venado. Infants and adults are still thought to be protected from the evil eye by wearing jewelry made of the seeds of the

Mucuna vine.[xcii] The midwife is also in charge of proper disposal of the placenta and umbilical cord as it is considered part of the mother and baby and not a waste product. In this region, it is usually burned in the temazcal in a ceremonial way, where in ancient civilizations it was buried near the hearth or in the temazcal, as mentioned earlier.[xciii]

As seen in the codices, midwives in this community are usually called to their work, either by signs at birth, such as being born with the amniotic sac intact, or by visions or dreams.[xciv] One midwife in Proechel's book reported several visions from the Virgin Guadalupe, and a dream that called her to the profession where she states:

I am in a field of flowers and I am gathering babies amidst the flowers. [xcv]

Being a remote, isolated locality, traditional customs remain strong here. However, even women in urban areas of Mexico and Central America are influenced by these traditions, and bring those constructs with them when they immigrate to the United States.

Many of the pregnancy warnings are still told to women of this culture today, by their mothers and grandmothers, and the extended family is still highly integrated in the childbearing and childrearing process. Many of the same herbs are used, as well as the warnings about avoiding "susto" and not to worry or become upset during pregnancy. Many of the practices noted here have a scientific basis, such as the cleansing of the baby's eyes to prevent infection, warnings against pica (eating non-food substances such as clay or dirt), even the warnings to not go out at night during pregnancy helped to keep the woman safe. Other behaviors seen in Hispanic women today may have their roots in some of the rituals and beliefs of the Aztecs and Mayans. The belief that the labor and

birth is a battle, and the woman a brave warrior, may affect use of pain relief methods during labor. If the pain is to be endured by the "warrior," and the woman is to remain humble, use of modern pain control methods may not be desired, and expressions of pain during labor may be suppressed.

The importance of these ancient teachings to the Hispanic population cannot be underestimated, especially with regard to childbearing and childrearing. These processes define a culture and perpetuate its existence, making even the earliest teachings valuable to society. By identifying the roots of some of the current belief systems surrounding childbirth, today's nurses can gain valuable insight into the derivation of the thought processes and behaviors these families exhibit when encountering the health care system for perinatal care. When nurses care for women from this culture in the perinatal setting, it is important to understand and respect the role their cultural heritage plays in having a positive birthing experience, providing inroads into culturally competent nursing care.

Notes

[i] Guadalupe Trueba, "Birth in Pre-Hispanic Mexico," *Midwifery Today with International Midwife* (December 31, 1997): 45.

[ii] Bernardino De Sahagun. "Book Three-The Origin of the Gods," in *General history of the things of New Spain: Florentine codex* (Santa Fe, NM: School of American Research, 1950), 2. Translation and notes by Arthur J. Anderson and Charles E. Dibble. This work was translated from the original Aztec version in twelve volumes.

[iii] Patricia Granziera, "From Coatlicue to Guadalupe: The Image of the Great Mother in Mexico," *Studies in World Christianity* 10, no. 2 (2004): 250-273. (hereafter cited as *SWC*) Many of the statues and paintings of Coatlicue depict her wearing a skirt of snakes, or a headdress of snakes, and are often representations of mutilation and death, due to her betrayal and murder. She is seen as the goddess of the earth and fertile crops, as well as the goddess of death.

[iv] De Sahagun, "Origin of the Gods," 2.

[v] William Madsen. *The Virgin's Children, Life in an Aztec Village Today* (New York: Greenwood Press, 1969), 4. Coatlicue was considered the mother of all, and after giving birth to the moon and stars, she became pregnant through immaculate conception. Coatlicue was also known as Tonantzin.

[vi] Granziera, "From Coatlicue to Guadalupe," (*SWC*): 252.

