4-17-2013

Prevalence of Pregnancy Folkloric Beliefs Among Nurse-Midwifery Client Populations

Iris Aleece Campbell

Prevalence of Pregnancy Folkloric Beliefs among Nurse-Midwifery Client Populations

Iris Campbell

Western Michigan University

Bronson School of Nursing

Lee Honors Chair: Ruth Zielinski PhD, CNM

Abstract

Pregnancy has long been associated with traditional folklore beliefs or customs. Since healthcare providers such as nurses may be asked about these beliefs, they need to be prepared to educate clients about whether or not the belief is supported by research or if there is potential for harm. Therefore, the purpose of this research was to explore prevalence of pregnancy related folklore beliefs by conducting a survey of Certified Midwives and Certified Nurse Midwives (CM/CNMs) in the United States. Following Institutional Review Board (IRB) and American College of Nurse Midwives (ACNM) approval, a geographically diverse sample of 1000 active CM/CNM members were sent an email inviting them to participate. The survey was developed following a review of the literature to include 12 pregnancy beliefs. Responders were asked to rate the frequency with which they heard each (never-1, seldom-2, occasionally-3, frequently-4), and whether that particular belief was more common among a certain ethnic/racial group. Participants were asked to provide years and location of midwifery practice. Space was provided for comments. Response rate was 20% (n = 202 CM/CNMs). Mean years of midwifery practice was 15.8 and response rates were distributed across the four US regions (22.8% NE, 21.8% MW, 29.7% South and 24.8% West). Prevalence of beliefs did not differ by region. The six most prevalent beliefs reported were: how you are carrying predicts the sex of the baby, fetal heart rate predicts the sex of the baby, a full moon will start labor, eating spicy food will start labor, "mother had a long/quick labor, so I will too", and heartburn means a full head of hair. Participants reported hearing most pregnancy beliefs from clients of a variety of races/ethnicities. Non-judgmental acceptance of patient and family and the importance of valuing tradition and culture in "modern" healthcare are central to the values of holistic healthcare. Findings provide

insight into common pregnancy beliefs and how providers can educate their clients in regard to these beliefs.

Acknowledgements

It is with sincere gratitude and great pleasure that I acknowledge the help of Professor Ruth Zielinski PhD, CNM. Without her immense aid and guidance, the completion of this work would have been impossible. I wish to give thanks to Professor Mary Ann Stark PhD, RN, my labor and delivery teacher, for sparking my interest in this topic. It was also an honor to work with Mary Lagerwey PhD, RN for ensuring refinement and appropriate presentation of this work. Last, but not least, I would like to give thanks to my mother and family members for their unconditional love and support.

Prevalence of Pregnancy Folkloric Beliefs among Nurse-Midwifery Client Populations

According to the Centers for Disease Control and Prevention (CDC), there were more than 3.9 million births in the United States for the year 2011 (CDC, 2013). With the average number of pregnancies per woman being 3.2 in 2008 (CDC, 2013), pregnancy is a significant part of life that affects most women and their families. The prevalence of human reproduction is great, yet unlike a contagious disease, this phenomenon can be filled with beauty and mystery.

Amidst the excitement, wonder, and uncertainty, important questions may often arise. In general, mothers care about the well-being of their offspring. There are concerns with what should be eaten, what activities should be done, what to avoid, whether it will be a boy or a girl, and how their labor will go (Alden, Lowdermilk, Cashion, & Perry, 2011). In addition to this, there are traditions, folklore beliefs, and perceptions that may accompany this period from the culture of an individual. Though modern research promotes a heavier reliance on technology and scientific fact (Polit & Beck, 2009), many may still rely on folklore beliefs to explain the mysteries of pregnancy. On top of that, the diversity of the world's cultures translates into differences in beliefs and customs regarding pregnancy. This creates many intricacies in the large and overall complex scheme of pregnancy.

An important component of prenatal care is education (Gregory, 2005). With the presence of research and science to aid health care, it is important mothers receive optimum care without hindering the special component culture contributes to pregnancy. Health care providers, such as doctors, nurses, and midwives are key constituents in the provision of accurate information and support for clients in the pregnancy period (Aden et al., 2011).

Women presenting for care may have received advice from other sources such as family, friends, and the media. Sorting through the information women have been given from other sources and deciding what is helpful, benign or potentially harmful can be challenging and time consuming. This is particularly important when considering cultural or ethnic beliefs and the importance of cultural sensitivity. Women who have recently emigrated may have beliefs related to pregnancy that are unfamiliar to the provider, for example that viewing a dead body can mark your baby (Phillips, 2005). Women may feel guilt if they believe that their actions have contributed to an adverse pregnancy outcome (Schaffir, 2007). Many providers dismiss women's cultural beliefs. This not only perpetuates the patriarchal "I know what's best for you" philosophy of Western allopathic medicine, but also can be erroneous. For instance, a commonly heard belief during pregnancy is "my baby is going to have a lot of hair because I have a lot of heartburn", and a study published in 2006 provided evidence for the association between heartburn and fetal hair growth (Costigan, Sipsma, & DiPietro).

Theoretical Framework

The *Biophysical Model, the Theory of Interpersonal Relations,* and *Transcultural Nursing* will be used as a foundation to exploring the prevalence of folkloric beliefs in the United States. There is very little information in the academic literature about the use of pregnancy folklore beliefs in the United States. This information may be used to determine whether there is a need for more cultural competence regarding pregnant clients. Additionally, we can explore possibilities for further research and establish a basis from which more specific inquiries can be made.

