
EFFECTIVENESS OF ACUPRESSURE METHOD AT MERIDIAN POINT BL 32 AND GB 21 TO DECREASE THE PAIN LEVEL DURING CONTRACTIONS IN THE FIRST STAGE OF LABOUR IN BPM VIVI UMAMIYANTO AND BPM ISTIQOMAH SURABAYA

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INFORMATION ABOUT ARTICLE:

Article history:

Date Received :

Date Revised :

Date Published:

Keywords:

Acupressure

Pain during contractions

Labour

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ABSTRACT

Pain during labour is physiological, associated with contractions experienced by childbearing women, different responses to pain, and inability to adapt to pain during the first stage of labor which may lead to other problems during childbirth. Acupressure is a nonpharmacological technique implemented by giving pressure at meridian points in the body for pain management during labour.

Acupressure has long been used in medication, but it has not been used in pregnancy and childbirth yet because the steps of acupressure to be analyzed are quite a lot so it is difficult to be implemented as a routine care during labour. Therefore, the meridian system and certain points focusing on reducing the pain caused by contractions during labor need to be determined; and taking into account the intensity of contractions is equally important. Specific acupressure points related to the effects of relaxation and pain reduction are meridian point BL 32 and GB 21.

The purpose of this study was to determine the effectiveness of acupressure method at the point BL 32 and GB 21 to decrease the level of pain of contractions during labor. This quantitative research done using experimental design used one-group pre-post test design. The population involved women during the first stage of labour in BPM Vivi Surabaya totaling 20 respondents. Data Analysis was done using SPSS 20 and Wilcoxon Sign Rank test with $\alpha = 0.05$.

The result showed that labor pain decreased after acupressure. The result of Wilcoxon signed rank test with significance level $\alpha = 0.05$ showed that $P = 0.002$ in which $P < \alpha$ so that H_0 was rejected; it means that acupressure at the meridian point BL 32 and GB 21 was effective to decrease the labor pain. Hence, midwives are expected to apply acupressure, especially at the meridian point BL 32 and GB 21 as an effort to reduce the pain as part of a routine care for childbearing women, especially during the first stage of labour.

INTRODUCTION

Labour is a natural process associated with the occurrence of contractions, especially in stage I and II which are accompanied by pain. Responses of childbearing women to pain are very different; even some of them cannot adapt to pain during the first stage of labor, especially those experiencing their first labour or those who are unable to control emotion and too tired, so they will cause other problems during childbirth process (Anik, 2010).

The first stage of labor takes a long time approximately 1-14 hours, especially in primigravida (MOH R.I, 2012). The prolonged first stage of labor causes prolonged pain so that it can lead to maternal fatigue resulting in emotional responses, such as anxiety and

tension. Prolonged labor pain may lead to hyperventilation, which affects the level of PaCO₂ of mother and fetus so that the fetal heart rate slows down (Marmi, 2012). The response to this pain also stimulates the increased catecholamines that causes interference on uterine contractions that become irregular/inadequate called uterine inertia, which causes prolonged labor. The prolonged labor increases the risk of *postpartum hemorrhage*, *chorioamnionitis* and complications in neonates/newborns. (Bobak, 2011)

Efforts to reduce pain can be done by means of pharmacological and nonpharmacological methods. Controlling pain can be done using pharmacological analgesics, such as inhalation, analgesic opioid, and regional anesthesia (Prasetyo *et al*, 2010).

Whilst, nonpharmacological pain control includes relaxation, breathing techniques, position changes (Tamsuri, 2007), as well as *masage, hydrotherapy, acupuncture, acupressure, hypnobirthing, intradermal water blocks*, music, TENS (Transcutaneous, electrical Nerve Stimulation) and warm compresses (Anik, 2010).

On the other hand, the onset of contraction as the source of pain is an important factor for the smooth progress of labor so that the selection of efforts to decrease the pain must consider the intensity of the contractions. It means that not all methods can be used safely and effectively during labour. Moreover, if the effort brings impacts on the intensity of the contractions, it will cause complications during labor, such as uterine inertia and prolonged labour. Pharmacological methods have a higher effectiveness in reducing pain than non-pharmacological ones. Yet, pharmacological methods may bring unexpected side effects, whereas non-pharmacological method has no side effects at all.