[vii] Ibid. Also known as Hutzilopochtli.
[viii] De Sahagun, "Origin of the Gods," 5.
[ix] Michael D. Coe & Rex Koontz, *Mexico from the Olmecs to the Aztecs* 5th ed. (London: Thames & Hudson, 2002), 8-9.
[x] "Timeline of the Conquest of Mexico," Steven's Balagan. Accessed February 27, 2011 http://balagan.org.uk/war/new-world/mexico/images/mesoamerican_chronology_1345px.jpg
[xi] Ibid, 9.
[xii] University of Arizona Library. Accessed February 27, 2011 http://www.library.arizona.edu/exhibits/mexcodex/intro.htm Codices (singular, Codex) refers to manuscripts which are made of either bark, leather, or cotton and sometimes have covers made of wood. Usually these are in long strips which fold up, like a screen partition. These documents contained a wealth of information about ancient societies, similar to Egyptian hieroglyphs.
[xiii] "Timeline of the Conquest of Mexico," Steven's Balagan. http://balagan.org.uk/war/new-world/mexico/images/mesoamerican_chronology_1345px.jpg
[xiv] Elizabeth H. Boone. *The Codex Magliabechiano* (Los Angeles: University of California press, 1983), 1-4.
[xv] Ibid, 1-4.
[xvi] Ibid, 1-4.
[xvii] The Maya Hieroglyphic Codices. Accessed February 27, 2011 http://mayacodices.org
[xviii] Boone, *The Codex Magliabechiano*, 1-4.
[xix] The Maya Hieroglyphic Codices. Accessed February 27, 2011 http://mayacodices.org
[xx] Granziera, "From Coatlicue to Guadalupe," *Studies in World Christianity* 10, no. 2 (2004): 250-273. When viewing Aztec codices of this time period there appears to be a focus on male warrior figures, however, this was predominant in the Aztec elite social strata. The peasant groups which were more agricultural in focus, paid more heed to the female images of fertility and fecundity.
[xxi] Ibid, 252.
[xxii] Ibid, 251.
[xxiii] FAMSI, Foundation for the Advancement of Mesoamerican Studies, Inc. Accessed February 27, 2011. http://www.famsi.org/research/graz/laud/img page39.html Portion of one plate of the Aztec Codex Laud, circa 1400-1500.
[xxiv] Zelia Nutall. *Codex Nuttall, Facimile of an ancient Mexican codex belonging to Lord Zouche of Harynworth* (Cambridge, MA: Harvard University, 1902) Peabody Museum of American Archaelogy and Ethnology, p. XCIX.
[xxv] Many of the Mixtec names involved the person's day of birth, followed by a nick-name of some kind, like seven-feather, or four-flower; hence the origin of Lady Three-flint and Lord Five-flower. Jacques Soustelle. *Daily Life of the Aztecs on the Eve of the Spanish Conquest* (Stanford, CA: Stanford University Press, 1961), 167.
[xxvi] Nathan VanPatten, "Obstetrics in Mexico Prior to 1600," Annals of Medical History 4, No. 2 (March 1932): 203-212.
[xxvii] Nutall, *Codex Nuttall,* p. XCIX
[xxviii] Fray Bernardino De Sahagun. *A History of Ancient Mexico 1547-1577* (Nashville, TN: Fisk University Press, 1932), 3-17. The original work by Sahagun was published circa 1577; reprinted and translated several times from the original publication date. This particular version was translated by Fanny R. Bandelier from the Spanish version of Carlos Maria de Bustamante which was originally published in 1829.
[xxix] Ibid, 3-17.
[xxx] Bernardino De Sahagun. "Book six-Rhetoric and Moral Philosophy," in *General history of the things of New Spain: Florentine codex* (Santa Fe, NM: School of American Research, 1950), 141. Translation and notes by Arthur J. Anderson and Charles E. Dibble. This work was translated from the original Aztec version in twelve volumes.
[xxxi] Ibid, 143 & 156.

[xxxii] Ibid, 143.
[xxxiii] Susan Schroeder, Stephanie Wood, & Robert Haskett, editors. *Indian Women of Early Mexico* (Oklahoma: University of Oklahoma Press, 1997), 71.
[xxxiv] Jacques Soustelle. *Daily Life of the Aztecs on the Eve of the Spanish Conquest* (Stanford, CA: Stanford University Press, 1961), 189.
[xxxv] "Uses of the Zapote resin in Pre-Hispanic Mexico." Accessed May 10, 2011 http://pagerankstudio.com/2-miscellaneous/article_4895.htm Tzictli is a polymer of the resin from the zapote tree, used to make gum, which was utilized for anxiety reduction. It was also used in making of candles, adhesives, and incense. The current term used in Mexico for gum is "chicle" which is very similar to the pronunciation of the original Aztec word.
[xxxvi] Soustelle, *Daily Life of the Aztecs*, 189. Cleft lip is referred to in this text as hare-lip. The precautions also state that if the woman carries a knife made of obsidian next to the skin of her abdomen, under her clothing, that the danger of hare-lip may be avoided if looking upon an eclipse.
[xxxvii] Ibid, 189.
[xxxviii] Madsen, *The Virgin's Children*, 10.
[xxxix] De Sahgun, "Book six," *Florentine Codex*, 152.
[xl] Ibid, 149.
[xli] Ibid, 155-158.
[xlii] Ibid, 155.
[xliii] Trueba, "Birth in Pre-Hispanic Mexico," 45.
[xliv] Sarah Proechel, *Voices of Maya Midwives: Oral Histories of Practicing Traditional Midwives from the Mam Region of Guatemala* (New York: Self Published, 2005): 157.
[xlv] De Sahgun, "Book six," *Florentine Codex,* 159.
[xlvi] Miguel Carro-Juarez, "Pro-ejaculatory effect of the aqueous crude extract of cihuapatli (Montanoa tomentosa) in spinal male rats," *Journal of Ethnopharmacology* 106 (2006): 111-116.
[xlvii] Soustelle, *Daily Life of the Aztecs*, 190. Only a small amount of the opossum tail was used in this infusion, as it was so strong, it was said too much would cause the woman not only to expel the fetus, but all her intestines as well.
[xlviii] Ibid, 190.
[xlix] De Sahgun, "Book six," *Florentine Codex,* 162.
[l] Stephen D. Houston, "Symbolic Sweatbaths of the Maya: Architectural Meaning in the Cross Group at Palenque, Mexico," Latin American Antiquity 7, no. 2 (June, 1996): 132-151. While this particular reference is to the Mayan society, these practices were also noted in many of the references to the Aztec practice of burying the plancenta.
[li] De Sahgun, "Book six," *Florentine Codex,* 169.
[lii] Soustelle, *Daily Life of the Aztecs*, 163.
[liii] De Sahagun. *A History of Ancient Mexico*, 208.
[liv] Ibid, 208.
[lv] Soustelle, *Daily Life of the Aztecs*, 164.
[lvi] Ferdinand Anton. *Woman in Pre-Columbian America* (New York: Abner Schram, 1973), 18.
[lvii] Nathan Van Patten, "Obstetrics in Mexico Prior to 1600," *Annals of Medical History* 4, no.2 (March, 1932): 203-212.
[lviii] "Bat pollinated Mucuna flowers." Accessed, May 10, 2011. http://waynesword.palomar.edu/mucuna.htm Mucuna puriens is a tropical vine which produces hard, marble-like seeds that resemble deer eyes in appearance. The seeds are also called sea beads, as they float in water and often wash up on shore, and are used in jewelry. They are often worn as talismans to ward off "evil eye." The seeds were used to make infusions for eye protection of the newborn and for treatment of hemorrhoids in some cultures.
[lix] De Sahgun, "Book six," *Florentine Codex,* 176.

