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# Birth Positions And Perineal Trauma: A Systematic Review Of The Literature

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**BIRTHING POSITIONS AND PERINEAL TRAUMA: A  
SYSTEMATIC REVIEW OF THE LITERATURE**

**Honors Thesis**

**Presented in Partial Fulfillment of the Requirements  
For the Degree of Bachelor of Science in Nursing**

In the Maguire Meservey  
College of Health and Human Services  
at Salem State University

By

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**Abstract:**

Lacerations and episiotomies can cause discomfort and extreme pain to new mothers. This can affect their ability to care for their newborn. Research has recently delved into the topic of perineal trauma. There are several risk factors associated with perineal trauma during birth. The effect of different birthing positions is still unclear. The purpose of this study is to explore birthing positions and perineal outcomes. A systematic review of the literature is proposed of available scholarly, peer reviewed published studies between years 2012-2017. Findings from this study will help inform how birthing positions can reduce perineal trauma. Implications of this study can help inform nursing care practices while caring for women experiencing labor and birth.

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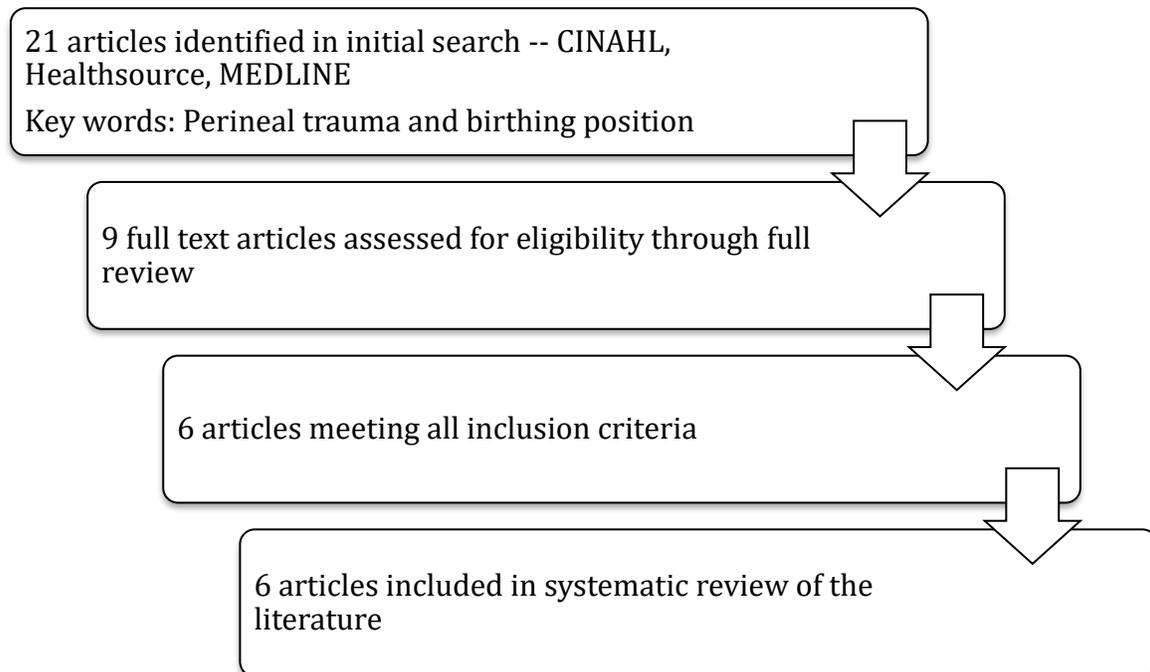
**Introduction:**

Perineal trauma is very common following a vaginal birth. Injury to the perineum is a source of pain for new mothers. There is a spectrum to the degree of damage to the perineum. Perineal trauma is classified into first, second, third and fourth degree tears. Another category of trauma is obstetric anal sphincter injuries, or OASIS (Elvander, Ahlberg, Thies-Lagergren, Cnattingius, & Stephansson, 2015). Perineal trauma can have long-lasting negative effects on mothers. It can decrease their quality of life and impede their experiences of motherhood. For example, mothers who suffer from severe pain due to perineal injuries may have difficulty bonding with their newborn. These mothers can have trouble with finding comfortable positions to breastfeed. They may experience urinary or bowel incontinence, as well as a fear of moving their bowels. The most morbid complication of perineal trauma is sepsis which could even lead to death (Lodge & Haith-Cooper, 2016). The aim of this review is to explore the research on the relationship between maternal birthing position and perineal trauma.

