

12-2022

Effects and Outcomes of Different Laboring Positions and the Influence from Societal Norms

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<https://doi.org/10.33015/dominican.edu/2022.NURS.ST.21>

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Heskett, Amberlyn, "Effects and Outcomes of Different Laboring Positions and the Influence from Societal Norms" (2022). *Nursing | Senior Theses*. 65.
<https://doi.org/10.33015/dominican.edu/2022.NURS.ST.21>

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For infants and mothers, what are the potential effects and outcomes of different laboring positions and how do societal norms affect the positions used in the United States?

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NURS 4500. SP.2: Nursing Research and Senior Thesis

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February 1, 2022

Acknowledgments

To my friends and family who have supported me throughout the years, I am so thankful to have had you by my side and I would not be here without you. To my Dad who supports me through everything that I do, I love you and thank you for believing in me and helping me through everything, and sacrificing so much for Gabe and me. To my best friend Maddie, for always being by my side through the best and the worst times, and always making it an adventure. Thank you to Patricia Harris, Debbie Daunt, and the rest of the nursing program coordinators for guiding me through this time.

Amberlyn Heskett '22

Abstract

Background

Within labor and delivery, every birth is different. Alarming, the U.S. has the highest maternal mortality rate, including death during labor, among developed countries (World Health Organization, 2022). Many maternal deaths may be preventable.

In the U.S., the use of forceps, vacuum-assisted birth, episiotomies, and emergency C-sections are common for women during childbirth. Even though some laboring positions may assist birthing more than others, there often is resistance to allowing various positions due to outside influences, including societal norms, hospital management, and healthcare professional training. Women in labor are vulnerable and look to their nurses for support during the birthing process. Nurses who know the potential effects of different positions can support the laboring mother and may be able to offer guidance to improve birthing outcomes.

Objectives

- ❖ To compare and contrast the effects and outcomes of different laboring positions used worldwide.
- ❖ To explore how societal norms in the United States affect the standard positions that are used today.

Methods

A literature review was performed of primary studies to examine different labor positions and methods. A meta-analysis, randomized control trials, and other well-designed studies were chosen for closer scrutiny. Different laboring positions worldwide as well as the standard methods that are used in the U.S. were investigated.

Results

In the U.S., the standard method to deliver vaginally is lying in a recumbent/semi-recumbent position to allow easy access for the healthcare providers. Studies have shown that other positions such as squatting, side-lying, or being on hands and knees can have many benefits to help the mother during delivery including easing pain, faster delivery, and better fetal and maternal outcomes. In many societies, these other positions are used routinely, but the U.S. is one of the only countries that does not use these alternative positions. Labor practices that are used in other countries may help inform care for women during labor.

Proposal for further research

The research question that then arises is: If the U.S. changes its standards of vaginal births and uses more alternative birthing positions, could there be better maternal and fetal outcomes? A study to help answer this question will be proposed.

Keywords: labor positions, birth, societal norms, maternal/fetal outcomes

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Introduction

Millions of people give birth every year. Within labor and delivery, every birth is different. Some people give birth vaginally while some have a cesarean section. Some people give birth lying on their back while some people give birth standing up or even in water (Deliktas A, Kukulu K 2018). In different cultures, there have formed different standards for the “right” way to give birth. In the United States, it has become standard practice to have women give birth in a supine position to help with easy caregiver access and fetal heart rate management, but in other countries, there are different standards including a birthing bench, water births, and many others. It has been found that these different positions can influence infant and fetal outcomes (Alfirevic et al, 2017).

Problem Statement

These outcomes include using forceps or having a vacuum-assisted birth, episiotomies, fetal heart rate patterns, emergency c-sections, etc. Even though some positions may work better than others, there is often hesitation due to outside influences such as societal norms, hospital management, and methods of training healthcare professionals. Those who are in labor are in a vulnerable state and look to their caregivers/nurses for support during the laboring process and it can make a big difference when the health care professionals know the different effects of different methods and support the laboring mother in her decisions during birth (Musie et al, 2019).

Research Question

Due to the abundant amount of methods that can be used during delivery, for infants and mothers, what are the potential effects and outcomes of different laboring positions, and how do societal norms affect the positions used in the United States?

Literature Review

The objective of this literature review is to compare and contrast the effects and outcomes of different laboring positions used worldwide and to explore how societal norms in the United States affect the standard positions that are used today.

Search Strategy

Keywords used to find the articles were: labor, birth positions, and maternal/fetal outcomes. Databases that were used were Pubmed, Iceberg, UptoDate, and the Wiley Online Library. About 20 articles were examined to find the research needed for this Literature Review. The articles were chosen based on their relevance to the research question and their use of credible research methods. For this literature review, one scholarly article, tracing the historical roots of birthing positions, and 6 research articles were chosen for relevance to the topic. The articles were split into 3 categories: History of Birthing Positions; U.S. Birthing Standards and Societal Norms, Alternative Birthing Positions and Maternal and Fetal Outcomes. Please see the Literature Review Table in the Appendix for a summary of each article.

