

## The Effect of Yoga during Pregnancy on the Intensity of Labor Pain in the First Stage of Primigravida in PMB Midwives Yeti, Cianjur

Merla Amalia

Midwifery Study Program, STIKes Abdi Nusantara, Bekasi, Indonesia

Corresponding author : amaliamerla316@gmail.com

---

### ABSTRACT

Severe and prolonged labor pain can disrupt breathing, circulation, metabolism and uterine function. Pain during labor can cause an increase in blood pressure and interfere with the mother's concentration. Pregnancy can cause stress, worry and anxiety which can have physical and psychological impacts on both the mother and the fetus she is carrying. Prenatal Yoga is a complementary alternative in reducing pain during childbirth. The aim of this study was to determine the effect of yoga during pregnancy on the intensity of labor pain in the first stage of labor in primigravida at PMB Midwife Yeti, Cianjur Regency. The method used in this community service is that this community service is a type of experimental community service in the form of pre-experimental designs. The community service design is one group pretest-posttest design. 60 people. The sample in this study was 38 respondents. Bivariate analysis used the Wilcoxon test. 1st stage labor pain in 38 primigravida respondents before doing yoga average 7.26, standard deviation 1.201 and minimum pain 5 (moderate) maximum pain 9 (severe), 1st stage labor pain in 38 primigravida respondents before doing yoga mean 2.00, standard deviation 1.162 and minimum pain 0 (no pain intensity) maximum pain 4 (mild pain intensity) with p-value <  $\alpha$  (0.000 < 0.05). The conclusion is that there is an influence of yoga during pregnancy on the intensity of labor pain in the first stage of labor in primigravida at PMB Midwife Yeti Cianjur.

---

### ARTICLE INFO

#### **Article History:**

*Submitted/Received 22 Jul 2024*

*First Revised 29 Jul 2024*

*Accepted 30 Jul 2024*

*First Available online 31 Jul 2024*

*Publication Date 31 Jul 2024*

---

#### **Keyword:**

*Pregnancy*

*Labor Pain Intensity*

*Prenatal Yoga*

## INTRODUCTION

The birth process is a natural event that occurs throughout a woman's life cycle to expel the products of conception (fetus and placenta). However, each person interprets the process differently, making it a unique experience. This condition is caused by various factors, including labor pain. Labor pain begins in the first stage, caused by uterine contractions and cervical dilatation. The pain will get worse as the duration and frequency of uterine contractions increases (Nengsih et al., 2022).

Severe and prolonged labor pain can disrupt breathing, circulation, metabolism and uterine function. Pain during labor can cause an increase in blood pressure and interfere with the mother's concentration. Pregnancy can cause stress, worry and anxiety which can have physical and psychological impacts on both the mother and the fetus she is carrying. Anxiety can be caused by physical disabilities, decreased intelligence, emotional mental illness, and excessive pain. Excessive anxiety increases pain (Wulandari, 2018).

The pain experienced by each person is different, and tension due to emotions, anxiety and fear can worsen the sensation of pain during the birthing process. Pain can cause fear and anxiety, which can lead to panic, fatigue, and lack of sleep, all of which can make the pain worse. As a result of the experience of labor pain, various mechanisms for managing labor pain have emerged, including pharmacological methods (administration of analgesic drugs) and non-pharmacological methods (natural methods such as foot spa) (Wagiyo and Putrono., 2022).

The aim of non-pharmacological pain relief is to reduce maternal tension, so that the mother feels comfortable and relaxed as labor approaches. This method can also increase stamina and overcome pain but has no effect on the baby being born. Long labor can be caused by several factors, one of which is pain. There are two types of pain management, pharmacological and non-pharmacological. Non-pharmacological management can be provided in the form of breathing exercises, relaxation, yoga, massage, aromatherapy, hydrotherapy and hypnosis. Continuous management of pain reduction with prenatal yoga, under the supervision of trained health workers, has been proven to significantly reduce pain intensity during the birth process (Franciska et al., 2021).

Prenatal Yoga is a complementary alternative in reducing pain during childbirth. This technique is a natural alternative so that pregnant women have a calmer soul and mind as well as positive energy which can help reduce pain and speed up the birthing process. Prenatal yoga is beneficial for the biomotor component of the muscles being trained, and can also increase cardiorespiratory endurance by increasing oxygen consumption in the body, so it is very beneficial for the mother's physical conditioning during the birth process (Kwon et al., 2020).