**Methods:**

This systematic review includes 6 peer-reviewed, scholarly research articles published between the years 2012-2017. They were found using the databases: CINAHL, Healthsource, and MEDLINE. The following keywords were used: perineal trauma and birthing positions. The inclusion criterion is studies that address birthing positions in relation to perineal trauma. The search generated 21 articles initially. 12 of these were not

peer reviewed so they were excluded. An additional 3 were excluded because they did not meet the inclusion criteria (see *Figure 1*).



*Figure 1.* Flowchart of search strategy

### **Findings:**

*Table 1* shows an overview of the articles included in this review. There is a variety in design as well as geographic location of these studies. The locations span from South America, Africa, and across Europe. The countries in which these studies take place may have different healthcare systems as well as varying maternity practices. There is one systematic review which delivers information from 7 studies. The rest of the articles are studies. Ethically, it is not permissible to perform controlled experiments or trials on laboring women. It would be unethical to restrict the choices available to women regarding birthing positions for experiment purposes (Lodge & Haith-Cooper, 2016). The lack of controlled trials may be a setback in the research of this topic.

*Table 1: overview of studies*

Study	Design	Location	N
da Silva et al. (2012)	Cross sectional study	Brazil	1,079 births
Diorgu et al. (2016)	Exploratory study	Nigeria	110 mothers 110 midwives
Edqvist et al. (2016)	Prospective cohort study	Norway, Sweden, Denmark, Iceland	2992 births
Elvander et al. (2015)	Observational study	Sweden	113,279 births
Lodge & Haith-Cooper (2016)	Systematic Review	UK, Europe, Australia	7 studies
Meyvis et al. (2012)	Retrospective cross sectional study	Belgium	557 women

*Table 2* exhibits some of the findings from these studies. All of the studies included both primiparous and multiparous women. Most included episiotomies but two of the articles excluded episiotomies. Every study included midwives that attended the birth, although some had a mix of either midwife or physician. The setting and attending could affect which position the women give birth in. The studies focus on births that are

not complicated by preterm labor, cesarean sections, or instrumental devices because these could serve as confounding variables.

*Table 2: Findings*

Study	Birth type	Setting	Attending
da Silva et al. (2012)	Low risk, includes episiotomy	Birth center	Midwife
Diorgu et al. (2016)	Spontaneous live birth, includes episiotomy	2 Hospitals	Midwife
Edqvist et al. (2016)	Non- instrumental, includes episiotomy	Home and hospital	Midwife or physician
Elvander et al. (2015)	Uncomplicated, Non- instrumental, excludes episiotomy	All maternity care units in region	Midwife
Lodge & Haith- Cooper (2016)	Non- instrumental, excludes episiotomy	Birth center and hospital	Midwife and/or physician
Meyvis et al. (2012)	Non- operative, includes episiotomy	Hospital	Midwife or physician

*Table 3* shows the results of the studies. The flexible sacrum category is defined as positions that expand the pelvic outlet and decrease weight on the sacrum (Edqvist et al., 2016). Included in this category are the following positions: kneeling, standing, all

fours, squatting, birth seat, lateral. Non-dorsal refers to positions where the patient is not on their back. Most of the studies associate vertical positions with increased trauma. Two of the studies find that the lateral positions is protective over the perineum. Two studies show that sitting/semi-sitting positions are associated with greater risk for trauma. One article links lithotomy position with increased risk for injury while another shows that more than half of the women utilizing this position did not find it helpful.