History of Birthing Positions

Birthing standards have changed over thousands of years and have been influenced for a variety of reasons. In every country, there is a different view on the “right” way to give birth. In the United States, laying in a supine position has been the primary position to give birth for the last 200 years. Before this time, the primary position that was used worldwide was to be in an upright position either kneeling, standing, or squatting. There are even portraits of Cleopatra giving birth in an upright position while leaning on a table and having 5 women attendants assist her during the labor process. During the Babylonian era, the primary birthing position was to use a birthing chair, a stool where the center was carved out (Dundes, 1987).

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Until 1550, it was almost unheard of to have a male assisting in the laboring process and midwives were the primary accoucheur during delivery. In the 1500s, a surgeon named “Pare” grew in popularity due to his advocacy to use a surgeon during deliveries. During this time, surgeons had a low status in society and felt that if they were pushed to be part of the laboring process their societal status would increase. They believed that they could better assist with maternal and fetal outcomes to prevent morbidity. It was also viewed that pregnancy was an illness and abnormal to make it seem like higher assistance from a surgeon was needed. Midwives still assisted with deliveries, but surgeons eventually pushed midwives out as the primary birthing assistant (Dundes, 1987).

After surgeons grew in popularity, the use of tools like forceps or anesthesia increased and surgeons such as Pare’s son in law, *Guillemeau*, advocated for women to lie on their backs as a comfort measure and to allow for easy access. This was also when the use of a bed during delivery grew in popularity, so the surgeon could have easier access if any complications occurred (Dundes, 1987). It is believed that the most influential reason for mothers to use a bed during delivery was from a surgeon named *Francois Mauriceau* who wrote the article, “The Diseases of Women with Child and in Child-Bed”. He believed that lying in a bed in a supine or semi-fowler position allowed for better comfort and better breathing for the mother, easier access for the surgeon, and gave the mother more strength to be able to push; especially if her feet were pushing against a hard surface (Mauriceau, 2000).

King Louis XIV of France was believed to also be of high influence on today’s birthing standards. Back when he was in power, King Louis XIV enjoyed watching women give birth and promoted them to lie in a reclined position so he would have a better view of the delivery. During these deliveries, he also insisted on multiple men accoucheurs to assist with the delivery

over women. Because he was fascinated with watching deliveries, King Louis XIV advocated for lithotomy surgeries and worked with surgeons, housed them, and gave them resources to make lithotomy surgeries more standard practice. This helped gain popularity for the lithotomy birthing position which was believed to help with the use of forceps and made it easier to give anesthesia to the mothers (Dundes, 1987).

In 1884, due to all of these worldwide influences, almost every country had its standard practice of birthing positions that were used. In the United States, it was reported that women would lie flat on their backs while English women would primarily lie on their left side. During this time, German women would use a birthing chair and French women would use an inclined position where one foot would be placed on a chair and the muscles and ligaments would be stretched on that side (Dundes, 1987).

Today, many hospital beds are built to be labor beds, OB tables, birthing chairs, birthing beds, critical care/surgical beds, and postpartum beds. Even though beds like these are made, alternative birthing positions are rarely encouraged. Birthing standards that are used today are not based on scientific research and were mainly promoted due to interprofessional struggles between surgeons and midwives to gain social status. With the resources we have today, it is time to do better research and promote birthing methods that will have the best maternal and fetal outcomes (Dundes, 1987).

United States Birthing Standards and Societal Norms

In 2014, Lamaze International created a survey called “Listening to Mothers” which is a national survey comparing women’s childbearing experiences (Declercq et al, 2014). 2,400 women filled out the survey online and the results were compared by factors such as age,

race/ethnicity, parity, birth attendant, and mode of birth. After compiling the qualitative and quantitative data, it was found that in the U.S., the most common position used was the lithotomy or supine position (68%) due to the caregivers being able to assess the abdomen and check the fetal heart monitor which is reported to be used by 60% of mothers continually. Only 23% reported giving birth in an upright position. It was also reported that 78% of mothers used an obstetrician to be the primary caregiver during birth, only 8% used a midwife and 61% of the birth attendants were female, with 54% of the obstetricians being female. 75% of the women in the survey reported that they never even received education from other birth attendants such as a doula or midwife as an option during their delivery and 27% of these women reported they would have liked to use a doula if they had known about it (Declercq et al, 2014).

For pain management, 73% of mothers reported using at least one non-pharmacologic pain relief method during delivery including 48% using breathing techniques, 40% using position changes, 22% using hands-on massage techniques, and 21% using mental strategies such as relaxation or deep-breathing routines. The survey did not mention the specific breathing techniques and positions that were used, but 43% did report walking around as a mode of pain relief and to move the labor process along (Declercq et al, 2014).

Many of the women in the study had different experiences with the number of decisions that they made during the labor process compared to the number of decisions that were made for them by the care provider. Out of these decisions, it was reported that only 1% of the women who had a cesarean section chose to give birth this way. 59% of mothers agreed with the statement “Giving birth is a process that should not be interfered with unless medically necessary,” while 16% disagreed. Many of the mothers indicated that there was pressure to make certain decisions during their labor including pressure to accept labor induction, epidural

analgesia, and having their mode of delivery be through cesarean section; and only 8% reported feeling no pressure to make decisions about their labor. Overall, this survey rated health care during delivery as good or excellent by 80% of mothers, but 45% believe that labor should not be interfered with unless medically necessary (Declercq et al, 2014).