Proposed first in 1977 by George Engel, the *Biopsychosocial Model* states that health and wellness are caused by a complex interaction of biological (body), psychological (mind), and

sociocultural (environment) factors. The biological element of the model refers to pathogens like germs and toxins precipitate illness. In this study, the actual condition of pregnancy is recognized as the biological component. In the psychological aspect, the health problem can be caused by psychological determinants such as lack of self control, emotional turmoil, and negative thinking (Engel, 1977). For example, if a person chooses to over eat, it could result in weight gain. If a person experiences a trauma or chronic stress, there is a harmful effect on their health. Or if a person has extremely negative perceptions about their condition, they may be less likely to be compliant with treatment. Having folklore beliefs affects the behaviors of an individual contributing to wellness. Furthermore, the social component explains how different social factors such as socioeconomic status, culture, poverty, technology, and religion can influence health. This model presumes that it is important to consider all three factors when managing health problems (Tasman et al., 2008). It is important that health care providers consider all the components of the client's health and recognize they may interact directly or indirectly with each other.

The theory of *Interpersonal Relations* explains that the purpose of nursing is to help others identify their "felt difficulties" (Potter & Perry, 2009). The concerns or questions about pregnancy and pregnancy folklore beliefs would qualify as felt difficulties. The nurse has many roles including stranger, teacher, and resource person which are all applicable to this study. Even though the client may not be a stranger, the nurse may be confronted with pregnancy beliefs that she is unfamiliar or unaccustomed to so being aware of self including beliefs and reactions is key (Vandermark, 2006). In the teacher role, the nurse would be informing about the validity of a pregnancy belief or how to manage a pregnancy. As a resource person the nurse provides specific needed information from evidence-based sources in a non-judgmental and

easily understood way. In the interpersonal relationship, there are four sequential phases: orientation, identification, exploitation, and resolution. The successful completion of the relationship occurs after other phases are completed successfully (Potter & Perry, 2009). In nursing acceptance of values, culture, and beliefs in the initial orientation is very important. Lastly, the central purpose of Transcultural Nursing is "to discover and explain diverse and universal culturally based care factors influencing the health, well-being, illness, or death of individuals or groups" (Leninger, p. 3, 2002). With an increasing multicultural population in the United States, there is a significant challenge to nurses providing individualized and holistic care to their patients. This requires nurses to recognize and appreciate cultural differences in healthcare values, beliefs, and customs. Nurses must acquire the necessary knowledge and skills in cultural competency. Culturally competent nursing care helps ensure patient satisfaction and positive outcomes (Maier-Lorentz, 2008). It is important to be aware of one's own beliefs before providing culturally competent care.

Statement of the Problem

The mystery of life, vulnerability of uninformed patients, and the value of information health care providers such as nurses and nurse midwives can share with their clients are elements crucial to healthcare during pregnancy and birth. The objective of this study was to explore prevalence of pregnancy related folklore beliefs by conducting a survey of Certified Midwives and Certified Nurse Midwives (CM/CNMs) in the United States. Specifically, we addressed three research questions:

1. What are the folklore beliefs most commonly encountered by nurse-midwives in the United States?
2. Does the prevalence of folklore beliefs differ by geography of practice area?

3. Does the type of folklore beliefs differ by the ethnicity and culture of the nurse-midwifery clientele?

Significance

Common advice in pregnancy, such as the treatment for a condition like nausea and vomiting, may be based more on anecdotal evidence than rigorous scientific evidence, highlighting a need for more research in this area (Wills & Forster, 2008). The proposed research will provide insight into what pregnancy folklore beliefs midwives are hearing from their patients and families. This information will provide a basis from which we can develop a manuscript that includes suggested responses that health care providers can use when patients ask them about the folklore beliefs. A literature review will present a brief glimpse into the historical pregnancy folklore for assessment of past and current beliefs. This review also describes some beliefs which may actually have a scientific basis. Additionally, the data from this study may provide supplementary information related to cultural beliefs that can then be used to provide more culturally sensitive care.

Definition of Terms

In order to enhance comprehension of the material, it is necessary to clarify terms used in this study.

- A Pregnancy Folklore Belief is a belief that a client or family has regarding pregnancy or birth. They may arise from culture, history, tradition, family, popular or common trends, and or religion.
- U.S. Regions/Census Bureau Regions are the four geographic sections of the United States according to the U.S. Census Bureau. They are titled: Northeast, Midwest, South, and West. They are the areas composed of states that subdivide the United States.

- Census Bureau Divisions are the division of each region into two groups of states; the south region has three divisions.
- Certified Nurse Midwives are "licensed, independent health are providers with prescriptive authority in all 50 states, the District of Columbia, American Samoa, Guam, and Puerto Rico. CNMs are defined as primary care providers under federal law. Because CM is a newer, equivalent pathway to midwifery, it is not yet reflected in all state legislatures. CMs are authorized to practice in Delaware, Missouri, New Jersey, New York, and Rhode Island. CMs have prescription-writing authority in New York" (midwife.org).
- Client Populations are the clientele groups of the midwives surveyed.
- "Modern" Health Care is health care provided currently or recently in the 21st century in the United States that follows western medicine and uses evidence-based practice, science, and technology to treat illness.
- Non-Judgmental Acceptance is acceptance of the client regardless of the presence pregnancy folklore beliefs.
- CNM stands for Certified Nurse Midwife.

Scope and limitations

There are currently over 13,000 CM/CNMs in the United States, the vast majority being CNMs. For this study we used a random sample of 1000 CM/CNMs in the United States that are members of the American College of Nurse Midwives (approximately 8000) stratified over the four census bureau regions. With a survey of 15 items, the prevalence of pregnancy folklore beliefs were explored according to the frequency heard with space left after each item for additional comments. Additional comments provided a small amount of miscellaneous data.

Statistical analysis were performed to determine significance of any beliefs heard more frequently and to detect any trends in the data with regard to geographic area or race/ethnicity of the CM/CNMs client population.

