



Decreased Low Back Pain in Pregnant Women, Can Acupressure Decrease?: Literature Review

Berlina Putrianti¹, Zulvi Tri Andini¹, Benny Karuniawati^{1*}

¹Study Program D III Midwifery Of Politeknik Kesehatan Karya Husada Yogyakarta
Corresponding author's email: bennykaruniawati@gmail.com

ABSTRACT

Along with the age of pregnancy followed by the enlarged uterus, the center of gravity will move towards the front so that pregnant women must adjust their standing position during pregnancy pregnant women depending on muscle strength, weight gain, joint relaxation properties, fatigue and posture before pregnancy. Improper posture will force additional stretching and fatigue on the body, especially on the back of pregnant women. Low back pain (NPB) is one of the discomforts of pregnant women in the third trimester of her posture. The results of research on pregnant women in various regions of Indonesia reached 60-80% of people experiencing low back pain in their pregnancy if this low back pain is not handled properly can cause the quality of pregnant women to be bad. According to several studies various complementary techniques that can be applied to overcome low back pain in pregnancy that have been developed include massage therapy (61.4%), relaxation (42.6%), yoga (40.6%), acupuncture (44.6%), and acupressure (44.6%) Acupressure is a development of massage therapy that goes on along with the development of acupuncture because acupressure massage techniques are derived from acupuncture. Method: review literature with a traditional literature review (narrative) and grouping similar extraction data according to the results measured to answer the purpose. Results: based on the results of reviews from 5 journals obtained p-value results of 0.000. Conclusion: p the acupressure massage 3 times 15 minutes can reduce back pain significantly.

Keywords: *Acupressure; Back Pain; 3rd Trimester Pregnant Women*

1. INTRODUCTION

Pregnancy is a completely natural and normal process. During pregnancy, a mother goes through physical and psychological changes. These changes cause pregnant women to experience discomfort [1]. Pain is an unpleasant subjective condition that is both a sensory and emotional experience. Low back pain in pregnancy becomes a problem that interferes with the comfort of the mother while undergoing the pregnancy process. Low back pain (NPB) is one of the discomforts of pregnant women in the third trimester, usually will increase in intensity as the gestational age because this pain is a result of a shift in the woman's centre of gravity and posture [1].

Improper posture causes additional stretching and fatigue in the body, particularly in the spine, resulting in aches and pains in pregnant women's backs [2]. According to research, more than half of pregnant women in the United States, Canada, Iceland, Turkey, Korea, and Israel suffer from spinal pain. According to a 2014 survey

conducted by the University of Ulster, 70% of 157 pregnant women experienced low back pain [3].

According to research conducted on pregnant women in various regions of Indonesia, 60-80 percent of women experience low back pain during their pregnancy. Previous research has found that the majority of pregnant women suffer from low back pain. According to the findings of a study of 30 pregnant women, there were 21 people (70 percent) who had severe back pain prior to acupressure and 24 people (80 percent) who had mild pain after acupressure [2].

Based on the 2019 Indonesian Health Data Profile report there were 5,256,483 pregnant women in Yogyakarta Indonesia there were 59,540 people, in the Sleman region the number of pregnant women was 15,206 people experiencing low back pain. Treatment of low back pain during pregnancy is necessary to reduce this discomfort. Among them are pharmacological therapy and non-pharmacological therapy. The pharmacological treatment of low back pain includes *the* use of opioids (narcotics), *non-opioid/nonsteroidal* anti-

inflammatory drugs (NSAIDs), co-operative analgesics or coanalgesic [1]. Analgesic use is not always effective for reducing low back pain, the use of NSAIDs should not be used at the gestational age of infants under 30 weeks, because it is at risk of causing malformations in the fetal formation process, while the use of *opioids* to reduce low back pain is at risk of causing complications such as respiratory depression in the fetus or the effects of *opioid* dependence. In mothers after using it for a long time (Sinclair, 2015). Various complementary techniques that have been developed to overcome low back pain in pregnancy, according to some studies, include massage therapy (61.4 percent), relaxation (42.6 percent), yoga (40.6 percent), acupuncture (44.6 percent), and acupressure (44.6 percent) [4].

Acupressure is the evolution of massage therapy that parallels the evolution of acupuncture science, because acupressure massage techniques are derivatives of acupuncture science (Hartono, 2012). Acupuncture is a treatment that is done by inserting needles at certain points in the patient's body to restore the body's balance system and immunity (Ika, 2019). Acupressure massage at bladder point 23 (BL 23), GV 3 and GV 4 can reduce muscle firmness, smooth blood flow and stimulate endorphin expenditure so that it has an effect on decreased pain so that it is effective in reducing the intensity of low back pain in pregnant women [4].