Birth Positions and their Fetal and Maternal Outcomes

Upright Positions (Standing, Squatting, Kneeling, Hands and Knees, Birthing Seat)

Upright birthing positions have been coined as an umbrella term for birthing positions including standing, squatting, kneeling, hands and knees, and the use of a birthing seat. Three studies were found that addressed upright positions and their different effects on the mother and baby (Gupta et al, 2017; Thies-Lagergren et al, 2013; Moraloglu et al, 2017). The standing and squatting position usually includes the mother being upright while the mother is using a bar, leaning on a hard surface, or using a partner as support. The hands and knees or kneeling position usually include the mother being on either all fours or on her knees while leaning on a hard surface such as a table or bar. The birthing seat is a stool where the center is carved out to allow space for the baby to be delivered (Thies-Lagergren et al, 2013). These positions are commonly referred to as flexible sacrum positions which take the weight off of the mother's tailbone, with the only exception being the side-lying positions that fall under the recumbent umbrella (Edqvist et al, 2016).

In a systematic review done by the Cochrane Library, Gupta and other researchers (2017) found that using upright positions can affect maternal and fetal outcomes. One of the biggest findings was for primigravid patients; upright positions can reduce the duration of the second stage of labor by a mean of 6.6 minutes and can reduce the episiotomy rates during delivery by 25%. These positions were also shown to reduce the chance of using forceps or having a

vacuum-assisted birth by 25%. Other important findings observed included the fetus was 54% less likely to have abnormal fetal heart rate patterns when lying in a recumbent or supine position. Some negative outcomes to look out for when using an upright position include mothers are 20% more likely to experience a second-degree tear than a mother in a recumbent position and they are 48% more likely to experience blood loss that is greater than 500mL during delivery; which is considered a significant amount of blood loss during labor. It was found that there is a 6.5% chance of excessive blood loss (blood loss greater than 500mL) for using an upright position and a recumbent position has a 4.4% chance. These results are believed to occur because gravity is assisting to help put the baby in the correct position and there is less pressure on the mother's spine and vena cava to help with oxygen flow and relieve back pain. It was also found that being in squatting, kneeling, or hand and knee positions can help to widen the dimensions of the pelvis to help the baby pass through the pelvic outlet. In this review, 30 trials involving 9,015 women were used to evaluate these findings and include a variety of benefits for the mother and baby during delivery as well as some risks to keep a lookout for during labor (Gupta et al, 2017).

Similar findings were found in a study done by the Karolinska Institute, where they studied the effects of using a birth seat (Thies-Lagergren et al, 2013). The mothers in the study experienced a shorter second stage of labor and reported less use of synthetic oxytocin to advance the labor process. The study found there was no reduction in the number of instrumental vaginal deliveries, which includes the use of forceps or vacuum delivery. The same findings including an increased risk for postpartum blood loss and less likely risk to have an episiotomy were found for women who used a birthing seat. There were no differences reported for perineal lacerations as well as no increased risk for perineal edema or fluid retention. Positive reports

from the study found that there are no adverse infant outcomes identified and the women in the study reported feeling powerful, protected, and confident which led to greater overall satisfaction with the birthing process from being able to use alternative methods such as the birthing seat. The researchers believe that the birthing seat can be recommended as a non-medical intervention for healthy nulliparous women (Thies-Lagergren et al, 2013).

A randomized controlled trial was done in Turkey at the Zekai Tahir Burak Women's Health Education and Research Hospital to assess the influences of different maternal pushing positions on birth outcomes at the second stage of labor in nulliparous women (Moraloglu et al, 2017). It was found that women who squatted with bars had a significant reduction in the duration of the second stage of labor compared to a woman in a supine or recumbent position. These women were also shown to be less likely to be induced or use oxytocin. There were also no significant differences found with postpartum blood loss, neonatal birth weight, APGAR scores at 1 and 5 minutes, as well as admissions to the NICU. The researchers also reported lower scores on the visual analog scale due to the mother being in an upright position where the birth canal is less visible to the accoucheur. In Turkey, the squatting position is more commonly used than in the U.S. due to social habits and traditions, but the mothers in this study reported feeling more satisfaction in being able to decide on an alternative method to use during their delivery and having the ability to choose their preference (Moraloglu et al, 2017).

Recumbent or Semi-Recumbent Positions (Supine, Lithotomy, Lateral)

Recumbent or Semi-Recumbent birthing positions are an umbrella term for positions where the mother's weight is on her tailbone including the supine, lithotomy, and lateral birthing position. Two articles were found that addressed recumbent positions and their corresponding maternal and fetal effects (Elvander et al, 2017; Musie et al, 2019). The supine position includes

the mother lying on her back and having the head of the bed elevated. The lithotomy position is very similar to the supine position and has the mother lying on her back with the head of the bed elevated and having the hips and knees flexed while having the thighs spread apart while the legs are supported usually by stirrups. The lateral or side-lying position has the mother lying on her side and is usually supported by pillows or exercise balls to help with comfort (Thies-Lageron et al, 2013). These positions are also commonly referred to as non-flexible sacrum positions which put the mother's weight primarily on the tailbone.

