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### THE EFFECT OF ACUPRESSURE TO DECREASE PAIN LEVELS IN POSTPARTUM WOMEN

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#### ABSTRACT

**Background:** Postpartum pain experienced by every mother was a subjective and physiological experience. This is due to increased hormones oxytocin and prolactin, causing uterine contractions after the placenta and the baby was born. The acupressure technique was a non-pharmacological technique aimed at reducing the level of pain in postpartum mothers. This technique has never been applied in dr. R. Soedarsono Pasuruan general hospital.

**Purpose:** This study aimed was to determine the effect of acupressure to decrease pain levels in postpartum women.

**Method:** The population in this study were postpartum women, with a sample of 16 people. The study used *One group, pre-post test design* with *systematic random sampling*. VAS (Visual Analog Scale) was used to collect the data. The data analyzed with Wilcoxon test ( $\alpha = 0,05$ ).

**Result:** The results showed that before acupressure 62,5% postpartum women experienced moderate pain (10 people). After acupressure 62.5% postpartum women experienced mild pain (10 people). The statistic test result showed  $p = 0,00$  ( $p < \alpha$ ) so  $H_a$  was accepted.

**Conclusion:** It can be concluded that acupressure has an effect on reducing the pain level of postpartum women because the emphasis on acupressure points stimulates local endorphin production, thereby activating the pain inhibition mechanism. It was recommended that health workers use acupressure non-pharmacological techniques for postpartum women so that pain can be minimized without adverse effects.

**Keywords:** Acupressure; Pain; Postpartum

#### BACKGROUND

Postpartum pain is a subjective experience of sensations associated with uterine contractions after the baby and the placenta are born. The physiological responses to the problem include increased blood pressure, respiratory pulse, sweating, pupil diameter, and muscle tension. Various efforts have been made to reduce the pain, both pharmacologically and non-pharmacologically. Pharmacological pain management is more effective than non-pharmacological methods, but pharmacological methods are more expensive and have the potential to have adverse effects

(Dickersin, 1989). Meanwhile, non-pharmacological methods are non-intrusive, non-invasive, cheap, simple, and without any adverse effects. Non-pharmacological methods include using techniques, namely breathing, relaxation, acupressure, and massage. Based on research conducted by Sylvia T. Brown, Edd, Rn, Et.all in the United States, in 2010, using ten non-pharmacological methods was carried out, which is an effective technique in reducing pain during childbirth (Nursing Info June 2014). Currently, the use of non-pharmacological acupressure methods has never been carried out in the postpartum ward

of dr. R. Soedarsono Pasuruan, for pain reduction, especially in postpartum mothers.

The preliminary study conducted by researchers in the last 2 months averaged 34 normal deliveries. Of the 34 women who gave birth, 30 took analgesics to reduce pain, and four others did not take analgesics. These data indicate that pharmacological techniques are more widely used among postpartum mothers to treat pain that arises.

Pain in postpartum mothers is pain after the baby and the placenta come out. This pain arises due to contractions in the uterus after the placenta is released, which is used to protect the uterine mucosa from placental rupture so that bleeding can be minimized. This event provides stimulation of free nerve endings as pain receptors, which are contained in the skin, and the impulse network is conveyed through the anterolateral spinothalamic pathway. Pain nerves enter the spinal cord through the dorsal root, then terminate in the cornu dorsal horn of the gray matter of the spinal cord, then the scattered portion of this signal crosses one or more short additional fibrous neurons. Finally, it enters the long fibers, which immediately cross to the opposite side of the spinal cord and ascend to the brain via the anterolateral spinothalamic tract. When the pain trajectory enters the brain, it becomes two separate trajectories. Namely, the stabbing pain trajectory is almost entirely composed of small delta fibers, and the burning pain trajectory consists almost entirely of type C fibers. All these fibers end up in the rhombencephalon and thalamus, causing pain. A decrease or change in pain sensation can occur if pressure is applied to the point, namely Co4, the point on the hand (between the thumb and forefinger). Emphasis on these points stimulates the periventricular area of the diencephalon or the periaqueductal grisea area, delivering signals to the nucleus rafe in the midline. Then from this nucleus, the fibers pass down into the cornu dorsalis, where the pain sensory fibers from the periphery end. Stimulation of the analgesia system (enkephalin and endorphin) will inhibit or suppress the transmission of pain impulses through local neurons in the area of

pain. It is very likely that this analgesic system (enkephalin and endorphins) also inhibits brain transmission at other points in the pain trajectory, particularly in the brainstem nucleus reticular and in the intra-laminar thalamus nucleus (Guyton, 1996), resulting in changes in pain reduction and change perceptions in postpartum mothers and create positive coping.