2. METHOD

The method used is review literature with a traditional literature review (narrative) and grouping similar extraction data according to the results measured to answer the goal. The criteria of the journal reviewed are research articles with pregnant women's subjects and acupressure and trimester 3. Searches for articles are done through google scholar and Ebsco with a published

time span of 2016-2021. Search results obtained 130 articles. The research article obtained next conducted screening, viewed abstractly, then read the article full text. Research journals that meet the inclusion criteria are then compiled into a journal summary that includes the researcher's name, the year the journal was published, the purpose of the study, the country of the study, and a summary of the results or findings. The analysis method involved analyzing the contents of the journal, then coding the contents of the journal reviewed, and finally summarizing and comparing the literature with each other.

3. RESULT AND DISCUSSION

Based on the results of the review of articles conducted with the topic of acupressure to reduce back pain in pregnant women can be explained as follows: a) The design of the study used is quasi experimentation with the pre post-test design approach, b) The study subjects are third trimester pregnant women, c) Sampling techniques used there are purposive sampling as many as 4 articles and 1 article using total random sampling techniques, d) The number of samples used in the study varied between 12 pregnant women and 30 pregnant women. As for the purpose of the research of each article there are 3 articles with the aim to find out the effect of acupressure on lower back pain in pregnant women in the 3rd trimester, 2 other articles aim to find out and analyze the effect of acupressure at bladder point 23 on decreased lower back pain. The results of a review of 5 articles conducted can show that the respondents used are pregnant women in the age range of 20-35 years with a gestational age of 29-36 weeks. The research location of the 5 articles reviewed is Indonesia. Data analysis techniques from 5 articles reviewed using 4 articles using paired t-test and 1 article using Wilcoxon analysis. The data that has been submitted can be seen in table 1.

Table 1 Characteristic article

	Article 1	Article 2	Article 3	Article 4	Article 5
Author	Dewi Candra Resmi, Indrawati Aris Tyarini	Ni Gusti Ayu Pramita Aswitami, Putu Mastiningsih	Ratna Dewi Permatasari	Niken Tri Sukeksi, Gita Kostania, Emy Suryani	Ni Luh Putu Sentania Widhi Permana Putri, Ni Wayan Suamiti, Ni Nyoman Budian
Title	The effect of acupressure on low back pain in pregnant women in the third trimester	Effect of acupressure therapy on low back pain in third trimester pregnant women at Albian Semal Health Center 1	The effectiveness of acupressure techniques at points BL 23, GV 3, GV 4 on low back pain in third trimester pregnant women at Jelakombo Jombang Public Health Center	The effect of acupressure techniques on low back pain in third trimester pregnant women at the Jogonalan Public Health Center, Klaten	The effect of Bladder 23 acupressure on the intensity of low back pain in third trimester pregnant women at UPTD Puskesmas 1 North Denpasar
research design	Quasi Experiment Design with non-	Pre-experimental design with a one-group pre-post-	Quasi experiment with pre-test and	Pre-Experiment with one group pre-	Pre-Experiment with one group pre-

	Article 1	Article 2	Article 3	Article 4	Article 5
	equivalent pre-test post-test approach	test design approach	post-test design approaches	test post-test design approach	test post-test design approach
Subject	Third trimester pregnant women	Third trimester pregnant women	Third trimester pregnant women	Third trimester pregnant women	Third trimester pregnant women
Sample	Purposive sampling with a total of 14 pregnant women	Purposive sampling with 20 pregnant women	Total random sampling, there are 22 pregnant women	Purposive sampling technique as many as 30 pregnant women	12 third trimester pregnant women selected by purposive sampling
Purpose	Knowing the effect of acupressure on low back pain in third trimester pregnant women	Knowing the effect of acupressure techniques on low back pain in third trimester pregnant women	Analyzing the effectiveness of acupressure techniques at points BL 23, GV 3, GV 4 on reducing pain in pregnant women in the third trimester of lower back	Knowing the effect of acupressure on back pain pregnant women	Knowing the effect of bladder point pressure 23 on the intensity of low back pain in third trimester pregnant women
Country	Indonesia	Indonesia	Indonesia	Indonesia	Indonesia
Result	The results showed that the mean level of low back pain on acupressure before treatment was 4.93 ± 2.056 , the average after treatment was 2.64 ± 1.646 . The results of the Paired Samples Test obtained a p value of 0.000 which means that there is a decrease in low back pain after treatment so that there is a significant effect of acupressure on low back pain before and after treatment.	From the results of statistical tests, it can be seen that there are differences in pain levels in the treatment group before and after the study. Acupressure therapy had a significant effect ($p < 0.05$) on reducing back pain in pregnant women	The results of the analysis in the acupressure group obtained a p value of 0.001 ($p < 0.05$), meaning that there was a difference in complaints of low back pain before and after the intervention. The results of the analysis in the group after being given the intervention based on the mean value	The results of the study: Back pain in pregnant women after being given acupressure in the Jogonalan I Public Health Center Klaten as many as 24 people (80%) was mild pain. Test the hypothesis with a value of $t = 9.893$ and ($p0.001 < 0.05$)	The results of low back pain intensity before treatment obtained a mean value of 4.17 and after treatment it changed to 2.67 with $p = 0.000 < (0.05)$ and t value (9.950). The conclusion is that there is an effect of bladder point 23 acupressure on the intensity of low back pain in third trimester pregnant women
Analysis	paired t test	paired t test	Wilcoxon	paired t test	paired t test