A research article written by BMC Pregnancy and Childbirth looked at the causes and effects of severe perineal trauma (SPT) (Elvander et al, 2017). For this study, it looked at women in Nordic countries (Iceland, Sweden, Denmark, and Norway), where it is more common to use upright positions; but the majority in the study did use recumbent positions. During their research, they found that using a recumbent or semi-recumbent position showed a low prevalence of SPT and episiotomies that did not differ when looking between countries. Episiotomies were shown to have an association with women who gave birth in a non-flexible sacrum position including positions like the supine or lithotomy position. The researchers believe that further studies are needed to find the long-term effects of perineal injuries (Edqvist et al, 2016). Another study done by BMC Pregnancy and Childbirth used the Stockholm-Gotland Obstetric Database to review 113, 279 singleton spontaneous vaginal births with no episiotomy. Some important findings showed that the lithotomy position had an increased risk for anal sphincter injury, while the lateral position had fewer perineal tears (Elvander et al, 2017).

The African Journal of Primary Healthcare and Primary Medicine gathered qualitative data from midwives in Pretoria which focused on their views of using specific positions during labor (Musie et al, 2019). Some of the interesting findings that were gathered showed that

midwives preferred the lithotomy position because it gave them a better view of the perineum to better assess the status of the labor. These midwives shared that they were aware of the disadvantages for the mother, including more perineal tears, but found it comfortable and familiar for themselves and found convenience in using the lithotomy position. The midwives shared that this decision was influenced due to having a lack of skills and training to use alternative positions other than a recumbent position during labor. This study only uses midwives from a specific region in Africa and more studies need to be done to see if there are similar feelings in other cultures (Musie et al, 2019).

Overall Findings and Discussions

Throughout history, there have been different societal norms for giving birth. For centuries it included upright positions, but with the influence of western medicine and the socioeconomic statuses of surgeons, recumbent positions became more popular. Those influences continue through today with the lithotomy or supine position being the most popular position in the United States. This is due to easy access for the care provider and it is the primary position used for teaching in programs for assisting with labor such as medical school, nursing school, and midwifery school. But with scientific research, it is shown that using alternative positions such as standing, squatting, or hand and knees can have better maternal and fetal outcomes such as faster labor, less pain, non-abnormal fetal heart rates, and less perineal trauma. Since neutral positions are more common, there is little research done about alternative birthing positions and little promotion and education about alternative birthing options in the U.S. If more research and education are done to promote these alternative methods, then there could potentially be better maternal and fetal outcomes in the U.S.

Proposal for Further Study

From the literature review, the research has shown that alternative birthing positions such as upright positions (standing, squatting, hands and knees) can have positive maternal and fetal outcomes during and post-delivery. For centuries, these positions were used in the majority of cultures worldwide without the help of a physician. Today, the U.S. is one of the worst-ranked industrialized countries for maternal and fetal outcomes during delivery (World Health Organization, 2022). The U.S. standard has a physician in the room and uses a recumbent position (lithotomy/supine) during labor. This proposed study can be used to compare and contrast different delivery positions to see which methods are safest for both the mother and baby in the delivery process and which positions have the best long-term effects. The primary research aim is to compare and contrast the outcomes of using different laboring positions during birth and find out which positions are the safest for both mother and baby.

Theoretical Framework

The nursing theory in this theoretical framework to best represent the proposal for further study is *Sister Callista Roy's: Adaptation Model of Nursing* (Roy's Adaptation, 2020). According to Roy, each person is a unified bio-psycho-social system, where each person is in a constantly changing environment, and nurses are here to help the patients adapt to their environment by finding their role function, physiological needs, and relations with health and illness (Theoretical framework of nursing practice, 2017). *Roy's Adaptation Model of Nursing* was developed in 1976 when Roy believed that the "nature of nursing was a service to society" (Roy's Adaptation, 2020). The main questions that were formed for this theory were: "Who is the focus of nursing care? What is the target of nursing care?, and When is nursing care indicated?" (Roy's Adaptation, 2020). The main factors influencing this theory were family, education, religious background, mentors, and clinical experience. Roy believed that for

someone to adapt to their environment they need positive environmental changes such as conscious awareness, self-reflection, and choice to create human and environmental integration.

The Adaptive Model makes ten explicit assumptions:

- ❖ “The person is a bio-psycho-social being.” (Roy’s Adaptation, 2020)
- ❖ “The person is in constant interaction with a changing environment.” (Roy’s Adaptation, 2020)
- ❖ “To cope with a changing world, a person uses coping mechanisms, both innate and acquired, which are biological, psychological, and social in origin.” (Roy’s Adaptation, 2020)
- ❖ “Health and illness are inevitable dimensions of a person’s life.” (Roy’s Adaptation, 2020)
- ❖ “To respond positively to environmental changes, a person must adapt.” (Roy’s Adaptation, 2020)
- ❖ “A person’s adaptation is a function of the stimulus he is exposed to and his adaptation level.” (Roy’s Adaptation, 2020)
- ❖ “The person’s adaptation level is such that it comprises a zone indicating the range of stimulation that will lead to a positive response.” (Roy’s Adaptation, 2020)
- ❖ “The person has four modes of adaptation: physiologic needs, self-concept, role function, and interdependence.” (Roy’s Adaptation, 2020)
- ❖ “Nursing accepts the humanistic approach of valuing others’ opinions and perspectives. Interpersonal relations are an integral part of nursing.” (Roy’s Adaptation, 2020)

- ❖ “There is a dynamic objective for existence with the ultimate goal of achieving dignity and integrity”(Roy’s adaptation, 2020).