The prevalence of pain during childbirth, according to the World Health Organization (WHO), estimates that 210 million pregnancies occur worldwide every year in 2019, with around 20 million mothers experiencing pain during childbirth (Gamayanti, 2022). According to Association of Southeast Asian Nations (ASEAN) pain community service data, 93.5% of people experience moderate to severe labor pain. Based on data, primiparous mothers experience 25%, while multiparous mothers only experience 9%. The pain phase also occurs in three different stages based on the opening, namely 2-4 cm, 4-7 cm, and >8 cm (Mutiah et al., 2022).

The Ministry of Health of the Republic of Indonesia in 2020 reported that the average labor pain rate in Indonesia was 85-90% of pregnant women who were about to give birth experienced severe labor pain and 7-15% were not accompanied by pain (Mayestika and Hasmira, 2021). According to data from Basic Health Community service (Risesdas) of West Java Province, it is estimated that around 65% of 100% of mothers still experience pain during childbirth. Meanwhile, in the Cianjur work area, around 60-70% of mothers experience labor pain (Isnaeni, 2021).

Based on an initial survey conducted at BPM Midwife Yeti, there were 165 birth mothers who visited BPM in 2023, with an average of 14 visits per month. After observing and interviewing ten people about the pain they experienced, seven of them reported experiencing severe circular pain in the lower abdomen to the hips, with facial expressions of severe pain and grimacing, two people reported moderate pain, and one person was still smiling. So, community service used yoga intervention during pregnancy, as previous community service did. Effectively reduces labor pain in the first active phase, showing that yoga during pregnancy is an alternative non-pharmacological labor pain reliever as well as an application of maternal love.

Based on the background explanation, the community service was interested in conducting community service with the title "The effect of yoga during pregnancy on the intensity of labor pain in the first stage in primigravidas in PMB Midwives Yeti, Cianjur Regency".

## METHOD

The type of community service used is a type of experimental community service in the form of pre-experimental designs. The community service design is one group pretest-posttest design of 60 people. The sample in this study was 38 respondents. Bivariate analysis used the Wilcoxon test. The following are the stages of implementing community service at PMB Yeti Cianjur:

### 1. Preparation Stage

Preparations will be carried out starting in May 2024 consisting of:

- Starting from a location survey by visiting the location and partners who will be targeted at PMB Yeti Cianjur.
- The licensing process begins with a permission letter from the university addressed to the relevant institution or organization where services are provided to implement the program. The university also asked for help in obtaining data on the community who will take part in this socialization and training program.
- Bribery of officers, namely the division of duties and responsibilities of lecturers and students involved in this service.
- Bribery of materials and media for community service activities such as yoga videos for pregnant women and information brochures containing about pregnancy and yoga for pregnant women.
- Preparation of evaluation tools in the form of attendance lists, yoga instructors for pregnant women, and writing tools used to collect data for further analysis.

### 2. Implementation of Activities

This activity will be carried out from January to May 2024. The activities that will be carried out are as follows:

- Data collection on pregnant women who come to PMB Yeti Cianjur.
- Then pregnant women are given brochures containing information about pregnancy and yoga for pregnant women.
- Next, the officer in charge provided education to the pregnant mother and showed and gave a yoga video to pregnant women and ended with a question and answer session as well as giving memento gifts.
- Apart from that, pregnant women do yoga activities together once every 2 months.

## RESULTS AND DISCUSSION

Based on community service conducted at PMB Midwife Yeti, Cianjur Regency, the results obtained are listed in tables 1, 2, and 3. The first results relate to the intensity of labor pain in the 1st stage of labor in primigravidas before doing yoga, which are listed in Table 1.

**TABLE 1.** Intensity of labor pain in the first stage of labor in primigravida before doing yoga

Mean	N	Std. Deviation	Min-Max
7,26	38	1,201	5-9

Table 1 shows that the 1st stage labor pain in 38 primigravida respondents before doing yoga had a mean of 7.26, a standard deviation of 1.201 and a minimum pain of 5 (moderate pain intensity) and a maximum pain of 9 (severe pain intensity). Furthermore, the results regarding the intensity of labor pain in the first stage of labor in primigravida after doing yoga are shown in Table 2.

**TABLE 2.** Intensity of labor pain in the first stage of labor in primigravida after doing yoga

Mean	N	Std. Deviation	Min-Max
2,00	38	1,162	0-4

Table 2 shows that the 1st stage labor pain in 38 primigravida respondents before doing yoga had a mean of 2.00, a standard deviation of 1.162 and a minimum pain of 0 (no pain intensity) and a maximum pain of 4 (mild pain intensity). The final results relating to the effectiveness of yoga during pregnancy on the intensity of labor pain in the first stage of labor in primigravida are listed in Table 3.