Research conducted by Sylvia T. Brown, EdD, RN, Carol Douglas, MSN, RN, and LeeAnn Plaster Flood, MSN, CNM used 10 nonpharmacological methods performed on the sample totaling 46 people showing that breathing techniques, relaxation, massage and acupressure are the most effective techniques to decrease pain during labor contractions. In fact, acupressure is used very rarely in providing maternity care. The common efforts done by almost every birth attendant only include breathing relaxation techniques, lying position and massage by back-rubbing, whereas acupressure is considered difficult because the large number of points are involved in this treatment.

Acupressure is one of nonpharmacological techniques in pain management during labour. (Mehta, 2002). Acupressure is also called acupuncture without needles, or acupuncture massage; this technique uses suppression technique and massage along the meridian of body or energy flow lines so it is relatively easier to do than acupuncture itself (Sukanta, 2010). Acupressure is a method that has long existed, but its application in pregnancy and childbirth is a new development

in midwifery care expected to reach mother-loving care.

Acupressure method has a system and many therapy points, including acupressure related to pregnancy and childbirth. If acupressure is done at the whole points, this method will be quite difficult to be implemented by the midwife or the patient's family as a routine care to childbearing women especially when contractions happen. Basically, each point on acupressure method has specific functions according to client's physical needs. Results of research done by Lee, M., Chang, S. & Kang, D. (2004) showed that the implementation of acupressure method related to pregnancy and childbirth affected the pain scale and increased the contractions. Some points of acupressure method not only can reduce pain but also increase the intensity of the contractions to speed up the delivery (Chung et.al, 2003). In women with adequate contractions, the increasing intensity of the contractions can cause complications, such as uterine tetania and fetal distress.

Based on the considerations, we need to choose the method appropriate with specific system focusing on reducing the pain of labor contractions. Taking into account the intensity of contractions is also equally important, Specific acupressure points related to the effects of relaxation and pain reduction are BL 32 and GB 21. Therefore, the writer felt the need to analyze the effectiveness of acupressure method, especially on the meridian system point BL 32 and GB 21 to decrease pain during labor, especially in the first stage of labour.

RESEARCH METHOD

This quantitative research done using experimental design used one-group pre-post test design. The population involves women during the first stage of labour in BPM Vivi Surabaya totaling 20 respondents.

Data collection is done through interviews and observation. The writer measures the pain level (pretest) prior to warm compress at a peak time of contraction after entering the active phase of the first stage by asking the respondents to point at the number in a pain scale when the peak of the contraction occurs.

The writer applies acupressure on the approval of the respondents and their husbands. Pain scale is measured using a Numerical Rating Scale (NRS) according to the theory proposed by Smeltzer, S.C and Bare B.G (2002), as quoted from Maryunani Anik (2010). Measurement performed before and after acupressure is the pain level that occurs at the peak of contraction that is the midpoint of the duration of the contraction.

Acupressure done for 1-2 minutes started when the contraction occurs until subsides, done in 3 occurrences of contraction (totaling 5 minutes). Data analysis done with a computer program uses Wilcoxon Sign Rank test with $\alpha = 0.05$

RESULTS AND DISCUSSION

The frequency distribution shows the pain level during contractions before acupressure on the meridian point BL 32 and GB 21.

Table 1. Frequency distribution of pain level during contractions before acupressure

No.	Pain level	Frequency	Percentage (%)
1.	No pain	0	0
2.	Mild pain	3	15
3.	Moderate pain	6	30
4.	Severe pain	11	55
5.	Unbearable pain	0	0
Total		20	100

Table 1 shows the frequency distribution of pain during contractions before acupressure. Most of the respondents (55%) experience severe pain. In this condition, the pain threshold is 8-10.

The frequency distribution shows the pain level during contractions after acupressure treatment at the meridian point BL 32 and GB 21. Measurement of contractions is done in the period of contraction after the measurement of contractions before treatment.

Table 2. Frequency distribution of pain level during contractions after acupressure

No.	Pain level	Frequency	Percentage (%)
1.	No pain	0	0
2.	Mild pain	7	35
3.	Moderate pain	9	45
4.	Severe pain	4	20
5.	Unbearable pain	0	0
Total		20	100

Table 2 shows the frequency distribution of the pain of contractions after acupressure treatment. Nearly half of the respondents (45%) have moderate pain. Moreover, nearly half of them (35%) experience a reduction in pain scale down to mild pain.