To enhance the quality of the data according to the normal distribution, this study could have used a bigger sample. Perhaps surveying 3,000 individuals in a pool of 8,000 ACNM members instead of 1,000 would achieve this. To enable the ability to see greater difference in regards to prevalence of folklore beliefs by geography, use of the census bureau divisions instead of regions may be necessary. A smaller area may facilitate a more detailed view of where different types of beliefs originate, while a larger region covering an extensive area may have compensated for potential patterns.

In addition, because there are many more CNMs than CMs in the study, we inadvertently left CM off the study materials even though they were included in the study sample. The survey tool could have been more specific to include which myth was heard according to ethnicity or culture. More specific questions could be included under each item in order to gather more specific information about providers such as what their response was to each folklore beliefs. Because of the lack of prior research related to this topic, a qualitative research method using focus groups or interviews may have been of benefit.

Assumptions of the Study

We hypothesized that there are some folklore beliefs which are more commonly heard than others, that the prevalence of pregnancy folklore beliefs would differ by geography, and that the type of pregnancy folklore beliefs would differ by the ethnicity and culture of CM/CNM. Furthermore, we proposed that scientific evidence could be found to support some of the pregnancy folklore beliefs commonly used.

Review of Related Literature

Some beliefs from the past have survived until the current time while others have faded away. In order to explore beliefs of the past and their roots, it is important to delve into historical literature. Throughout the ancient times, mystery surrounded pregnancy. Birth and death viewed in relation to cycles of the earth (planting/harvest), the moon, and the tides. Women were likened to a ploughed field being that was either barren or fertile (Engelmann 1882). There was a general fear of evil spirits surrounding this stage of life along with a large influence of religion. Pregnancy folklore beliefs involved the use of midwives, amulets, rituals, and sacred trees and waters (Engelmann, 1882). When examining the practice of ancient times, viewing pregnancy in relation to moon's lunar cycles may not have been too unsophisticated. According to studies, there is scientific support to the lunar effects on pregnancy. Chapentier (2005) analyzed of 37 years of birth data involving 470 lunar cycles and over 29 million births and found a small, yet statistically significant difference in the number of births on a short window around the full moon. There were an additional 9 births per 2,000 a day during a full moon with a significant drop of birth rates after the first quarter moon. Simply put, there is the possibility that the gravitation of the moon alters the frequency of births, yet the phases of the moon do not have an effect. It was confirmed that the number of births increased significantly during periods of gravitation of less than 31.5 Newtons, unrelated to moon phases (Ryotaro et al., 2000).

In Tudor and Stuart Europe during the late 15th and early 18th century, a great number of folklore surrounded pregnancy and birthing. Women in this period were left uneducated beyond management of a household, needlework, and meal preparation. Often considered burdens beyond the age of 14, girls were taught that they were inferior to men and that their sole purpose

was to serve man, marry, and give birth (Gelis, 1991). Folklore consisting of entities such as magic, potions, elixirs, poultices, charms, and spirits were held in this time period. Many used them to cope with and explain unknown processes regarding pregnancy. Examples include women drinking an elixir of sheep urine and having intercourse during a full moon to increase fertility, burning a toad and using the powder to reduce a heavy menstrual flow, and use of dangerous mercury or pennyroyal to keep from getting pregnant (Eccles, 1982).

Galen's perspective that women had to experience orgasm to release female sperm to result in pregnancy was widely accepted in this period (Flemming, 2000). The church also had a very prominent influence over beliefs about sexuality; that women should never take pleasure and it should only be used for procreation. They mandated this was best achieved if she laid still in the missionary position. While a woman was pregnant, sex was forbidden by the church. it would be concluded that it was done for pleasure (Dewhurst, 1980).

The most important task of a wife was to deliver a son to continue the family name. They falsely believed that the woman was responsible for the outcome of a baby's sex. Additionally, folklore beliefs involved suspension of a ring over the abdomen to watch whether it swung back and forth or circular (Eccles, 1982). For giving birth, which was quite dangerous, many different practices were employed. Births were typically attended by a midwife- usually an elderly female that was a neighbor or relative who had experienced many births. Some examples include use of a birthing stool, then the practice of bed births, having hot water available to sanitize, stretching of the vaginal tissue, several weeks of pre-birth confinement (lying-in), bloodletting, and ultimately the creation and use of forceps (Eccles, 1982).

Bloodletting was an acceptable practice because it was believed that women needed to have a good menstrual flow or flowers to be considered healthy. Restoring a blood flow or

making one bleed was then believed to place their body back into equilibrium (Flemming, 2000). Because of beliefs and misconceptions regarding pregnancy, hygiene was not practiced. The midwife was the major and trusted supplier of care until the eventual entrance of the doctor and medicine practice, at which time midwives were looked down upon as ignorant (Eccles, 1982).

This period of the treatment of pregnancy was steeped in folklore belief that was referred to as common knowledge. Since then, there have been many changes, but the trials and errors of this time period allowed a basis on which to build more current knowledge. The high mortality rate of newborns and mothers during this time presented as highly problematic (Eccles, 1982). While advances in healthcare in the developed world have decreased these rates some beliefs from this time period have survived. Examples of these beliefs include not having intercourse during pregnancy because it may injure the fetus, females positioning themselves during intercourse to improve fertility, using a ring to determine the fetal sex, and birthing in the presence of caring well-known individuals.

Fast forward to the antebellum slave period in the colonial United States. Pregnancy and reproduction was a very crucial component in slavery in order to ensure a continuous supply of free laborers. In 2006, Schwartz explains that men and women were often forced to be together and produce children. Sometimes strong laborer men who proved to be good workers had several women they were made to reproduce with in an attempt to produce offspring with their traits. In efforts to increase the reproduction of slaves, masters encouraged women to bear children as quickly as possible. While women usually sold for less, women who were "good breeders" could often sell for more than a man at the slave auction.

