

**Pain Management in Labor and Delivery: Literature Review**

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Pain can be managed in several ways throughout the labor and delivery process. There are several nonpharmacologic and pharmacologic options available for the patient to utilize. The nurse is also there to help educate the patient on the different options for pain management. This paper will review the research on different pain management options and techniques. This paper specifically covers topics like a birthing ball to help reduce pain, virtual reality therapy to help with pain relief, and acupuncture and acupressure during labor. All of these topics provide different interventions for a nonpharmacologic pain relief technique. There are still several other different nonpharmacologic techniques that can be used. A literature review provides an understanding of a known topic. Literature reviews also help identify topics that have not been researched yet (Houser, 2021). They will also help prevent or identify gaps or overlaps in research (Houser, 2021). This is important in research to provide new research topics and make sure the research being used is relevant (Houser, 2021).

### **Using a birth ball to reduce pain perception in the latent phase of labor: A Randomized Controlled Trial**

The latent phase is the first stage of labor. The cervix will begin to open and soften, it is possible the woman's water may break as well. Contractions will begin and they usually are irregular and usually feel moderately uncomfortable depending on the patient's pain tolerance. This article provides research on how using a birth ball can reduce pain during the latent phase of labor (Mylod et al., 2023). Women are usually not admitted to a labor and delivery unit until they are in active labor. However, usually when contractions begin women can start to experience anxiety about the pain and labor beginning and drive to the hospital (Mylod et al., 2023). This

article researches how starting with a birthing ball in the latent phase can help with pain and prevent women from driving to the hospital and being turned to go back home to dilate more (Mylod et al., 2023).

### **Key Points**

This article had 294 low-risk pregnant participants (Mylod et al., 2023). The article used quantitative data and analyzed on an intention-to-treat basis (Mylod et al., 2023). Only women in spontaneous labor were included in the analysis phase (Mylod et al., 2023). For their primary outcomes, they used the visual analog scale (VAS) for a patient admitted in labor (Mylod et al., 2023). The secondary outcomes were measured by cervical dilation, obstetric interventions, fetal monitoring, amniotomy, oxytocin, and an epidural (Mylod et al., 2023). The ball-assisted latent labor (BALL) trial was also used to evaluate pain perception during this trial (Mylod et al., 2023). The study found that the women who used the birthing ball during the latent phase at home improved their birth outcomes (Mylod et al., 2023). This study also helped improve the woman's well-being during their birth experience (Mylod et al., 2023). The study showed that the patient's were able to tolerate using the birthing ball and were able to labor at home longer (Mylod et al., 2023). This study helped improved women's confidence in their ability to labor at home. This study showed improvement in women's labor dilation and birthing process when using the birthing ball at home during the latent phase (Mylod et al., 2023).

### **Assumptions**

This author's idea was that implementing the birth ball in the early stages of labor would help lessen obstetric interventions. This author also thought that implementing the birth ball in the

latent stage of labor would help women dilate more before going to the hospital. The ideal timing is that the birth ball would help the women get through the latent stage of labor and arrive at the hospital during active labor (Mylod et al., 2023). Active labor is the second stage of labor. The contractions become stronger and closer together. The cervix will begin to dilate from 4-8 centimeters. This author also thinks that using the birth ball during the latent phase of labor will help with pain perception (Mylod et al., 2023). The idea is that bouncing on the ball can help distract the mind and help focus on something else than the contractions that are coming. The birthing ball can also provide counterpressure on the perineum that can help relieve the pain (Mylod et al., 2023).

### **Deficit/Conclusion**

The BALL trial was used throughout this research. The BALL trial was found to be safe, low-cost, and effective for women laboring throughout their latent phase (Mylod et al., 2023). Their line of reasoning is educational and reasonable. Implementing the birth ball at home and letting women labor at home is helpful to prevent readmissions in the labor and delivery unit. An implication of this research is emergencies. None of this research can be applied to help a woman who has an emergency like preterm labor, preeclampsia, placenta previa, etc. This research also needs to provide more information on pain tolerance differences in women. Not everyone is going to be able to handle the same amount of pain. Two women may both be dilated to two centimeters but one may rate their pain a ten out of ten and the other may rate their pain a three out of ten. Overall, this research is very educational and can be helpful to help women get to their active phase of labor.