*Table 3: Outcomes*

Study	Outcome
da Silva et al. (2012)	Semi-sitting is associated with greater risk for 2 <sup>nd</sup> degree tear and episiotomy. Non-dorsal is a protective factor for episiotomy.
Diorgu et al. (2016)	63% of women found the lithotomy position to not be helpful.
Edqvist et al. (2016)	Flexible sacrum has no association with sutured injuries or severe perineal trauma (SPT), but did have fewer episiotomies.
Elvander et al. (2015)	Lateral is slightly protective factor in primiparous women. Lithotomy is associated with increased risk of OASIS irrespective of parity. Squatting and birth seat increase the risk of trauma in multiparous women.
Lodge & Haith-Cooper (2016)	All fours and kneeling have greatest rate of intact perineum. Sitting, squatting, birth-stool have highest rate and degree of trauma.
Meyvis et al. (2012)	Lateral is associated with significant decrease in trauma and episiotomy.

**Discussion:**

These studies were conducted in a wide variety of locations and they evoked similar results. This could indicate that the findings are universal among different countries and cultures. The sitting and squatting positions help the mother to utilize gravity to assist in delivering the baby (Elvander et al., 2015). These positions decrease the length of the expulsive stage of labor and therefore increase the risk for injury to the perineum. This is because the infant is pushed through the birth canal faster, so the tissue has less time to stretch. In comparison, positions that increase the length of this stage may have a protective factor over the perineum. These positions include the lateral, and all fours positions.

The position chosen may also affect the perineum due to the access the midwife or physician has to the area. The person delivering the baby may use interventions such as perineal guarding and applying oil. In positions such as the birth seat, the midwife cannot clearly see and reach the perineum so these interventions cannot be used (Edqvist et al., 2016). Episiotomy can also be affected by this. The lithotomy position gives the midwife the most direct access to the perineum. Therefore, lithotomy position is helpful to the midwife or physician but not necessarily helpful to the patient (Diorgu, Steen, Keeling, & Mason-Whitehead, 2016). This may explain why non-dorsal positions are protective against episiotomy.

Birth centers are thought to use a more natural method of delivery. They are associated with spontaneous, low risk births. Hospitals have the means to tend to more complicated births. Hospitals typically use more interventions than birth centers (Edqvist et al., 2016).

There are many other factors that contribute to perineal trauma. They consist of: parity, infant birth weight, gestational age, length of labor, and maternal age (Edqvist et al., 2016). These non-modifiable risk factors make it difficult to isolate the effect of birthing position on perineal trauma. Some of the studies try to adjust their findings based on parity but most do not. Elvander et al. analyze the results of primiparous women separately from those of multiparous women. This gives an advantage to getting more reliable results. The results are still inconclusive due to the nature of the topic, so more research should be conducted to find better evidence.

**Nursing Implications:**

Nurses play a pivotal role in caring for women experiencing labor. Nurses in this intimate setting can educate patients on evidence based birth positions and practices that may reduce their risk of sustaining perineal trauma. Nurses should empower women to utilize positions that are most comfortable to them. They should inform the patients of the risks and benefits to different maternal positions. This will allow women to make informed decisions about how they wish to deliver their babies.

**Limitations:**

This research is relatively new and the data is not extensive. When reflecting on the limitations to this review, it is important to note that most of the studies did not use a universal system to define perineal trauma. Da Silva et al. and Lodge & Haith-Cooper were the only ones to use the degrees of lacerations. One study used the term “severe perineal trauma” and another used “obstetric anal sphincter injuries”. Some included

episiotomy as perineal trauma while others did not. The lack of a general system raises difficulty in comparing the level of injuries. There is also the chance that the perineal injuries were misclassified (Edqvist et al., 2016). To improve the research, a universal classification should be taught to midwives and physicians to rate perineal trauma.

Another limitation is that only non-complicated births were included in the studies. This means that the data may not be generalizable to all births. Births such as vaginal birth after cesarean (VBAC) and preterm deliveries will not benefit from the findings of this review.

**Conclusion:**

This systematic review demonstrates evidence that supports the idea that women should be able to utilize different birthing positions during labor. Nurses should educate their patients about the benefits of the non-dorsal positions. It should become common practice or policy to educate patients about the variety of birthing positions. The risks of positions such as sitting and squatting should be researched further. The data in this review should not deter women from certain positions because more evidence needs to be found.

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