Acupressure can be performed by nurses independently in providing nursing care to treat postpartum maternal pain as a non-pharmacological effort or action. Acupressure is more appropriate in reducing pain because it is easy to do alone (Arthurs, 1994). Based on the description above, the researchers are interested in conducting research on "The effect of giving acupressure techniques on reducing pain levels in postpartum mothers in the puerperal room of dr. R. Soedarsono Pasuruan".

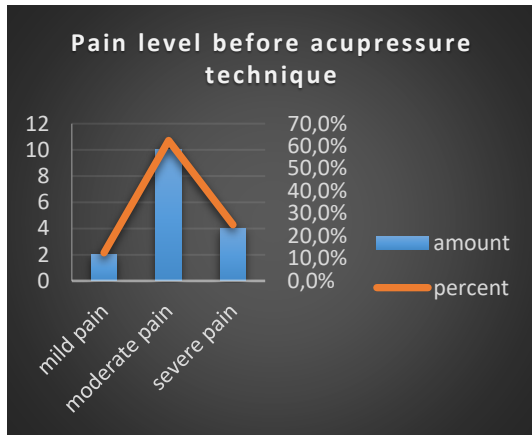
## **METHODS**

The research design used was the Pre-Post Test in one group (One-group Pre Test, Post Test Design). The hallmark of this type of research is to reveal a causal relationship by involving a group of subjects. The subject group was observed prior to intervention, then observed again after the intervention. The population in this study were 17 postpartum mothers after giving birth. The sample in this study is systematic random sampling. The number of pieces used was 16 according to the inclusion criteria; among others, patients were willing to be respondents, in a conscious state, 2 hours postpartum, primigravid and multigravida and mothers with normal delivery, while the exclusion criteria were patients with difficult labor and had was given an analgesic. The instrument used was the VAS (Visual Analog Scale) with Wilcoxon test analysis.

## **RESULT**

Pain level before acupressure technique was performed, it was found that most of the pain levels of postpartum mothers experienced moderate pain levels as many as 10 people (62.5%) and a small proportion

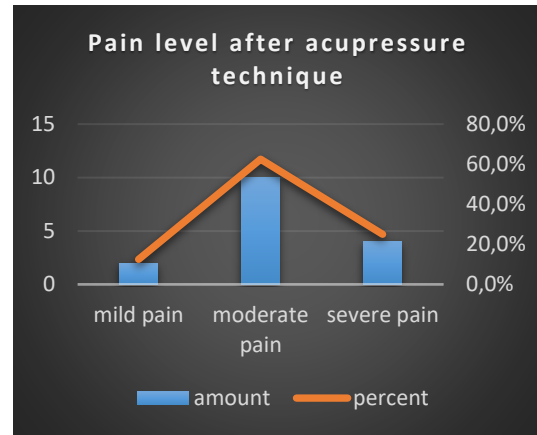
experienced severe pain, namely 25% and 12.5% mild pain.



Source: VAS

**Graphic 1** Bar chart on the characteristics of the level of pain before giving acupressure technique at 2 hours postpartum in dr. R. Soedarsono Pasuruan in January 2020.

the level of mild pain with ten respondents (62.5%), a small proportion experienced moderate pain, 25%, and 12.5% had no problem.



Source VAS

**Graphic 2:** Bar chart on pain level characteristic after giving acupressure technique for postpartum mothers at dr. R. Soedarsono Pasuruan in January 2020

The pain level after the acupressure technique was carried out. It was found that most of the postpartum mothers experienced a decrease in

**Table 1.** Comparison of the table of pain levels before and after giving acupressure techniques to postpartum mothers at dr. R. Soedarsono Pasuruan in January 2020

No	Acupressure technique	Pain Response								Total	
		No Pain		Mild Pain		Moderate Pain		Severe Pain			
		f	%	F	%	F	%	F	%	F	%
1	Before acupressure technique	0	0%	2	12,5%	10	62,5%	4	25%	16	100%
2	After acupressure technique	2	12,5%	10	62,5%	4	25%	0	0%	16	100%

**Table 2.** The Wilcoxon statistical test data table, research on the effect of acupressure techniques on pain levels in postpartum mothers at dr. R. Soedarsono Pasuruan in January 2020.