This theory correlates well with the research question, “For infants and mothers, what are the potential effects and outcomes of different laboring positions and how do societal norms affect the positions used in the United States?” During the laboring process, there are many environmental changes that the patient must adapt to, to have a safe and healthy delivery. During this time, it is the nurse’s job to help the patient adapt to these changes by providing guiding support and helping to make the experience as positive as possible by providing education, support (physically and mentally), to help give the patient their autonomy. Throughout a delivery, conditions are constantly changing due to mother and fetal health as well as patient preference. There are often adverse effects such as a drop in fetal heart rate or the need for an emergency c-section which can be stressful for the women. In these situations, the nurse can be the guide to educate the mother on different positions to positively affect the mother and baby and help the woman make her own decisions during her delivery. Roy’s Adaptation Model is crucial for the overall satisfaction of the delivery (Theoretical framework of nursing practice, 2017).

Ethical Considerations

For this study to include a laboring mother and baby, it is important to keep a few ethical considerations in mind. Before beginning the study it will be reviewed by the appropriate Internal Review Board (IRB) and needs to be approved. Informed consent for both the mother and the baby is essential to the start of data collection or report of any findings. A crucial ethical consideration for a laboring mother is her autonomy since every birth is different and the mother should be able to make her own decisions throughout the process. Beneficence should also be

used as the assistant in the birth to always act in the best interest of the patient (mother and baby). Similarly, veracity should also be used to help with autonomy and beneficence by making sure to always be honest with the mother to help make informed autonomous decisions. These all help with health literacy, health equity, and overall birthing satisfaction of everyone involved, especially mother and baby.

Methods

Proposed Research Question

The research questions that will be used for this study are: for infants and mothers, what are the potential effects and outcomes of different laboring positions, and how do societal norms affect the positions used in the western United States (U.S.)?

Study Design

Based on the research found in the literature review, a mixed-method study is proposed with a qualitative and quantitative survey to collect data from different women's experiences during childbirth in the U.S. This data will gather information about the different positions used in each birth, and the different outcomes that occurred with each position as well as gain insight into the overall satisfaction of each birthing position.

Sample

To help answer this question, a survey will be sent out to 100 women between the ages of 18-35 who have given birth to a single baby in the last 5 years. Women will be recruited by contacting Women's Clinics associated with university hospitals in five U.S. cities on the west coast: Seattle, Portland San Francisco, Los Angeles, and San Diego. Information about the survey will be provided to the clinic to give to eligible women.

Methods

The online survey will be voluntary and there will be a form at the beginning of the survey to gain informed consent for the participant to join the study which will also state that they can decide to stop being in the study at any time. The steps for this research include the following:

- ❖ Write the survey regarding women's birthing experiences; answer qualitative and quantitative data and select "select all" and "fill in the blank" questions.
- ❖ Send the survey to the IRB for approval.
- ❖ Use social media and contact women's clinics as well as OB offices to send out the survey to participants and gain their approval to distribute the survey.
- ❖ The survey will be distributed until 100 participants respond.
- ❖ The responses will then be assessed by nursing researchers to examine the data and compare the responses to see if there are any differences in maternal and fetal outcomes with different laboring positions.

To make the survey more accessible for the participants, it will have the option to be translated into Spanish, Mandarin, and Tagalog because they are the 3 most popular languages in the U.S. besides English. The survey will consist of the following questions:

- ❖ Demographics
 - Age
 - Parity
 - Race/Ethnicity
 - Place of living
- ❖ What birthing positions did you use during your labor (Select all that apply)?

- What reason did you choose this position?
- How long was this position used?
- What outcomes occurred while using this position (fetal heart rate, less pain, duration of labor)?
- Did the delivery end up in a C-section?
- ❖ Did you have a birthing assistant?
- ❖ Was fetal heart monitoring used during your labor?
 - Was it an internal or external monitor?
- ❖ How long was the duration of labor?
- ❖ Did you experience any perineal trauma?
 - How severe was the trauma?
 - Did you need an episiotomy?
- ❖ How was your overall satisfaction with the delivery?
 - Did you feel any pressure to choose specific positions?
 - On a scale from 1 to 10, how would you rate your autonomy during delivery?
 - On a scale from 1 to 10, how would you rate your health literacy during delivery?
 - On a scale from 1 to 10, how would you rate your overall satisfaction with delivery?

Data Analysis

Since the data is both qualitative and quantitative, the nursing researchers will use both statistical methods and content analysis to review the responses.

To measure the quantitative data, a nominal scale will be used. This scale will help categorize the data without giving the information a specific rank. This will help categorize different birthing positions and labor experiences with their corresponding fetal and maternal outcomes without ranking them. Within these categories, the interval scale of measurement will be used to analyze the data to help show the differences between variables. Using both of these scales will be most effective to analyze the data to look at the differences between laboring positions and assess the experiences between each delivery.

For qualitative data, content analysis will include searching the answers to open-ended questions for similar words and phrases and organizing them into categories. Themes may be derived from the keywords in categories.