Table 3. Frequency distribution of pain during contractions before and after acupressure

Acupressure at meridian point BL 32 and GB 21	Menstrual pain level				Total
	No pain (%)	Mild (%)	Moderate (%)	Severe (%)	
Pre	0 (0)	3 (15)	6 (30)	11 (55)	20 (100)
Post	0 (0)	7 (35)	9 (45)	4 (20)	20 (100)
<i>Wilcoxon sign signed rank test</i>					
<i>Asymp Sig (2-tailed) = 0.002</i>					
<i>Negative rank = 14</i>					
<i>Positive rank = 0</i>					
<i>Ties = 6</i>					

Table 3 shows that among the respondents, 20 women experience the decrease of pain level after acupressure treatment at the meridian point BL 32 and GB 21.

The result of statistic test using Wilcoxon signed rank test shows that the pain level after acupressure treatment is smaller than before acupressure. Seen from its value, 14 respondents experience a decrease in pain level after receiving acupressure at the meridian point BL 32 and GB 21; and the value of posttest is greater than the value of pretest which scores value of 0. It means that no respondents experience the increasing pain level after receiving acupressure at meridian point BL 32 and GB 21. Moreover, the value of pretest is equal with the posttest which scores value of 6.

It means that 6 respondents experience no change in pain level both before and after receiving acupressure at the meridian point BL 32 and GB 21.

Based on the result of Wilcoxon signed rank test using a computer program with a significance level $\alpha = 0.05$, it shows that $P = 0.002$ in which $P < \alpha$ so that H_0 is rejected. It means that acupressure at the meridian point BL 32 and GB 21 is effective to decrease the pain level in the first stage of labor pain at the active phase.

Acupressure is a nonpharmacological management to reduce labor pain. Acupressure presses certain points on the body of a person with fingers, elbow, or some sort of small wooden blunt tool, a pen, and other similar things. Massage is done gently by making circles at that point. At first, it is recommended to give gentle pressure and not too hard. When it feels comfortable, press harder. Acupressure done for about 2 minutes is an easy action to do.

Acupressure can also give strength to women during childbirth and encourage the involvement of the couple to get closer to labor process and antenatal education. It is a non-invasive treatment that does not have any adverse effects for the patient so that it can be done by midwives or patient's family. In this study, the clients feel comfortable and experience pain reduction after acupressure treatment done by the family.

Acupressure conducted by the writer specifically at the meridian point, at which the point is the channel that can flow the vital energy throughout the body as well as the connector of all nerves to other meridian points. Besides, acupressure also works quite fast, usually for one until two minutes to reduce pain because the acupressure points can affect neurotransmitters in the body when stimulated. In this study, we can find various benefits of doing acupressure at the meridian point BL 32 and GB 21: to reduce pain without decreasing the intensity of uterine contractions and to increase muscle strength and pushing power during childbirth.

Acupressure at the meridian point BL 32 and GB 21 is effective to decrease pain through its effect on the release of endorphine. This hormone can block pain receptors to the

brain so that clients will feel more relaxed. Pain and stress-related factors are known to influence the release of beta-endorphins-lipotrofin hormone and Adreno Cortico tropic hormone (ACTH). Beta lipotrofin is an endogenous substance in which the character is similar to morphine. Beta endorphin is a group of beta lipotrofin produced by the pituitary gland. This substance works as a carrier of chemical and works as a natural analgesia. Sukanta (2008)

Qualitative data was found by Brown et al (2001) and Wu (2003) quoted in Budiarti, (2011) which also states that positive feeling is usually felt and expressed by the patients when the health workers using acupressure or effleurage to relieve labor pain. Another study conducted by Rusdiatin (2007) in Bantul also stated that acupressure technique is effective in helping women to reduce labor pain. These results are in line with Mender's statement (2003, in Budiarti, 2011) that labour pain may affect the functional mechanism that cause disturbances in uterine contractions that may lead to uterine inertia. If this problem is not treated, it will cause prolonged labor. Acupressure in labor is proved to influence the decrease in the intensity of labor pain so that physiological stress responses can be reduced and prolonged labor can be avoided.