**TABLE 3.** The influence of yoga during pregnancy on the intensity of labor pain in the first stage of primigravida in PMB Midwife Yeti, Cianjur Regency

Labor Pain Intensity	Mean	N	Std. Deviation	Min-Max	P Value
Before	7,26	38	1,201	5-9	0,000
After	2,00	38	1,162	0-4	

Based on table 3, it is known that the labor pain scale for mothers giving birth with a mean of 7.26 has decreased to 2.00, which means that the pain scale has decreased by 5.26. From the results of the dependent t test, there is an influence with p value ( $0.000 < 0.05$ ). This concludes that  $H_0$  failed to be rejected or  $H_a$  was accepted, so it can be concluded that statistically there was an influence of yoga during pregnancy on the intensity of labor pain in the first stage of labor in primigravidas at PMB Midwives Yeti, Cianjur Regency.

### Description of the Intensity of Labor Pain in the First Stage of Labor in Primigravida before Doing Yoga

Based on the community service results, it shows that the average pain of 1st stage labor in 38 primigravida respondents before doing yoga was 7.26, the standard deviation was 1.201 and the minimum pain was 5 (moderate pain intensity) and the maximum pain was 9 (severe pain intensity).

Labor pain is a feeling of discomfort and a state of pain during labor that occurs from the beginning until complete opening. Pain is caused by contractions of the uterine muscles, stretching of the cervix when it opens, ischemia of the uterine corpus, and stretching of the lower uterine segment. Visceral afferent nerve fibers that carry sensory impulses from the uterus enter the spinal cord in the tenth, eleventh, and twelfth thoracic segments and the first lumbar segment (T10 to L1), starting from the onset of labor until complete opening. Pain can be influenced by fatigue, tiredness, anxiety, and fear which can increase pain.

Pain from the perineum radiates through somatic afferent nerves, especially the pudendal nerve and reaches the spinal cord through the second, third and fourth sacral segments (S2 to S4). These sensory nerve fibers from the uterus and perineum make synaptic connections in the spinal cord horn with cells that give axons which are the spinothalamic tract. During the final part of the first stage and throughout the second stage, pain impulses arise not only from the uterus but also in the abdominal wall, lumbosacral area of the iliac crest, buttocks, and thighs as the fetus passes through the pelvis, so that it is in the thalamus and cerebral cortex that one can perceive, describe, localize, interpret, and begin to respond to pain (Andarmoyo, 2018).

The factors that influence a person's perception of labor pain. Perception and expression of labor pain are influenced by individual culture. Cultural influences can give rise to expectations that are not appropriate to the existing situation, for example Asian women believe that screaming and showing pain is embarrassing and they do not utter words when they feel pain. Beliefs, values, cultural practices influence a mother in perceiving and expressing labor pain.

### **Description of the Intensity of Labor Pain in the First Stage of Labor in Primigravida after doing Yoga**

Based on the community service results, it shows that the pain in the first stage of labor in 38 primigravida respondents before doing yoga had a mean of 2.00, a standard deviation of 1.162 and a minimum pain of 0 (no pain intensity) and a maximum pain of 4 (mild pain intensity).

The pain of childbirth can be intense, especially when bodily tension, anxiety, and fear make it worse. Many women want to give birth by avoiding the use of drugs, or invasive methods such as epidurals. These women often turn to safer alternative treatments to help reduce the intensity of labor pain. Many alternative treatments are used by women to reduce pain during labor, including acupuncture, mind-body techniques, massage, reflexology, herbal or homeopathic medicines, hypnosis, music and aromatherapy (Smith et al., 2018).

Prenatal yoga can reduce complaints of lower back pain during pregnancy and prenatal yoga is also relatively safe during pregnancy (Holden et al., 2019). Adequate health services and good community support will prevent work-related psychological trauma and improve maternal health. There are several interventions that can be done to minimize it, including: pain management measures, empathy, adequate care and prenatal preparation (Chen et al., 2020).

Yoga can produce behavioral changes that affect pain. Reduce social isolation and to encourage social networks that reinforce improvements in activity. The duration of daily yoga practice is related in pain relief as well as the next day's improvement in pain, fatigue, refreshment, acceptance, and relaxation. Community service has shown that yoga can produce psychological changes, such as increased mental awareness and physical states that can help patients better understand their pain. Yoga has also been shown to increase the frequency of positive emotions which have the potential to cancel out the physiological effects of negative emotions, expand cognitive processes to provide a broader perspective on a problem, and build a physical sense of well-being, good social relationships and a sense of optimism. Yoga may also increase pain acceptance, that is, the willingness to experience pain and to acknowledge negative thoughts and emotions, while remaining committed to pursuing worthy goals. (Wren et al. 2011) Practicing yoga regularly increases strength and extensibility, and improves muscle health, breathing, blood circulation, balance and range of motion when pregnant women's muscles are toned (Sun et al. 2020).