The age of pregnant women from 5 articles conducted a majority review, namely the age of 20-35 years. This suggests that the majority of respondents of reproductive age are in good health. This statement is consistent with the BKKBN, which states that the ideal age for women to become pregnant is between the ages of 20 and 35 because it is a safe age for childbirth and fertility is at its peak. Pregnancy under the age of 20 years or over 30 years is also not good because the body is still developing and cannot compensate at the time of pregnancy, whereas with age or over 35 years may be ovum owned not as when still young age, and a woman has a limited number of ovum, so the number of ovum's decreases with age.

The gestational age of the study respondents ranged from 29 to 36 weeks in the five articles reviewed. Back pain, difficulty breathing, sleep disturbances, frequent urination, abdominal contractions, swollen ankles, leg cramps, anxiety, and a variety of other complaints can occur during the third trimester. Pregnant women's lower back pain can be caused by an incorrect body attitude and weak muscles. The weight of the fetus pushes pregnant

women's bodies forward, and to compensate, pregnant women tend to strengthen their shoulders and upper back muscles. The presence of pungung and ligament pain in an older pregnancy is caused by increased pelvic movement toward uterine enlargement. Because of the lack of abdominal muscles, body shape is constantly changing in response to uterine enlargement in the future [5].

Parity respondent to the 5 articles is a multipara pregnant woman. Multipara status is closely related to the occurrence of low back pain, because in multipara mothers experience excessive muscle stretching during pregnancy plus still have to carry her first child also do other spells [2]. The mechanism of back pain in multipara mothers is different from that of primipara pregnant women, because in multipara there are changes in the previous pregnancy that cannot be fully restored after pregnancy until labor is complete, it is affected by muscle tone that stretches in previous pregnancies. In multipara if after childbirth does not do proper physical exercise, then the muscles in the uterus and abdomen will relax. So

that the abdominal muscles become weak during the next pregnancy and cause failure in the uterus that is getting bigger and will relax so that it can cause the curve of the back to be more elongated. Thus the severity of lower back pain will increase along with the occurrence of parity [6].

From the results of the review of the article the frequency of acupressure massage conducted to reduce complaints of lower back pain is done as much as 2 to 3 times a week. for 10-20 minutes with a length of 2-12 weeks can affect the decrease in low back pain in pregnant women in the third trimester. This is in accordance with research conducted by Dewi which states acupressure has an effect on decreasing the level of low back pain in pregnant women. In his research acupressure in pregnant women with low back pain was done 2 times a week for 3 weeks with a duration of 15 minutes. Acupressure is useful for curing hard-to-cure aches and pains such as back pain, spondylitis, stomach cramps, neurological disorders, arthritis etc. Acupressure and acupuncture sessions should be done 2-3 times a week, acupressure is a technique that gives physical pressure on the surface of the body which is the place of energy circulation and balance in cases of pain). In cases of back pain that undergoes bone structure therapy is done 3 times a week until the pain completely disappears. For mild back pain therapy can be done 2 times a week as much as 6 times. The results of a study conducted in Taiwan on 129 pregnant women who experienced low back pain who were given acupressure therapy for 20 minutes and done as much as 2 times a week for 4 weeks can reduce the scale of pain felt by pregnant women. Acupressure has been shown to reduce back pain, headache and nausea.