Unfortunately, it was not uncommon for some masters, their sons, visitors, laborers, or even traveling salesmen to rape slave women and cause many unwanted pregnancies (Schwartz,

2006). Slave women wanted to control the number of pregnancies placed on them. Pregnancy as a slave could be described as a curse because they were still required to engage in strenuous activities such as a day at the wash tub, scouring, plowing, and harvesting crops. In addition, punishment was still performed on pregnant slaves. The beatings continued by having a woman lay face down on a hole that she dug to protect her abdomen (Schwartz, 2006).

When considering the importance of reproduction and the common traumatic experience of pregnancy for black slaves, it is not surprising that we find many pregnancy folklore beliefs from this time period. Being able to have say over little in their lives, slave women wanted to control when they became pregnant. Their methods to prevent and abort pregnancy were easily obtained and performed. Sage tea, breast feeding infants till the age of two, ingesting cotton root, dogwood tea, Jimsonweed, drinking gunpowder mixed with milk, and a teaspoon of turpentine each morning for 9 days after were some strategies used (Schwartz, 2006). A belief that is still held today was that they could regulate fertility during sexual intercourse. Holding a brass pin or copper coin under their tongue during coitus, lying completely still during, or turning on their left side after was believed to prevent pregnancy (Schwartz, 2006).

Perhaps from a cultural perspective, slaves held several general pregnancy folklore beliefs rooted in their African descent. They believed that a mother's experiences would mark an infant in utero, that cravings for particular foods by women were best if indulged, and that a pregnant woman being in wet conditions was bad for several reasons including catching cold (Schwartz, 2006). In communities of immigrants from Sierra Leone, belief in the different meanings for pregnancy cravings, not looking upon ugly sights to prevent ugly babies, and hot and cold theory are still held (Phillips, 2005).

Scientifically, it may not be wise to overlook some of these captivating and insightful traditions and beliefs. For example, the myths about heartburn and having a hairy baby, periodontal disease, and fetal heart rate have been researched and supporting evidence has been found.

In regards to fetal heart rate (FHR), the relatively common folklore belief states that if it is 110 to low 130's it will be a boy and if it is high (140-160) beats per minute, then it will be a girl. Along with leaving the middle area between the two heart rate categories open for uncertainty, Wojakowski et al. did not find any difference between male and female fetuses with respect to PR interval in the cardiac rhythm (2009). With a PR interval being a measurement of the time it takes electricity to be conducted from one part of the heart to another with contraction and relaxation, it is directly affected by FHR. If FHR is high, then the PR interval is shorter and if FHR is low number, then the PR interval is longer. This supports that FHR alone is not a predictor of fetal sex.

However, if FHR is analyzed in regards to the way it responds to startle and behavioral states, there is a connection with fetal sex. In 2008, male fetuses exhibited significantly more linear and significantly less complex FHR variability than female fetuses, expressing signs of a more active autonomous nervous system and less active complexity control systems (Bernardes et al.). In addition, there were considerable differences between male and female fetuses in response to magnitude and the pattern of maturation. As a primary sex difference in FHR, there was a larger response in male fetuses at 31 and 37 weeks of gestational age. Despite the pattern of response after stimulation being similar, the males had a nearly two-fold larger FHR response than the females (Buss et al., 2009).

Another pregnancy folklore belief states that a woman will lose a tooth for every pregnancy. Perhaps this may seem a bit dramatic, but if we present the higher risk of pregnant women for periodontal disease, then it becomes more reasonable. Wener and Lavigne (2006) explain that because of the sensitivity to plaque, a lot of pregnant women report swollen, tender and bleeding gums. This is known as pregnancy gingivitis which puts women at risk for periodontitis, a bacterial disease that can cause gum and bone erosion. This may then lead to loose teeth. Hence, lose a tooth for every baby. They also state that periodontal infection itself causes the release of prostaglandins (PGE2) into the systemic circulation. The presence of prostaglandins is related to labor and abortion, so they suggest periodontal disease can lead to premature delivery.

For women experiencing heart burn during pregnancy, the folklore belief of having a baby with a full head of hair serves to explain this phenomenon. In a study by Costigan, Sipsma, and Dipietro, 64 participants, most women (23 of 28), reporting moderate to severe heartburn gave birth to babies with average to above average hair. Most women who reported no or little heartburn gave birth to babies with little to no hair. Hormonal activity with estrogen and other sex steroids increases the number of scalp hair follicles in the growth phase of a fetus and synchronizes follicles in the resting phase, which inhibits hair shedding. They proposed that individual variation in levels of pregnancy hormones can relax the lower esophageal sphincter, resulting in reflux (Costigan et al., 2006).

In summary, pregnancy has long been associated with traditional folklore beliefs. Some beliefs, such as “if a woman is carrying high, the fetus is a girl” may have no scientific merit but are not inherently harmful. Others, such as “if you have heartburn your baby will have a lot of hair” have been studied and there is limited data to actually support the beliefs. Still others, such

as “if you raise your arms above your head the cord will wrap around the baby’s neck”, while not inherently dangerous, may result in avoidance of beneficial physical activity and undue emotional stress. Nurse midwives and other obstetric providers are often asked about these beliefs by patients and their families. Optimally, providers would be prepared to respond to such questions both with data to either support or refute the beliefs but also with non-judgmental acceptance of the patient and family and the role and value of tradition and culture in “modern” healthcare.

Methods

This study used a descriptive survey methodology. Data collected was entered into SPSS statistical package. Analysis included basic descriptives such as percentages. We also compared findings for various geographic areas using an Analysis Of Variance (ANOVA) group comparison. Data was presented by the student researcher at the School of Nursing Scholarly Event in spring 2013. Results were presented at the ACNM national meeting in Nashville in 2013. A manuscript will be submitted for publication in the Journal of Midwifery and Women’s Health.