Conclusion

The objectives of this literature review were to compare and contrast the effects and outcomes of different laboring positions used worldwide, and to explore how societal norms in the United States affect the standard positions that are used today. This type of research is important because it can highly affect the outcomes of women in labor as well as benefit healthcare professionals to have more alternative methods to control the outcome of delivery. Maternal mortality and birth complications happen daily to hundreds of women. There is still little research available about maternity topics such as birthing positions, but as more studies are performed, birth outcomes may improve and women may experience more satisfactory deliveries. This literature review is only a stepping-stone to creating a better healthcare system. The proposed study could provide more in-depth information about birthing experiences and maternal outcomes in the Western U.S.

Education of labor positions will not only help health care professionals to act quickly during delivery but with more resources to educate the mothers, it can give them more autonomy to decide the best way to deliver their baby. As a healthcare system, there are many ways the U.S. can improve; but learning about the different effects and outcomes of different labor positions can greatly improve the overall satisfaction of deliveries.

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Labour augmentation and fetal outcomes in relation to birth positions: a secondary analysis of an RCT evaluating birth seat births. Midwifery. 2013 Apr;29(4):344-50. doi: 10.1016/j.midw.2011.12.014. Epub 2012 Oct 18. PMID: 23084490.

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Appendix

Name: Amberlyn Heskett

Date: 7 February 2022

Title of Paper: For infants and mothers, what are the potential effects and outcomes of different laboring positions and how do societal norms affect the positions used in the United States?

Authors/ Citation	Purpose/Objective	Sample	Study Design	Study Methods	Major Findings	Strengths	Limitations
Declercq ER, Sakala C, Corry MP, Applebaum S, Herrlich A. Major Survey Findings of Listening to Mothers(SM) III: Pregnancy and Birth: Report of the Third National U.S. Survey of Women's Childbearing Experiences . J Perinat	“To understand the experiences and views of childbearing women in the United States and trends over time, Childbirth Connection carried out the third national Listening to Mothers survey among 2,400 women who gave birth in U.S. hospitals to a single baby from mid-2011 to mid-2012 and could participate in English. Harris Interactive conducted the survey using a	2,400 mothers completed the survey online.	“All survey participants were 18 through 45 years, could participate in English, and had given birth to single babies in a U.S. hospital from July 1, 2011, through June 30, 2012. Participants completed the online survey, averaging approximately 30 minutes in length, from October through December 2012.”(Declercq et al, 2014)	“To develop a national profile of childbearing women, the data were adjusted with demographic and propensity score weightings using methodology developed and validated by Harris Interactive. The resulting survey population is generally representative of U.S. mothers 18 through 45 who gave birth to single babies in a hospital from July 2011	More than one in three (35%) mothers indicated that they did not intend to become pregnant at this time, with 5% saying they never intended to become pregnant and 30% preferring to become pregnant later. Forty-four percent of mothers reported a pre-pregnancy weight that, given their height, would be classified as overweight (24%) or obese (20%) Almost all the mothers (98%) indicated they had had an ultrasound during their	This is a qualitative survey that is organized based on category There is a very large sample size with a variety of populations This survey includes both qualitative and quantitative data	The survey is not encompassing all populations of mothers because many mothers choose home births or may not speak English. The survey is optional so mothers who have stronger opinions are more likely to take the survey. The survey is at risk of reporting bias, performance bias, and detection bias.

Educ. 2014 Winter;23(1):9-16. doi: 10.1891/1058-1243.23.1.9. PMID: 24453463; PMCID: PMC3894594.	validated methodology that includes data weighting to ensure that results closely reflect the target population.			through June 2012. The respondents are generally comparable to published national data for U.S. birthing mothers on critical factors such as age, race	pregnancy, with 70% having three or more and 23% having six or more.		
Gupta JK, Sood A, Hofmeyr GJ, Vogel JP. Position in the second stage of labour for women without epidural anaesthesia. Cochrane Database Syst Rev. 2017 May 25;5(5):CD002006. doi: 10.1002/14651858.CD00	To determine the possible benefits and risks of the use of different birth positions during the second stage of labour without epidural anaesthesia, on maternal, fetal, neonatal and caregiver outcomes.	We included eleven new trials for this update; there are now 32 included studies, and one trial is ongoing. Thirty trials involvi	Randomised, quasi-randomised or cluster-randomised controlled trials of any upright position assumed by pregnant women during the second stage of labour compared with supine or lithotomy positions. Secondary comparisons include	We searched Cochrane Pregnancy and Childbirth's Trials Register (30 November 2016) and reference lists of retrieved studies.	In all women studied (primigravid and multigravid), when compared with supine positions, the upright position was associated with a reduction in duration of second stage in the upright group however, this result should be interpreted with caution due to large differences in size and direction of effect in individual studies. Upright positions were also associated with no clear difference in the	Large sample size Large variety in mode of birth	Levels of attrition were noted for included studies. In future updates, if more eligible studies are included, the impact of including studies with high levels of missing data in the overall assessment of treatment effect will be explored by using sensitivity analysis. Overall, risk of bias in the included trials was variable. Blinding of