Based on the results of 5 articles conducted by *the review* there was a decrease in the scale of low back pain after acupressure where the number of respondents who did not experience lower back pain after being done increased by 21.4%, mild pain increased by 38.8%, moderate pain decreased by 29.6%, severe pain decreased by 29.6%, and severe pain once decreased by 1%. Acupressure can stimulate meridian points triggering the release of endorphins, which are nerve chemicals that relieve pain. As a result, the pain will be blocked and blood flow as well as oxygen to the affected area increases. This causes the muscles to relax and promotes healing. Acupressure at the acupuncture point will give a local effect that is a decrease in pain in the area around the point of emphasis. Emphasis on the point done will give effect to physiological biochemical changes and perception or taste[8].

Biochemical changes can be an increase in endorphin levels, physiological changes can be blood flow and oxygen activity, while changes in perception can be a decrease in pain levels. Pain relief therapy is acupressure that is through the increase of the hormone endorphin

after massage at certain points. BL 23 (shensu) is located on the two left and right fingers of the GV meridian, as high as the second lumbar boundary. Point GV 3 is located between the third and fourth lumbar. The GV 4 point, located between the second and third lumbar, is able to bring a sense of relaxation to the body naturally and block pain receptors to the brain. When acupressure points are stimulated, there is a release of tension in the muscles, an increase in blood circulation, and an increase in the life force of the body's energy (qi) to aid the healing process.

4. CONCLUSION

Acupressure massage can reduce complaints of lower back pain done with a frequency of 2 to 3 times a week for 10-20 minutes with a length of 2-12 weeks can affect the decrease in low back pain in pregnant women in the third trimester. Acupressure massage is performed on the GV 3 duck located between the third and fourth lumbar. The GV 4 point, located between the second and third lumbar, is able to bring a sense of relaxation to the body naturally and block pain receptors to the brain.

REFERENCES

- [1] N. T. Sukeksi, G. Kostania, and E. Suryani, "Pengaruh Teknik Akupressure Terhadap Nyeri Punggung Pada Ibu Hamil Di Wilayah Puskesmas Jogonalan I Klaten," *Jurnal Kebidanan dan Kesehatan Tradisional*, vol. 3, no. 1, pp. 1–7, 2018, doi: 10.37341/jkkt.v3i1.61.
- [2] D. Candra Resmi and I. Aris Tyarini, "Pengaruh Akupresur Terhadap Nyeri Punggung Bawah Pada Ibu Hamil Trimester III," *Jurnal Ilmiah Kesehatan*, pp. 56–61, 2020.
- [3] M. Sinclair, C. Close, J. E. McCullough, C. Hughes, and S. D. Liddle, "How do women manage pregnancy-related low back and/or pelvic pain? Descriptive findings from an online survey," *Evidence Based Midwifery*, vol. 12, no. 3, pp. 76–82, 2014.
- [4] N. Luh *et al.*, "Pengaruh Akupresur Titik Ht7," *Poltekkes Mataram*, vol. 8511, pp. 75–83, 2020.
- [5] D. A. Palifiana and S. Wulandari, "Tidur Ibu Hamil Trimester Iii Di Klinik Pratama Asih Waluyo Jati," *Mewujudkan Masyarakat Madani dan Lestari*, pp. 31–40, 2018.
- [6] G. A. P. Aswitami and P. Mastiningsih, "Pengaruh Terapi Akupresur terhadap Nyeri Punggung Bawah pada Ibu Hamil TM III di Wilayah Kerja Puskesmas Abian Semal 1," *Strada Jurnal Ilmiah Kesehatan*, vol. 7, no. 2, pp. 47–51, 2018, doi: 10.30994/sjik.v7i2.171.
- [7] R. D. Permatasari, "Effectiveness of Acupressure Technique at BL 23, GV 3, GV 4 Points on

Decreasing Lower Back Pain in Pregnancy Trimester III at Puskesmas Jelakombo Jombang,” *J-HESTECH (Journal Of Health Educational Science And Technology)*, vol. 2, no. 1, p. 33, 2019, doi: 10.25139/htc.v2i1.1518.

[8] Z. P. Lin, Y. H. Chen, C. Fan, H. J. Wu, L. W. Lan,

and J. G. Lin, “Effects of auricular acupuncture on heart rate, oxygen consumption and blood lactic acid for elite basketball athletes,” *American Journal of Chinese Medicine*, vol. 39, no. 6. pp. 1131–1138, 2011, doi: 10.1142/S0192415X11009457.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter’s Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter’s Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