Research Procedure

With the informed consent process, we requested that participants not sign a written document. In the email, participants were informed that by completing and submitting the questionnaires consent was implied (Appendix B). The reason for not obtaining written consent was two-fold. First, the only record linking the participant and the research would be the consent document and the principal risk would be potential harm resulting from breach of confidentiality. Second, signed informed consent would be impractical because the data will be collected via an internet survey. In the email letter it was made explicit that the study is voluntary. The

participants could choose not to answer any of the questions and the data collected was anonymous, confidential, and used only for study purposes. No identifiers such as name, date of birth, or address were linked with the data.

The email sent described the study purpose, the study design that included informed consent language and a link to the survey was sent to the email addresses obtained from the ACNM. A Survey Monkey questionnaire was used to gather demographic data on the CM/CNMs such as years of practice, (Appendix C). Pregnancy folkloric beliefs for the survey were gathered from a review of the literature as well as from experienced nurse-midwives. The frequency of selected myths was determined using a four-point Likert scale (never-1, seldom-2, occasionally-3, frequently-4). For each folkloric belief we asked participants; "if in your experience the belief is more prevalent in a certain race/ethnic/cultural group please indicate in the text box below". A comment box was included at the end of the survey to allow for additional responses. Depending on the initial response rate, a reminder email would be sent out two weeks later. At one month post first email, the survey was closed and data collection completed. All data was kept on a password protected computer in the Principal Investigator's locked office at the College of Health and Human Services.

Setting and Participants

To ensure quality in healthcare, there are many regulatory bodies and organizations that endeavor to promote education of health care providers and patients. The American College of Nurse Midwives (ACNM) is the professional association for CMs and CNMs in the United States and sets the standard for excellence in midwifery education and practice. Members of the ACNM affirm the power and strength of women and the importance of their health in the well-being of families, communities and nations. They state the best model for women and family

respects human dignity, individuality and diversity while providing complete and accurate information to make informed health care decisions. With the use of therapeutic communication, they promote a continuous and compassionate partnership that honors the normalcy of women's lifecycle events. The close, trusting relationship between patient and midwife may allow the patient to comfortably confide or discuss pregnancy folklore beliefs.

With a total of 13,155 Certified Nurse Midwives/ Certified Midwives (CNM/CM) attending 309,514 births and having individuals located over every part of the United States along with other nations, these health care professionals have potential to make a sizeable impact on the birthing population (ACNM, 2013). Study participants were CNM and CMs who were active members of the ACNM. Once IRB approval was granted, a request was made by the Principal Investigator (who is a longtime member of the organization) to send an email invitation and study link to a sample of 1000 stratified by geographic area. There was a formal process for this (Appendix A). There are approximately 8000 nurse-midwives that are active members (midwife.org). The typical response rate for surveys of this sort is between 8-10% (personal communication with the Division of Research Chair). We were hoping to get a response from midwives practicing in a diverse geographic area with a variety of ethnic populations.

There was no cost associated with participating. There was very minimal risk of breach of confidentiality that was minimized by not including names or other identifiers in the data collection. There was no compensation for participation.

Confidentiality and Treatment of Data

Email invitations and link were sent by the ACNM IT department. The Survey Monkey Questionnaire was anonymous and not linked with the email addresses. An ID number was used for each survey submission that was not linked with the participants name or email address. The

only potential identifiers would have be the state of midwifery practice and years of practice. Data was entered into an SPSS data file kept on the same password protected computer located in the Principal Investigator's locked office and backed up on an external hard drive located in the same office. All data will be kept for three years in the same location.

Statistical Methods

Participant sample was analyzed using descriptive statistics. Mean and range of years of midwifery practice were determined. Practice location was categorized by geographic US region. To answer the research question "What are the folklore beliefs most commonly encountered by nurse-midwives in the United States?" we determined the mean answer for each response. For the research question "Does the prevalence of folklore beliefs differ by geography of practice area?" we determined the total score for prevalence of all folkloric beliefs and utilizing one way between groups analysis of variance (ANOVA) we explored the difference in scores between the US regions. For the research question, "Does the type of folklore beliefs differ by the ethnicity and culture of the nurse-midwifery clientele?" We asked participants for each folkloric belief; "if in your experience the belief is more prevalent in a certain race/ethnic/cultural group please indicate in the text box below". Responses were then categorized by race/ethnicity and explored using percentages.

Results

Response rate was 20% (n=202 CM/CNMs). Mean years of midwifery practice was 15.8 (range 1-39) and response rates were distributed across the four US regions (22.8% NE, 21.8% MW, 29.7% South and 24.8% West). Prevalence of beliefs did not differ by region. There was not a significant correlation between years of midwifery experience and total score on the prevalence of folkloric beliefs scale.

Six beliefs were more prevalent on preliminary analysis of mean score based on the range of 1 (never heard) to 4 (frequently heard): how you are carrying predicts the sex of the baby (3.18), fetal heart rate predicts the sex of the baby (3.73), a full moon will start labor (3.27), eating spicy food will start labor (3.01), "mother had a long/quick labor, so I will too" (3.23), and heart burn = full head of hair (3.56); see *italicized* items in Table 1.

Participants reported hearing most pregnancy beliefs from clients of a variety of races/ethnicities. However, two myths were reported to be heard more from Hispanic women: raising your hands above head will cause the cord to wrap around the baby's neck and if a woman sees something ugly she will have an ugly baby (see items with asterisk in Table 1).