<p>2006.pub4. PMID: 28539008; PMCID: PMC648443 2.</p>		<p>ng 9015 women contrib uted to the analysis .</p>	<p>comparison of different upright positions and the supine position. Trials in abstract form were included.</p> <p>Two review authors independently assessed trials for inclusion and assessed trial quality. At least two review authors extracted the data. Data were checked for accuracy. The quality of the evidence was assessed using the GRADE approach.</p>		<p>rates of caesarean section a reduction in assisted deliveries a reduction in episiotomies a possible increase in second degree perineal tears no clear difference in the number of third or fourth degree perineal tears increased estimated blood loss.</p>		<p>participants, personnel and outcome assessors was either not performed or unclear in all trials</p>
<p>Musie, M. R., Peu, M. D., & Bhana-</p>	<p>“To explore and describe factors hindering midwives’</p>	<p>“Data saturati on occurre</p>	<p>“A public hospital in the Tshwane district, Pretoria</p>	<p>“This study used the qualitative, exploratory, and descriptive</p>	<p>“Evidence is provided in this study that midwifery practice in the hospital still</p>	<p>“The authors declare that they have no financial or</p>	<p>“The source of the data was mostly dependent on the midwives of the</p>

<p>Pema, V. (2019). Factors hindering midwives' utilization of alternative birth positions during labor in a selected public hospital. African Journal of Primary Health Care & Family Medicine, 11(1), 1–8. https://doi.org/10.4102/phcfm.v11i1.2071</p>	<p>utilization of alternative birth positions during labor at a selected public hospital.”(Musie et al, 2019)</p>	<p>d after conducting 20 interviews with the midwives who were willing to partake in the study based on the inclusion criteria.”(Musie et al, 2019)</p>	<p>was used in the study....The study population included professional nurses with midwifery training who completed either the four-year degree or 3-year diploma course and advanced midwives with a speciality in midwifery registered by the South African Nursing Council. This equated to 30 midwives working in the labour ward.”(Musie et al, 2019)</p> <p>They used Tesch's method of data analysis</p>	<p>research design. This design gathered quality information on factors hindering midwives' utilization of alternative birth positions during labor in a selected public hospital...Data were collected in a private room at the selected hospital in Tshwane. Face-to-face semi-structured interviews were conducted. The interview had one central question and probing follow-up questions. The central question asked was:</p> <p>What are the factors hindering midwives' utilisation of</p>	<p>follows a workplace culture that routinely positions all women in the lithotomy position during labor. Irrespective of the knowledge midwives have on the negative maternal and neonatal outcomes associated with the lithotomy position, they continued utilizing this position for their own convenience and overlooked other birthing positions and the women's preferences. Therefore, the study strongly recommends that midwifery programs should be designed in such a way that they equip midwives with the necessary skills to utilise alternative birth positions. Furthermore, midwives are encouraged to keep abreast with</p>	<p>personal relationships that may have inappropriately influenced them in writing this paper...Credibility was ensured through prolonged engagement between the researcher and participants to build trust and rapport, allocating adequate time to collect data and stay in the field until data saturation was reached.19 A dependability audit was conducted with the assistance of an experienced researcher (supervisor) in</p>	<p>specific hospital in Tshwane. As such, the findings cannot be transferable as the study is not representative of the entire population.”(Musie et al, 2019)</p> <p>The Sample size is small and it only in Pretoria.</p> <p>The survey is mostly qualitative and there is barely any quantitative data.</p>
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				<p>alternative birth positions during labour in a selected public hospital?</p> <p>Interviews were digitally recorded, and the researcher took field notes.</p>	<p>developments on the provision of alternative birth positions.”(Musie et al, 2019)</p>	<p>qualitative research, who followed the entire progression of the study to confirm the findings. After data were collected, the supervisor was given transcripts to read through</p>	
<p>L Dundes, 1987: The evolution of maternal birthing position. American Journal of Public Health 77, 636_641, https://doi.org/10.2105/AJPH.77.5.636</p>	<p>“Currently in many developing countries, traditional birth attendants (usually women) attend parturients. The birth position they use differs from that suggested by physicians and by trained midwives who have been taught the Western practice of horizontal labor and delivery positions”(Dundes,</p>	NA	<p>This is a historical article that was accumulated by an abundance of research from referential libraries and historical sites all over the world.</p>	<p>Historical design to collect, verify, and synthesize evidence from the past</p>	<p>“Some scholars claim that the change in birthing position was a perverted caprice of King Louis XIV (1638-1715), a contemporary of Mauriceau Since Louis XIV reportedly enjoyed watching women giving birth, he became frustrated by the obscured view of birth when it occurred on a birthing stool and promoted the</p>	<p>This is a historical research article that uses historical documents from hundreds of years ago and expresses their relevance today.</p> <p>article uses historical documents from all over the world and is not focused</p>	<p>There is no quantitative data and it is mostly qualitative.</p> <p>The article may be skewed by the author's judgment.</p> <p>The findings are inferential</p>