[lx] Ibid, 168.
[lxi] Susan Kellogg, "The Woman's Room: Some Aspects of Gender Relations in Tenochtitlan in the Late Pre-Hispanic Period," Ethnohistory 42, no. 4 (fall, 1995) 563-576.
[lxii] Soustelle, *Daily Life of the Aztecs*, 165.
[lxiii] De Sahagun. *A History of Ancient Mexico*, 208.
[lxiv] Ibid, 207-208.
[lxv] Madsen, *The Virgin's Children*, 12.
[lxvi] De Sahgun, "Book six," *Florentine Codex,* 179.
[lxvii] Soustelle, *Daily Life of the Aztecs*, 164.
[lxviii] De Sahagun. *A History of Ancient Mexico*, 242.
[lxix] Ibid, 242.
[lxx] Trueba, "Birth in Pre-Hispanic Mexico," 45.
[lxxi] Madsen, *The Virgin's Children*, 8.
[lxxii] Houston, "Sweatbaths of the Mayas," 138.
[lxxiii] "¿Sirve la medicina tradicional mexicana para mejorar la calidad de vida de los enfermos y para sanarlos?" Accessed, May 9, 2011 http://infomorelos.com/salud/medicina-tradicional.php
[lxxiv] Ibid.
[lxxv] Ibid.
[lxxvi] Ibid.
[lxxvii] Madsen, *The Virgin's Children*, 33.
[lxxviii] Jacques M. Chevalier & Andres Sanchez Bain, *The Hot and Cold: Ills of Humans and Maize in Native Mexico* (Toronto: University of Toronto Press, 2003), 3.
[lxxix] Ibid, 4.
[lxxx] Ibid, 57-58.
[lxxxi] Ibid, 58.
[lxxxii] Ibid, 59.
[lxxxiii] Alfred M. Tozzer (editor), *Landa's Relacion de las Cosas de Yucatan* (Cambridge, MA: George Banta Publishing Co, 1941), 10.
[lxxxiv] "Tonantzin," Accessed April 24, 2011 http://ojinaga.com/curandero/Tonantzin/tonantzin.html
[lxxxv] Madsen, *The Virgin's Children*, 28.
[lxxxvi] Louise M. Burkhart, *Before Guadalupe: The Virgin Mary in Early Colonial Nahuatl Literature* (Albany, NewYork: University of Texas Press, 2001), 11.
[lxxxvii] Madsen, *The Virgin's Children*, 29 & 31.
[lxxxviii] Ibid, 29.
[lxxxix] Burkhart, *Before Guadalupe*, 11.
[xc] Sarah Proechel, *Voices of Maya Midwives: Oral Histories of Practicing Traditional Midwives from the Mam Region of Guatemala* (New York: Self Published, 2005).
[xci] Ibid, 58.
[xcii] "Bat pollinated Mucuna flowers." http://waynesword.palomar.edu/mucuna.htm
[xciii] Proechel, *Voices of Maya Midwives*, 61.
[xciv] Lois Paul & Benjamin D. Paul, "The Maya Midwife as Sacred Specialist: A Guatemalan Case," *American Ethnologist*, 2, no. 4: 707-726.
[xcv]Proechel, *Voices of Maya Midwives*, 138. Quote from Mayan midwife, Ana Cristina Villagrez Cifuentes, relating a prophetic dream in which she was in a field of flowers gathering babies, bathing them, and caring for them. Later in another dream she was visited by the statue of Santa Maria Magdelana, where she was given her charge to be a midwife.