Table 1

Frequency of beliefs heard

Pregnancy belief	**Mean score (SD)**
Shape of your face predicts the sex of the baby	1.31(.71)
How you are carrying predicts the sex of the baby	*3.18 (.76)*
Fetal heart rate predicts the sex of the baby	*3.73 (.51)*
A full moon will start labor	*3.27 (.88)*
Eating spicy food will start labor	*3.01 (.86)*
"Mother had a long/quick labor, so I will too"	*3.23 (.77)*
A girl will steal her mother's beauty	1.29 (.64)
Lose a tooth for every pregnancy/baby	1.73 (.80)
Heart burn = full head of hair	*3.56 (.76)*
Raising your hands above head will cause the cord to wrap around the baby's neck*	2.69 (1.00)
Don't take a bath/go swimming when pregnant	1.97 (.90)
If a woman sees something ugly she will have an ugly baby*	1.48 (76)

In addition to the survey, information was gathered from the comment box portion. There were a total of 74 responses, with a vast majority of 64 addressing a folklore belief. When looking at response content, there were three categories addressed most frequently. In detail, 18 comments pertained to beliefs about eating, food, or drinking, 12 involved gender prediction of the baby, and 11 mentioned the use of safety pins. Of the 74 total, 37 involved culture related

statements with the more frequently ethnicities being noted as Hispanic, Caucasian, African American, Asian, and Navajo. The majority of statements were from the Hispanic population (21/37). There were also comments that pertained to a nonspecific group of people variety of ethnicities.

Discussion

According to the results, some pregnancy folklore beliefs are more commonly heard by CM/CNMs than others. This may be because some folklore beliefs have more scientific merit or commonly perceived logic than others. The prevalence of beliefs did not differ by US geographic region. This could be because each region was quite a vast area. Perhaps any significant concentration of beliefs in a location was diluted by the overall beliefs of the immense area. It also could be from the ease and rapid transfer of information. People are easily able to travel to different parts of the country to disperse beliefs with well-developed infrastructure and easily accessible transportation. Additionally, with the frequent and relatively effortlessness of the internet, information is spread immediately and acquired very easily.

There was no correlation between years of midwifery practice and how frequently the CN/CNMs reported hearing pregnancy myths. This suggests that pregnancy folkloric beliefs are still quite commonly heard.

There were two myths reported by more by Hispanic populations, which supports the hypothesis that type of belief will differ by culture or ethnicity. Yet, the majority of the midwives indicated that they heard a variety of beliefs from different ethnic or cultural populations. More research is needed to further clarify findings. Possibly by addressing other members of the perinatal care team besides CNM/CM, there will be a yield of different results.

Considerations

The mystery surrounding pregnancy has enabled the creation of folklore, beliefs, and superstitions to explain the phenomenon. For centuries many relied on these beliefs, but in the modern day there has been a heavier reliance on scientific fact. Exploring the past may enable further explanation of current customs and beliefs. Historically, the diversity of the world's cultures translated into differences in beliefs and customs regarding pregnancy. This study helped to identify some myths that have been heard more frequently than others. Is there a reason for this? Surprisingly, some myths do have scientific grounding and may have been repeated in families through generations because they have been repeatedly supported by outcomes.

There should be non-judgmental acceptance of patient and family. Placing judgment on an individual can engaging in a pregnancy belief is the near equivalent of having a prejudice (implies ignorance) against the person. If a certain activity like placing a pin on the diaper or wearing a safety pin while pregnant is not harmful, judgment should not be cast on the client. If a patient's belief is incorrect, then yes, we should give the correct information, but that does not mean viewing them negatively. In the nurse patient relationship, these clients entrust us with their care and they rely on us to provide accurate and useful information on their condition, not to attempt to hamper their customs.

There is great importance in valuing tradition and culture in "modern" health care. Currently, there is a push toward modernization in health care. There is a great reliance on scientific studies and technology. Everything should be proven by research and the interventions we do should be based on factual evidence. This is in an effort to improve efficiency and positive outcomes. However, we should be sure that we do not inhibit traditions and culture,

especially if they pose no harm. Not only may they be able to grant woman and family a peace of mind, they may promote a sense of variety, interest, and creativity in life.

How can providers educate their clients in regard to these pregnancy folklore beliefs? If a patient may be relying on myth to complete an intervention that is evidence-based, then by all means encourage it. For example, a woman may state that she has to drink a lot of water during pregnancy because she has to drink herself "clean". Her provider could support her action. In a culturally competent way, the caregiver could assess the amount of water being consumed to determine if it is healthy. Then tell the patient it is good to drink water during pregnancy also to prevent constipation, bladder infections, and dehydration which could lead to preterm labor (Alden, Lowdermilk, Cashion, & Perry, 2009).

Conclusion

These research findings provide insight into common pregnancy beliefs and how providers can educate their clients in regard to these beliefs, but we see the need for further research. Even if some folkloric beliefs are not evidence based, being aware of their impact on pregnancy is important. For health care providers, especially nurses, it is necessary to include cultural factors, the three aspects of environmental, mental and physical health, and the concerns a woman may have providing care. It is significant to find out why a patient may engage in a certain activity or hold a certain belief. To fully understand the reason a person holds a belief, the history and culture of the individual and family should be taken into consideration. The safety of women and babies is of primary concern, but pregnancy folklore beliefs may allow families to practice their culture and values. Non-judgmental acceptance of patient and family and the importance of valuing tradition and culture in "modern" healthcare are central to the principles of holistic healthcare.

References

Alden, K., Lowdermilk, D., Cashion, M., & Perry, S. (2011). *Maternity and women's health care.* St. Louis, Missouri: Mosby Elsevier.