	1987)				new reclining position.	on a specific sample population.	
Thies-Lagergren L, Kvist LJ, Sandin-Bojö AK, Christensson K, Hildingsson I. Labour augmentation and fetal outcomes in relation to birth positions: a secondary analysis of an RCT evaluating birth seat births. Midwifery. 2013 Apr;29(4):344-50. doi: 10.1016/j.midw.2011.12.014. Epub	“the aim of this study was to compare the use of synthetic oxytocin for augmentation, duration of labor and birth and infant outcomes in nulliparous women randomised to birth on a birth seat or any other position.”(Thies-Lagergren et al, 2013)	1002 women	“a randomized controlled trial in Sweden where 1002 women were randomised to birth on a birth seat (experimental group) or birth in any other position (control group). Data were collected between November 2006 and July 2009.”(Thies-Lagergren et al, 2013)	“The outcome measurements included synthetic oxytocin augmentation, duration of the second stage of labour and fetal outcome. Analysis was by intention to treat.”(Thies-Lagergren et al, 2013)	“women allocated to the birth seat had a significantly shorter second stage of labour despite similar numbers of women subjected to synthetic oxytocin augmentation in the study groups. The adverse neonatal outcomes did not differ between groups. The birth seat can be suggested as non-medical intervention used to reduce duration of second stage labour and birth. The birth seat can be suggested as a non-medical intervention that may facilitate reduced duration of the second stage of labour.	There was no conflict of interest The findings were statistically significant	The study is at risk of reporting bias, performance bias, and detection bias.

2012 Oct 18. PMID: 23084490.							
<p>Moraloglu O, Kansu-Celik H, Tasci Y, Karakaya BK, Yilmaz Y, Cakir E, Yakut HI. The influence of different maternal pushing positions on birth outcomes at the second stage of labor in nulliparous women. J Matern Fetal Neonatal Med. 2017 Jan;30(2):245-249. doi: 10.3109/14767058.2016.</p>	<p>“To assess the effects on neonatal and maternal outcomes of different pushing positions during the second stage of labor in nulliparous women.”(Moraloglu et al, 2017)</p>	<p>102 healthy nulliparous pregnant women</p>	<p>“This prospective study included 102 healthy, pregnant, nulliparous women who were randomly allocated to either of two positions: a squatting using bars (n = 51), or a supine position modified to 45 degree of semi-fowler (n = 51) during the second stage of labor.”(Moraloglu et al, 2017)</p>	<p>“Duration of the second stage of labor, maternal pain, postpartum blood loss, abnormal fetal heart rate patterns that required intervention, and newborn outcomes were compared between the two groups.”(Moraloglu et al, 2017)</p>	<p>“The trial showed that women who adopted the squatting position using bars experienced a significant reduction in the duration of the second stage of labor; they were less likely to be induced, and their Visual Analog Scale score was lower than those who were allocated the supine position modified to 45 degree of semi-fowler during second stage of labor (p < 0.05). There were no significant differences with regard to postpartum blood loss, neonatal birth weight, Apgar score at one and five minutes, or admission to the NICU</p>	<p>Randomized study Some findings were statistically significant</p>	<p>“There were no significant differences with regard to postpartum blood loss, neonatal birth weight, Apgar score at one and five minutes, or admission to the Neonatal Intensive Care Unit.”(Moraloglu et al, 2017)</p> <p>Some women may use many techniques during their labor and not just 1</p>

<p>1169525. Epub 2016 Apr 19. PMID: 27028537.</p>							
<p>Edqvist M, Blix E, Hegaard HK, Ólafsdóttir OÁ, Hildingsson I, Ingversen K, Mollberg M, Lindgren H. Perineal injuries and birth positions among 2992 women with a low risk pregnancy who opted for a homebirth. BMC Pregnancy Childbirth. 2016 Jul 29;16(1):19</p>	<p>Whether certain birth positions are associated with perineal injuries and severe perineal trauma (SPT) is still unclear. The objective of this study was to describe the prevalence of perineal injuries of different severity in a low-risk population of women who planned to give birth at home and to compare the prevalence of perineal injuries, SPT and episiotomy in different birth positions in four Nordic.</p>	<p>a selected sample of 2992 of the original cohort of 3068 women with a planned home birth was included</p>	<p>This is a prospective cohort study collecting data from planned home births in Norway, Denmark, Sweden and Iceland between 2008 and 2013. All midwives attending home births were asked to recruit their clients to the study. The women were given information about the study during pregnancy, and signed a form agreeing to participate. The</p>	<p>A population-based prospective cohort study of planned home births in four Nordic countries. To assess medical outcomes a questionnaire completed after birth by the attending midwife was used. Descriptive statistics, bivariate analysis and logistic regression were used to analyze the data.</p>	<p>A low prevalence of SPT and episiotomy was found among women opting for home birth in four Nordic countries. Women used a variety of birth positions and a majority gave birth in flexible sacrum positions. No associations were found between flexible sacrum positions and SPT. Flexible sacrum positions were associated with fewer episiotomies.</p>	<p>A second examiner and educational workshops have been shown to improve diagnosis and the appropriate classification of perineal trauma</p>	<p>One limitation of this study is the lack of information regarding midwifery practices during the second stage to prevent perineal injuries, as well as midwives' experience and training in assessing and suturing perineal injuries. There is evidence that perineal injuries are often misclassified [46] by both midwives and obstetricians.</p> <p>Another limitation is that midwives in four different countries entered the data. However, using the same</p>

6. doi: 10.1186/s12 884-016- 0990-0. PMID: 27473380; PMCID: PMC49665 98.			method and data collection has been described previously by Blix et al				protocol limits the classification bias.
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