	Pre-Post Pain Scale
Z	-3.542a
Asymp.Sig.(2-tailed)	.000

a. Based on positive ranks.

b. Wilcoxon Signed Rank Test

The result of the Wilcoxon test, the Z value of (-3.542a) with a significance level of (p) 0.00 <  $\alpha$  (0.05). It can be concluded that the alternative hypothesis ( $H_a$ ) in this study accepted.

## DISCUSSION

Pain is influenced by several factors, including environment, age, fatigue, previous history, problem-solving mechanisms, beliefs/religions, culture, and the presence of supportive people. Meanwhile, postpartum pain is influenced by several factors, including parity, age, education/knowledge, and mental state (anxiety/fear). This is because the level of pain in each person is subjective so that everyone's perception of pain is also different, and the way to solve it is other depending on the way the mother reacts to it. From the results of this study, it was found that postpartum mothers before the acupuncture technique felt mild, moderate and severe pain, and none of the mothers experienced pain, so the researchers concluded that the characteristics of pain were influenced by several things, namely each individual has a different pain threshold level: the difference, age, education/knowledge. The age factor can affect the perception of childbirth, where increasing age also affects the physical and psychological development/maturity of each individual. Increasing age also determines the shape, size, and function of the female reproductive system. This is because a sufficiently mature age will also support when the mother faces the labor process until postpartum mothers because at a mature age, the mother's level of readiness is better, and the mother can adapt to the conditions she is facing so that the level of maternal pain can be minimized directly. The education/knowledge factor also greatly influences the perception of labor pain. The higher a person's education, the higher and easier to receive information so that the more knowledge one has, and vice versa (Mubarak, 2011). In addition, the environment also affects where people who live in cities find it easier to get information from various sources, such as radio, TV, newspapers, magazines, books or information obtained directly from sources. This is because the higher a person's education, the more they think in terms of finding what methods are considered the most effective and safe to reduce pain levels in postpartum mothers. Searching for information is one way to solve

problems, especially now that technology is getting more sophisticated so that it is easier to obtain knowledge information which of course, is supported by the level of education.

The results showed that the characteristics of the level of pain felt by the mother 2 hours postpartum after the acupuncture technique was mostly mild with 10 respondents (62.5%), a small proportion experienced moderate pain with 4 respondents (25%). And no pain with two respondents (12.5%), and none for severe pain criteria. Pain in postpartum mothers is pain after the baby and the placenta come out. The pain arises due to an increase in the hormones oxytocin and prolactin so that the uterus contracts after the baby and the placenta comes out. In order to defend the uterine mucosa from placental rupture so that bleeding can be minimized. This event provides stimulation of free nerve endings as pain receptors, which are contained in the skin, and the impulse network is conveyed in the anterolateral spinothalamic pathway. Pain fibers enter the spinal cord through the dorsal root, then terminate in neurons in the white, gray matter of the spinal cord, then the scattered portion of this signal crosses one or more short additional fibrous neurons. Finally, it enters the long fibers, which immediately cross to the opposite side of the spinal cord and ascend to the brain via the anterolateral spinothalamic tract. When the pain trajectory enters the brain into two separate trajectories, namely, the stabbing pain pathway is almost entirely composed of small type A-delta fibers, and the burning pain trajectory consists almost entirely of type C fibers. All these fibers end in the rhombencephalon and thalamus, causing pain. A decrease or change in pain sensation can occur if pressure is applied to the point, namely Co4 and the point on the hand (between the thumb and forefinger). Emphasis on these points stimulates the periventricular area of the diencephalon or the periaqueductal grisea area, delivering signals to the nucleus rare in the midline. From this nucleus, the fibers pass down into the cornu dorsalis, where sensory pain fibers from the periphery

end. Stimulation of the analgesia system (enkephalin and endorphin) will inhibit or suppress the transmission of pain impulses through local neurons in the area of pain. It is possible that the analgesia system (enkephalin and endorphins) also inhibits brain transmission at other points in the pain trajectory, especially in the brainstem nucleus reticular and in the intra-laminar thalamus nucleus (Guyton, 1996). Acupressure techniques that can be performed on postpartum mothers due to pressure at the acupressure will stimulate local endorphin production, thereby activating pain inhibition mechanisms in the central nervous system, such as the production of endogenous opioids in the pituitary or brain stem, which is enhanced by acupressure. Acupressure is also considered to be a “gate closing” of pain implants due to presynaptic inhibition of sensory fibers at the level of the dorsal horn by stimulating large-diameter sensory fibers.