Bernardes, J., Gonçalves, H., Campos D., & Rocha, A. (2008). Linear and complex heart rate dynamics vary with sex in relation to fetal behavioural states. *Early Human Development 84*, 433-439. Retrieved from http://www.sciencedirect.com.libproxy.library.wmich.edu/science/article/pii/S0378378207002411

Buss, C., Davis, E., Class, Q., Gierczak, M., Pattillo C., Glynn, L., & Sandman, C. (2009). Maturation of the human fetal startle response: Evidence for sex-specific maturation of the human fetus. *Human Development 85*, 633-638. Retrieved from www.elsevier.com/locate/earlhumdev

Charpentier, A. (2005). Lunar cycles and birth rates: From a full moon to first quarter moon effect. Rennes, France: CREM-Université Rennes.

Centers for Disease Control and Prevention. (2013). Births: Final data for 2011. *National Vital Statistics Report.* Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_01.pdf#table01

Costigan, K.A., Sipsma, H.L., & DiPietro, J.A. (2006). Pregnancy folklore revisited: The case of heartburn and hair. *BIRTH, 33,* 311-314. Retrieved from http://www.jhsph.edu/fetal_study/_materials/_publications/heartburnhairfinal.pdf

Dewhurst, J. (1980). *Royal confinements.* London, England: St. Martin's Press.

Eccles, A. (1982). *Obstetrics in Tudor and Stuart England.* Kent, Ohio: Kent State University Press

Engelmann, G. (1882). *Labor among primitive peoples.* Retrieved from http://web.archive.o

rg/web/20080316193601/http://etext.lib.virginia.edu/toc/modeng/public/EngLabo.html

Flemming, R. (2000). *Medicine and the making of Roman women: Gender, nature, and authority from celsus to galen.* New York, New York: Oxford University Press.

Gelis, J. (1991). *History of childbirth: Fertility, pregnancy and birth in early modern Europe.* Boston, Massachusetts: Northeastern University Press.

Gregory, K.D., Johnson, C.T., Johnson, T.R., & Entman, S.S. (2005). The content of prenatal care: Update 2005. *Women's Health Issues, 16,* 198–215. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/16920524

Leninger M. (2002). Culture Care Theory: A Major Contribution to Advance Transcultural Nursing Knowledge and Practices. *Journal of Transcultural Nursing*, *13* (3), 189-192. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/12113148

Maier-Lorentz, M. M. (2008). Transcultural nursing: Its importance in nursing practice. *Journal of Cultural Diversity*. *15*(1), 37-43. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed /19172978

Phillips, W. (2005). Cravings, marks, and open pores: Acculturation and preservation of pregnancy-related beliefs and practices among mothers of African descent in the United States. *ETHOS, 33*(2), 231-255. Retrieved from http://onlinelibrary.wiley.com/d oi/10.1525/eth.2005.33.2.231/pdf

Polit, D. & Beck, C. (2009). *Essentials of nursing research: Appraising evidence for nursing practice, 7th edition.* Philadelphia, Pennsylvania: Lippincott Williams & Wilkins.

Potter, P., & Perry, A. (2009). *Fundamentals of nursing.* St. Louis, Missouri: Mosby Elsevier.

Schaffir, J. (2007). Do patients associate adverse pregnancy outcomes with folkloric beliefs? *Archives of Women's Mental Health*, *10,* 301-304. doi: 10.1007/s00737-007-0201-0

Schwartz, M. (2006). *Birthing a slave: Motherhood and medicine in the antebellum south.* Cambridge, Massachusetts: Harvard University Press

Vandermark, L. (2006). Awareness of self & expanding consciousness: Using nursing theories to prepare nurse-therapists. *Mental Health Nursing 27*(6), 605-615. Retrieved from http://www.ncbi .nlm.nih.gov/pubmed/16923732

Tasman, A., Kay, J., Lieberman, J., First, M., & Maj, M. (2008). *Psychiatry, third edition.* Retrieved from http://onlinelibrary.wiley.com/book/10.1002/9780470515167

Wener, M., & Lavigne, S. (2006). Can periodontal disease lead to premature delivery? How the mouth affects the body. *AWHONN Lifelines.* Retrieved from http://onlinelibrary.wiley.com/doi/10.1177/1091592304271624/abstract;jsessionid=A49407FEAAE66C4982D824AFD0669F78.d03t02

Wills, G. & Forster, D. (2008). Nausea and vomiting in pregnancy: What advice do midwives give? *Midwifery 24*, 390-398. Retrieved from www.elsevier.com/locate/midw

Wojakowski, A., Izbizky, G., Carcano, M., Aiello, H., Marantz, P. & Otan, L. (2009). Fetal Doppler mechanical PR interval: Correlation with fetal heart rate, gestational age and fetal sex. *Ultrasound Obstetric Gynecology 34*, 538-542. doi: 10.1002/uog.7333

Wake, R., Misugi, T., Shimada, K., & Yoshiyama, M. (2010). The effect of the gravitation of the moon on frequency of births. *Obstetrics and Gynecology*. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2956479/

Appendix A

Guidelines for Approval to Solicit ACNM Members for Research Purposes

This document provides guidelines for implementing "Policy for Solicitation of ACNM Members for Research Purposes" - #34

A. Requests to access members via the ACNM mailing list or to conduct surveys at the annual meeting must be sent to the ACNM National Office to the attention of the Director of Professional Practice & Health Policy, with one copy to the current Chair of the DOR Survey Section and one copy to the ACNM Senior Staff Researcher. Copies may be emailed (preferred) to the ACNM Sr. Staff Researcher and the DOR Section Chair. However, a signed IRB statement is required before approval can be given, therefore the IRB approval form will need to be either faxed or mailed.