### **Patient Perceptions of Virtual Reality for Pain Relief in Labor: A Qualitative Study**

Labor is considered one of the most painful experiences a human can go through. There are several ways to try and control this pain. There are several pharmacologic and non-pharmacologic ways. Some nonpharmacologic ways include acupuncture, aromatherapy, and breathing exercises. This article discusses the use of virtual reality (VR) therapy to help a patient through their labor pains. VR is the use of a headset that has a screen that delivers images and videos that provide an immersive experience (Wong et al., 2022). This article discusses VR therapy as a pain management technique during the labor process.

### **Key Points**

This study was a prospective, descriptive study within an open-label randomized controlled trial (Wong et al., 2022). Twenty-one subjects participated in this trial (Wong et al., 2022). Prior to initiating this study, it was approved by the Cedars-Sinai Medical Center and registered with clinicaltrials.gov (Wong et al., 2022). The enrollment opened in March 2018 and completed in February 2019 (Wong et al., 2022). The participants had to have regular contractions at least every five minutes and their pain need to be rated between a four through seven on the Wong-baker scale (Wong et al., 2022). If the participants had already received pain medications including oral, intravenous, or analgesic they could not participate (Wong et al., 2022). Patients could also not participate if they had a risk or history of seizures (Wong et al., 2022). All participants had to complete a Childbirth Self Efficacy Inventory prior to the VR therapy (Wong et al., 2022). This is a tool that helps perceive the patient's confidence of coping with labor. Then the pickings of subjects were randomized to receive 30 minutes of VR therapy or 30 minutes of no intervention (Wong et al., 2022). There were three scenes of VR therapy each lasting ten minutes (Wong et al., 2022). The first one was a tree that would expand and contract, then a

glowing campfire, lastly a beach scene with crashing waves (Wong et al., 2022). These scenes also had audio guidance. For example, the therapy would say that the contractions represent waves of energy bringing your baby closer to you (Wong et al., 2022). There was also a post interview done documenting how the VR therapy affected them (Wong et al., 2022). An inductive thematic analysis was used to examine the data that was collected during the interviews (Wong et al., 2022). A p-value of  $<0.05$  was used as a threshold for statistical significance (Wong et al., 2022). This research showed that using VR therapy can help improve a laboring patient's pain (Wong et al., 2022).

### **Assumptions**

The authors assumes that VR therapy will help the participants with their labor pains. The VR therapy is supposed to help the patient with their breathing, relaxation, and helps them focus on something other than their pain (Wong et al., 2022). This therapy can be helpful to the patient's who do not want to use pharmacologic pain medication during their labor process. Most of the patients that participated in this study were pleased with their therapy (Wong et al., 2022). This therapy is used to help take their mind somewhere else during the pain helping distract them.

### **Deficit/Conclusion**

This therapy can be extremely helpful to the patient's labor process and their pain management. Guided imagery is one of the most common nonpharmacologic pain management techniques and this therapy provides that along with auditory guidance to help ease the patient's mind. An implication to this study could be the patient still could not handle the pain and needed

pain medication which happened during this study. One of the patient's felt the VR therapy was not helping and requested an epidural immediately (Wong et al., 2022). This study should be accepted by nursing especially for the patients who want to do everything they can to have a pain medication free birth. However, if it was not accepted some implications may include overstimulation for the patient, the therapy does not help with the patient's pain, the patient could get sick from looking at the screen, and eye strain could occur (Wong et al., 2022).