Yoga for pain control. The first component of yoga practice, yoga Asana, is designed as a sequence of body postures as a sequence of physical body activity levels. For pregnant women, yoga asanas can increase physical strength, maintain and increase flexibility, and increase endurance and energy. Additionally, the practice of asanas influences the secretion of hormones from the endocrine glands as a

result of changes in body posture. Each set of body postures assumed, during the exercise, creates awareness of the body and its functions. During the rest periods between each pose, the mind becomes stabilized so that it is able to differentiate between a state of relaxation or calm, and a state of tension or stress. This technique teaches body awareness by identifying areas of tension and imbalance, and increases a person's flexibility and ability to relax from the discomfort of pregnancy and birth.

This is in accordance with the results of community service, where parturient mothers who received Prenatal Yoga treatment had a pain intensity of 4.9, where the measurement scale taken was on a scale of 0-10. Community service believe that there are benefits of Prenatal Yoga on the intensity of pain during labor.

### **The Influence of Yoga during Pregnancy on the Intensity of Labor Pain in the First Stage of Primigravida in PMB Midwife Yeti, Cianjur Regency**

Based on the community service results, it shows that the labor pain scale for mothers giving birth with a mean of 7.26 has decreased to 2.00, which means the pain scale has decreased by 5.26. From the results of the dependent t test, there is an influence with p value ( $0.000 < 0.05$ ). This concludes that  $H_0$  failed to be rejected or  $H_a$  was accepted, so it can be concluded that statistically there was an influence of yoga during pregnancy on the intensity of labor pain in the first stage of labor in primigravidas at PMB Midwives Yeti, Cianjur Regency.

Care is needed in handling pain during labor, because this can affect the mother's mental health after giving birth, and can have an impact on postpartum depression (Smith et al., 2018).

Pain during the labor process, especially during the first active phase, can increase anxiety and discomfort in the mother, so pregnant women need to be taught how to control breathing properly so that the oxygen supply in the mother's body increases, which is indicated by the mother becoming more comfortable and relaxed. This technique needs to be learned by mothers during pregnancy, so that it can be applied during childbirth, one of which is through abdominal breathing techniques in prenatal yoga (Cartwright et al., 2020).

This is in accordance with the results of community service where there is an influence between Prenatal Yoga and the intensity of pain during childbirth. Prenatal yoga can provide a feeling of relaxation for the mother, so that the mother in labor is able to go through the toughest period in her life, namely fighting for the birth of her child with feelings of happiness and without an impact on her mental health.

Fatmawati's community service (2017) showed that the results of the Mann Whitney U test in SPSS showed a p value  $< 0.05$ , so this shows that there is a difference in the progress of labor in primigravid mothers between those who were treated with yoga exercises and those who did not do yoga exercises. Next, to find out how much influence yoga exercises have on the progress of labor during the first active phase of primigravida mothers, a linear regression test was carried out and the R value was obtained  $R=0.383$ , which means yoga exercises have an influence of 38.3% on the progress of labor during the first active phase of primigravida mothers and obtained an r value of 0.619 which shows that the variables have moderate correlation strength. The direction of correlation shows a positive value, namely in the same direction, which means that the greater the value of one variable, the greater the value of the other variable.

In 2018 community service on the effect of yoga on smooth childbirth was conducted by Pujianti et al. (2018) who took Land's (2006) theory which states that yoga is one of the sports that can be done by pregnant women. Yoga exercises during pregnancy can help balance the body, mind and spirit. Maternal psychology during labor is related to feelings of anxiety, stress and fear. This is a problem often experienced by mothers in labor, especially during the first and second stages of labor.

## CONCLUSION

Based on the community service results, it can be concluded that yoga during pregnancy influences the intensity of labor pain in the first stage of labor in primigravida, especially in PMB in the service area, namely PMB Midwife Yeti, Cianjur Regency. In the future, it is recommended that the coverage area be expanded further to further strengthen that yoga can reduce the intensity of pain in the first stage of labor in primigravida and can disseminate this knowledge to the public.

## ACKNOWLEDGMENTS

As the implementation of this community service was carried out properly thanks to assistance from various parties, on this occasion the author would like to thank the community and PMB Midwife Yeti of Cianjur Regency and Mrs. Titin Eka Sugiatini, S.KM. M. Kes. who has helped the author during community service activities that lead to community service.