Contact information for staff:
Tina Johnson, CNM, MS
Director of Professional Practice & Health Policy
American College of Nurse-Midwives
8403 Colesville Road, Ste. 1550
Silver Spring, MD 20910-6374
(240) 485-1840
tjohnson@acnm.org

Dr. Kerri Schuiling, CNM, PhD, FACNM
Senior Staff Researcher
American College of Nurse-Midwives
Email: schuilin@oakland.edu

B. Requests for the ACNM membership mailing list will be processed within 3-4 weeks of receipt of all materials. Requests to survey members at the annual meeting MUST be received at least 6 weeks before the first day of the annual meeting. All requests must include the following materials:

1. A cover letter describing:
    1. Purpose of the research
    2. Rationale for the use of CNMs/CMs as research subjects
    3. Proposed time frame for contacting the CNM/CM participants
2. Copy of approval of the research by the appropriate Institutional Review Board
3. Curriculum Vita of the researcher
4. All materials that will be given to CNM/CM participants, including
    1. Research instruments
    2. Cover letter, consent form and/or information sheet for participants that addresses:
        a. The purpose of the research
        b. Assurance of participant anonymity
        c. Assurance of the right to non-participation

d. Potential risks and benefits to participants
e. Time required of participants,

5. Student proposals must have a letter from the faculty advisor, stating that s/he has reviewed the proposal and assumes faculty responsibility for the proposed research activities.

C. The ACNM Senior Staff Researcher and the Chair of the DOR's Survey Committee will review each proposal to ensure that the materials are complete and in order. Once the request is approved, a statement that "Solicitation of CNM/CM participants for this study has been approved the ACNM" should be added to the consent form or information sheet.

D. Surveys meeting the above completed requirements will be approved in the order received, up to a maximum of 5, which can be distributed at the ACNM annual meeting.

Source: Board of Directors
Approved by ACNM BOD 9-06
Revised 6-09
Revises previous documents from 4-02, 9-02, 3-04

Appendix B

Email Recruitment Script

Western Michigan University, School of Nursing
Principal Investigator – Ruth Zielinski PhD, CNM
Student Investigator – Iris Campbell
Study Title - Prevalence of pregnancy folkloric beliefs among nurse-midwifery client populations.

Hello, my name is Iris Campbell. I am a nursing student performing research for my thesis through the Lee Honors College of Western Michigan University. The purpose of my study is to explore pregnancy related folklore beliefs by conducting a survey of Certified Nurse Midwives in the United States. We want to know the most commonly encountered beliefs, if the prevalence of beliefs differs by practice area, and whether the type of belief varies by ethnicity and culture in nurse-midwifery clientele.

Below is a link to Survey Monkey. Please complete the survey of demographic information and indicate how frequently you have heard the listed myths or beliefs. Feel free to provide comments and additional myths/beliefs you may have heard. You may choose to not answer any of the questions. Submitting your answers will indicate that you are giving consent for your answers to be used for this research. The information collected will be completely anonymous, confidential, and only used for study purposes. No personal identifiers will be linked with the data. Participation in the study is completely voluntary.

If you have questions, contact me at (810) 278-5904 or iris.a.campbell@wmich.edu, or Ruth Zielinski PhD, CNM (my advisor) at ruth.zielinski@wmich.edu or (269-387-8190). You may also contact the Chair, Human Subjects Institutional Review Board (269-387-8293) or the Vice President for Research (269-387-8293) if questions or problems arise during the course of this study.

Thank you for your time and consideration,

Iris Campbell & Ruth Zielinski

Link to questionnaire:

Appendix C

Prevalence of pregnancy folkloric beliefs among nurse-midwifery client populations. Exit this survey

For each of the myths/beliefs listed please indicate how often you encounter them in your practice. If in your experience the myth/belief is more prevalent in a certain race/ethnic/cultural group please indicate which race/ethnicity/culture in the text box below the item.

1. The shape and fullness of your face during pregnancy can indicate your baby's sex.

Never heard | Rarely heard | Occasionally heard | Frequently heard

Race/ethnic/cultural group

2. If a woman is carrying low, it's a boy. If she is carrying high, it's a girl.

Never heard | Rarely heard | Occasionally heard | Frequently heard

Race/ethnic/cultural group

3. The sex of the infant can be predicted by the fetal heart rate.

Never heard | Rarely heard | Occasionally heard | Frequently heard

Race/ethnic/cultural group

4. A full moon will start labor.

Never heard | Rarely heard | Occasionally heard | Frequently heard

Race/ethnic/cultural group

5. Eating spicy food will start labor.

Never heard | Rarely heard | Occasionally heard | Frequently heard

Race/ethnic/cultural group

6. . "My mother had a quick/long/easy/hard labor, so I will too."

Never heard | Rarely heard | Occasionally heard | Frequently heard

Race/ethnic/cultural group

7. A girl will steal her mother's beauty and therefore cause acne.

Never heard | Rarely heard | Occasionally heard | Frequently heard

Race/ethnic/cultural group

8. Lose a tooth for every pregnancy/baby.

Never heard | Rarely heard | Occasionally heard | Frequently heard

Race/ethnic/cultural group

9. Heart burn = full head of hair

Never heard	Rarely heard	Occasionally heard	Frequently heard
○	○	○	○

Race/ethnic/cultural group

10. Raising your hands above your head will cause the umbilical cord to wrap around the baby's neck.

Never heard	Rarely heard	Occasionally heard	Frequently heard
○	○	○	○

Race/ethnic/cultural group

11. Don't take a bath/go swimming when you are pregnant.

Never heard	Rarely heard	Occasionally heard	Frequently heard
○	○	○	○

Race/ethnic/cultural group

12. If a pregnant woman sees something ugly she will have an ugly baby.

Never heard	Rarely heard	Occasionally heard	Frequently heard
○	○	○	○

Race/ethnic/cultural group

Please provide the following information about your midwifery practice

13. How many years have you been practicing as a midwife?

Years

14. In which state do you currently primarily practice?

15. In the box below please add any comments such as other myths/beliefs that you have heard. Thank you very much for participating in this survey.

Prev Done