### **Acupuncture of acupressure for pain management during labor**

Each patient going through their labor experience has a different pain tolerance. Each patient has a different pain goal, some women want to try to get through their labor process without using pain medication. Pain management should be satisfactory and individualized for the patient when they are going through their labor process (Smith et al., 2020). Acupuncture or acupressure can be used as a nonpharmacologic pain management technique. This article discusses how acupuncture or acupressure can be helpful to women in labor.

### **Key Points**

This study used a randomized controlled trial (Smith et al., 2020). The participants could be in spontaneous or induced labor (Smith et al., 2020). There were 28 trials with 3,930 women involved (Smith et al., 2020). This study included women who had one or multiple pregnancies (Smith et al., 2020). 15 of the studies used acupressure and 13 studies used acupuncture (Smith et al., 2020). The pain the women were experiencing was measured by the visual analogue scale (VAS) in 25 of the studies (Smith et al., 2020). A Likert scale was also used to assess pain relief satisfaction (Smith et al., 2020). The trials that used acupuncture were assessed used the

NICMAN scale which is an 11-item scale that reviews the quality of acupuncture studies (Smith et al., 2020). 495 women reported that their pain intensity was lowered during this study (Smith et al., 2020). There were lower pain scores for manual acupuncture compared to electro acupuncture (Smith et al., 2020). Only two trials reported satisfaction with pain relief during labor (Smith et al., 2020). 1061 women reported there was no evidence of harm from acupuncture to them or the infant (Smith et al., 2020). This research indicated that acupuncture and acupressure do not help with pain intensity during labor (Smith et al., 2020).

### **Assumptions**

The author assumed at the beginning of this study that acupuncture or acupressure could have with pain relief during the labor process. This is thought because counterpressure during labor can be helpful so it is thought that acupuncture or acupressure could help. The author thought that acupuncture or acupressure would help distract the patient from their pain (Smith et al., 2020). They also thought that the technique itself would take away pain (Smith et al., 2020).

### **Deficit/Conclusion**

When beginning to read this study it is thought that acupuncture and acupressure would help the patient through their labor and help take pain away. However, after reading the results of the study it is shown that this pain management technique is not as helpful as it is thought to be (Smith et al., 2020). The results showed that acupuncture and acupressure make little or no difference to the patient's pain (Smith et al., 2020). This study is not agreeable with nursing because it is not helpful to the patient's pain throughout their labor process. The quality of reporting was poor in most of the studies which affects the results (Smith et al., 2020). The

results on the VAS scale did not improve though for the patient's receiving the acupuncture or acupressure (Smith et al., 2020).

### **Conclusion**

There are several different pain management techniques to help with the labor process. I have only discussed a few in this paper there are still several more techniques that could be discussed. The first technique assessed was using a birthing ball in the first stage of labor and how using the birthing ball can reduce the pain intensity. This article provided a safe and low-cost intervention to help women with their labor process and pain (Mylod et al., 2023). The second technique assessed was using virtual reality therapy during labor to help with pain. This technique was helpful to most of the patient's that participated (Wong et al., 2022). The last technique assessed was acupuncture and acupressure during the labor process. This technique was the least helpful and effective to the labor process providing little to no difference in the participant's pain (Smith et al., 2020). For the birthing ball and VR therapy articles the outcomes could be improved with more participants. If there were more participants there could be more research conducted and more variety of results. The acupuncture and acupressure technique had a lot of participants but the patient outcomes were not helpful for that patient. VR therapy is still new to healthcare but can be implemented more due to the good results of this study. All of these articles affect the nursing practice. They can improve the nursing practice by providing a few different nonpharmacologic techniques for laboring women. All of the articles discussed improve patient outcomes by providing less invasive pain management techniques. Since as nurses, our approach is least invasive to most invasive these articles are helpful with noninvasive techniques. These articles improve evidence-based practice by providing real life results from these studies

to help decide if they should be implemented into nursing care regarding laboring women. All of these articles provide helpful information to the nursing profession.

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