The results of this study concluded that the acupressure technique is one of the non-pharmacological techniques that are effective in pain management (Dickersin, 1989). This can be evident from the results of the study above that most postpartum mother who experienced mild pain were 10 respondents (62.5%). The results showed that using the Wilcoxon test, the Z value was (-3.542a) with a significance level of  $\alpha < 0.05$  so that  $p < \alpha$ . These results indicate that there is an influence on the level of pain before and after the acupressure technique is applied to postpartum mothers. Pain in postpartum mothers is pain that occurs due to an increase in the hormone oxytocin and prolactin, resulting in contractions of the uterus after the baby and uri come out. In order to defend the uterine mucosa from placental rupture so that bleeding can be minimized. This event provides stimulation of free nerve endings as pain receptors. All these fibers end in the rhombencephalon and thalamus, causing pain. Emphasis on acupressure points stimulates local endorphin production, thereby activating pain inhibition mechanisms, and the level of pain you feel can be reduced. It was concluded that the acupressure technique had an effect on

reducing the pain level of postpartum mothers. Postpartum maternal pain is physiological, which is influenced by the experience of childbirth, which shows that multiparous mothers feel more pain than primiparous mothers (Dickersin 1989). The decrease in uterine fundal height is influenced by the strength of uterine contractions, which decreases in intensity in the mother. So it takes action that helps to reduce the level of postpartum maternal pain that is safe and effective, namely the provision of acupressure techniques.

## CONCLUSION

- a. The level of pain felt in postpartum mothers before giving acupressure techniques was mostly moderate pain.
- b. The level of pain felt in postpartum mothers after giving acupressure techniques was mostly mild pain.
- c. There was an influence on pain level before the acupressure technique was applied and after the acupressure technique was applied in postpartum

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## REFERENCES

- Arikunto. 2010. *Prosedur Penelitian Suatu Pendekatan Praktik*. Jakarta; Rineka
- Bahiyatun. (2013). *Buku Ajar Asuhan Kebidanan Nifas Normal*. Jakarta: EGC
- Cipta 2. Bobak, Lowdermik & Jansen. 2004. *Buku Ajar Keperawatan Maternitas*. Jakarta; EGC
- Mahishale, et al. (2013). *Effect of Therapeutic Ultrasound and Maternal Cooling Gel Pad for Perineal Pain Following Vaginal Delivery with Episiotomy*. *J Women's Health Care*, 2:3. 10. Mohamed, H.A., & El-Nagger, N.S.
- Mubarak, W. I. (2011). *Promosi Kesehatan untuk Kebidanan*. Jakarta: Salemba medika.
- Nursalam. (2008). *Konsep dan Penerapan Metodologi Penelitian Ilmu Keperawatan Pedoman Skripsi, Tesis, dan Instrumen Penelitian Keperawatan*. Jakarta: Salemba Medika.
- Oxorn, Harry. 2010. *Ilmu Kebidanan Patology & Fisiologi Persalinan Human Labour And Birth*. Jakarta: Yayasan Essentia Medica
- Riyanto, A. (2011). *Aplikasi Metodologi Penelitian Kesehatan*. Yogyakarta: Nuha Medika.
- Saifuddin, Abdul Bari. *Buku Acuan Nasional Pelayanan Kesehatan Maternal dan Neonatal*. Cetakan Keempat. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo ; 2011.
- Sari. 2014. *Pengaruh Terapi Musik Klasik Terhadap Penurunan Nyeri Pada Pasien Post Sectio Caesarea*. Surakarta
- Wals, L. 2008. *Buku Saku Perawatan Prenatal dan Pascapartum*. Jakarta: EGC.
- Winkjosastro, H. *Ilmu Kebidanan*. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo ; 2007. Jakarta; EGC
- Wenniarti. 2016. *Pengaruh Terapi Ice Pack Terhadap Perubahan Skala Nyeri Pada Ibu Post Episiotomi*. Universitas Sriwijaya