Some points involved in acupressure method not only reduce pain but also increase the intensity of the contractions to speed up the childbirth. The childbearing women with adequate contractions can also increase the intensity of the contractions that leads to complications, such as uterine tetania and fetal distress. In this study, the writer also observes the normal characteristics of contractions so that the effects of acupressure on contractions during labour can be evaluated. Based on the results of observation, no respondents is found with the increasing intensity of the contractions that exceeds the normal limits, nor vice versa. The decreasing pain level is not accompanied by the decrease of the intensity of contractions that can slow down delivery. Therefore, when the respondents feel comfortable with acupressure that has been done, then it is continued by a labor attendant after receiving explanations

about how to do it to make sure that she has done it correctly.

CONCLUSION

Acupressure at the meridian point BL 32 and GB 21 are effective to decrease pain level during contractions in the first stage experienced by the childbearing women in BPM Vivi Surabaya. Therefore, midwives are expected to apply acupressure, especially at the meridian point BL 32 and GB 21 as an effort to reduce pain as part of a routine care for childbearing women, especially in the first stage of labor. It is also necessary to conduct counseling during pregnancy and include the involvement of family or labour attendant considering that it is an easy method that can be done by anyone, of course, after receiving explanation from midwives. Moreover, educational institutions are expected to provide their students with acupressure so that they can apply it at the meridian point BL 32 and GB 21 as midwifery care during labour, and to increase knowledge and skills of the graduates in variety of care appropriate with the needs and the latest science and technology development.

ACKNOWLEDGEMENT

Our gratitude goes to several parties, including:

1. BPM Vivi Surabaya and the childbearing women for willingness to become the respondents in the study
2. Rector and chairperson of LPPM UNUSA for facilitating and giving permission in the implementation of this study
3. Kemenristekdikti for funding this study through the selection of PDP grant program (Research for Junior Lecturers) in the 2016 financial year

REFERENCES

- Bobak, L.J. 2011. *Buku Ajar Keperawatan Maternitas*. Jakarta : EGC
- Budiarti, K. Dewi. 2011. *Hubungan akupresur dengan tingkat nyeri dan lama persalinan kala I pada ibu primipara di Garut*. Jakarta: FIK UI
- Chung, L., Hung, L., Kuo, S., Huang, C. 2003. *Effects Acupressure on Labor Pain and Uterine Contractions in the First Stage of*

Labor. Journal of Nursing Research Vol. 11, No. 4, 2003

- Depkes. 2012. *Asuhan Persalinan Normal*. Jakarta: JNPK-KR
- Lee, M., Chang, S. & Kang, D. 2004. *Effect of Acupressure on labor Pain and Lengt of Delivery Time in Women During Labor*. The Journal of alternative and complementary Medicine, Vol 10
- Marmi. 2012. *Intranatal Care*. Yogyakarta : Pustaka Pelajar
- Maryunani, Anik. 2010. *Nyeri Dalam Proses Persalinan*. Jakarta : Trans Info Media
- Mehta, H. 2002. *The Science and Benefits of Acupressure therapy*. <http://www.associatedcontent.com>. di akses tanggal 10 Maret 20115
- Prasetyo, Sigit Nian. 2010. *Konsep dan Proses Keperawatan Nyeri*. Yogyakarta : Graha Ilmu
- Rusdiatin, I.E. *Pengaruh pemberian tehnik akupresur terhadap tingkat nyeri persalinan kala I di Rumah Sakit Rajawali Citra Potorono Bantul*. Yogyakarta: Seminar Nasional Tehnologi.
- Sukanta, P.Okta. 2008. *Akupresur & Minuman untuk Mengatasi Gangguan Kesehatan Reproduksi*. Jakarta: PT Eka Media Komputindo
- Sukanta, P.Okta. 2010. *Pijat Akupresur Untuk Kesehatan*. Jakarta: Penebar Plus
- Sylvia T. Brown Douglas, C. Plaster. L.A. 2000. *Women's Evaluation of Intrapartum Nonpharmacological Pain Relief Methods Used During Labour*. Diakses pada tgl 10 desember 2015 dari <http://www.pubmedcentral.nih.fegi>
- Tamsuri, Anas. 2007. *Konsep dan Penatalaksanaan Nyeri*. Jakarta: EGC
- Yessi Aprilia. 2014 *Gentle Birth Balance: persalinan holistik mind, body, and soul* Bandung: Qonita