## REFERENCES

- A. A. A. Hidayat. Pengantar Buku Keperawatan Anak (2nd ed; Dr.Dripta Sjabana, ed.) (Dr.Dripta S., 2018).
- A. Dewie and M. J. Kaparang. Efektivitas Deep Back Massage dan Massage Endorphin terhadap Intensitas Nyeri Kala I Fase Aktif di BPM Setia. Poltekita . Jurnal Ilmu Kesehatan, 14(1), pp. 43–49 (2020). <https://doi.org/10.33860/jik.v14i1.85>.
- C. A. Pamungkas. Pengantar dan Implementasi Basis Data. (Dinas Perpustakaan dan Arsip, Daerah DIY, 2017).
- C. Mutiah, L. Lismawati, I. Putri, D. Dewita, and A. Abdurrahman. Pengaruh Pendamping Persalinan terhadap Penurunan Intensitas Nyeri pada Ibu Primigravida. Jurnal Kebidanan, 12(1), pp. 16–25 (2022). <https://doi.org/10.35874/jib.v12i1.1012>.
- D. Ratnawati, S. Ayu, and M. Adyani. Efektifitas Kombinasi Terapi Foot Spa dan Bueger' S Allen Exercise Terhadap Nilai Ankle Index pada Lansia Dengan Diabetes Mellitus. (Jurnal JKFT, 5(1), pp. 1–15 (2020).
- F. Azkiya and F. F. Filda. Efektifitas Pemberian Massage Counter Pressure dan Aromaterapi Lavender terhadap Tingkat Nyeri pada Kala I Fase Aktif Persalinan Normal di PMB Filda Fairuza. Jurnal Ilmiah Kesehatan Delima, 5(2), pp. 69–74 (2023).
- F. Wulandari. Pengaruh Masase Punggung Terhadap Intensitas Nyeri Persalinan Kala I Fase Aktif Di Klinik Pratama Delima Belawan Tahun 2018 (Institut Kesehatan Helvetia, Medan, 2018). [http://repository.helvetia.ac.id/794/%0Ahttp://repository.helvetia.ac.id/794/10/BAB I-III.pdf](http://repository.helvetia.ac.id/794/%0Ahttp://repository.helvetia.ac.id/794/10/BAB%20I-III.pdf).
- Hidayatulloh, A. ikhsan, E. O. Limbong, and K. I. Ibrahim. Pengalaman dan Managemen Nyeri Pasien Pasca Operasi. Jurnal Ilmu Keperawatan Dan Kebidanan, 11(2), pp. 187 (2020).
- Nursalam. Manajemen keperawatan: Aplikasi dalam Praktik Keperawatan Profesional. In A. Suslia (Ed.), Book (Edisi 4). (Salemba Medika, 2018).
- P. Mayestika and M. H. Hasmira. Artikel Penelitian. Jurnal Perspektif, 4(4), pp. 519, (2021). <https://doi.org/10.24036/perspektif.v4i4.466>.
- P. Z. Gamayanti, P. Z. Pengaruh Hypnobirthing Terhadap Tingkat Rasa Nyeri Ibu Bersalin. Jurnal Ilmu Kesehatan 22 (2022).
- R. M. Hanifah, D. Nurdianti, and A. Kurniawati. Penerapan Kompres Hangat Untuk Mengurangi Nyeri Punggung Pada Ibu Hamil Trimester Iii Fisiologis. Jurnal BIMTAS: Jurnal Kebidanan Umtas, 6(2), pp. 79–85 (2022). <https://doi.org/10.35568/bimtas.v6i2.2918>.
- S. D. Isnaeni. Aplikasi Senam Hamil Terhadap Nyeri Punggung Pada Ibu Hamil Trimester III Di Wilayah Kerja Puskesmas Cianjur Kota. (Politeknik Kesehatan, Tanjung Karang, 2021).
- S. Notoatmodjo. Metodologi Penelitian Kesehatan. (Perpustakaan Universitas Pendidikan Ganesha, 2018).

- Sugiyono. Metode Penelitian Kuantitatif, Kualitatif, dan RandD. CV. Alfabeta (2019).
- Suyanto. Pengaruh Terapi Spa Dan Senam Kaki Diabetik pada Pasien Neuropati Perifer Diabeteik. Jurnal Keperawatan Dan Pemikiran, 3(4), pp. 29–37 (2017). <http://jurnal.unissula.ac.id/index.php/jnm/article/download/2276/1715>
- T. Solehati. Terapi Nonfarmakologi Nyeri Padapersalinan: Systematic Review. Jurnal Keperawatan Muhammadiyah, 3(1) (2018). <https://doi.org/10.30651/jkm.v3i1.1568>.