Journal of Midwifery and Nursing, 6 (1) (2024) pp. 339-344

Published by: IOCSCIENCE

Journal of Midwifery and Nursing

Journal homepage: www.iocscience.org/ejournal/index.php/JMN

The effect of yoga exercises on back pain in third trimester pregnant women at the Bunda Tessa Pratama Clinic

Rhina Chairani Lubis[1], Pebrina Wanti br Saragih[2]

[12]Bachelor Deegree, Program Studi Kebidanan, Sekolah Tinggi Ilmu Kesehatan Indah Medan, 20226, Indonesia

ARTICLE INFO

Article history:

Received Jan 23, 2024
Revised Jan 27, 2023
Accepted Jan 30, 2023

Keywords:

Antenatal yoga;
Back pain during pregnancy;
Pregnant women in the third trimester;
Quasi-experimental design.

ABSTRACT

One of the physical changes experienced by TM III pregnant women is the increasingly lordotic shape of the back which results in TM III pregnant women experiencing back pain and if not handled properly it can affect the condition of the mother and fetus, causing complications. Yoga exercise is one option to reduce back pain in pregnant women. The aim of this study was to determine the effect of yoga exercises on back pain in pregnant women in the third trimester at the Bunda Tessa Clinic. This type of research is a quasi experiment because it measures changes in the level of maternal complaints in the third trimester after carrying out a certain action, namely antenatal yoga. This research was conducted by examining maternal complaints before (pretest) and after (posttest) antenatal yoga. Based on the results of research and discussion of research on the assessment of back pain before and after doing yoga exercises for pregnant women in the third trimester at the Pratama Bunda Tessa Clinic, with the results of statistical test calculations obtained a p value of 0.000 < 0.05, it can also be concluded that there is an effect of yoga exercises on pain. back of pregnant women in the third trimester at the Bunda Tessa Clinic.

Corresponding Author:

Rhina Chairani lubis,
Bachelor Degree,
Sekolah Tinggi Ilmu Kesehatan Indah Medan,
Jl. Saudara Ujung No. 110, Sudirejo II, Kec. Medan Kota, Kota Medan, Sumatera Utara, 20226, Indonesia.
Email: rhinachairani19@gmail.com

1. Introduction

The period of pregnancy is a unique thing in life that is related to hormonal and physiological changes in a woman (Clark et al., 2009; Kajantie & Phillips, 2006). In each semester there are changes that occur due to hormonal imbalances in the body of pregnant women since the pregnancy process occurs. Psychological disorders that occur can have a negative effect on fetal development and result in prolonged stress which can have the effect of hampering fetal development, including emotional disorders after birth, if not handled properly (Lautarescu et al., 2020; Purnamasari, 2019; Traylor et al., 2020).

There are changes in physiological and psychological adaptation during normal pregnancy, almost all organ systems experience anatomical and functional changes, including the reproductive system, breast, endocrine system, urinary, digestive, musculoskeletal, cardiovascular, integumentary and metabolic changes, (Branco et al., 2022; Murray & Hendley, 2020; Susanto & Fitriana, 2019). As a result of changes in physiological and psychological adaptation, discomfort arises during pregnancy. One of the discomforts that often arises is back pain.

Back pain is common in pregnancy with reported incidence varying from approximately 50% in the UK and Scandinavia to nearly 70% in Australia. Mantle reported that 16% of women studied complained of severe back pain and 36% in the study by Ostgaard et al in 1991, (Azizah & Rosyidah, 2019).

The results of limited epidemiological research conducted by Mayer, quoted by Yosefa, Febriana ea all (2014), stated that back pain during pregnancy reaches its peak in the 24th to 28th weeks, just before abdominal growth reaches its maximum point. Back pain is often made worse by backache or what is often called "old back pain", (Yosefa et al., 2020).

Back pain during pregnancy varies around 35-60%. Among all pregnant women, it turns out that 47-60% report that back pain occurs at 5-7 months of pregnancy, (Triyana, 2013). The prevalence of spinal pain in pregnant women is more than 50% in the United States, Canada, Turkey and Korea. The incidence rate of third trimester pregnant women experiencing anxiety in Central Java was 52.3%. The consequences of this anxiety can have an impact on the mother and fetus, the mother will become irritable and give birth for a long time, the baby will result in LBW, premature birth and autism, (Maryunani, 2017).

47-60% of women complain of back pain during 5-7 months of pregnancy, and the symptoms complained of will be more severe at night and in the third trimester of pregnancy, (Richens et al., 2010). In general, back pain in pregnant women is influenced by changes in body posture during pregnancy, this is in line with the gradual increase in body weight, hormonal influences on the ligament structure and the body's center of gravity shifting forward and activities during pregnancy can cause back pain, if not treated immediately it can cause long-term back pain.

Research conducted by Katonis et al, 2011. Back pain will cause poor quality sleep for pregnant women. 80% of pregnant women who suffer from back pain say that back pain affects their daily routine and 10% of them are unable to work.

Currently, there is a lot of pain management for pregnant women's back pain which is applied pharmacologically and non-pharmacologically. If possible, non-pharmacological therapy options should be considered before using pharmacological therapy, although most of them are more effective in reducing pain in pregnancy, apart from being expensive, they also have the potential to have side effects for the mother and baby, (Maryunani, 2017). Non-pharmacological pain management is currently being developed to reduce back pain during pregnancy because it has the advantage of being safer, simpler and does not cause detrimental effects and refers to the mother's loving care, compared to pharmacological methods which have the potential to have detrimental effects.

In the third trimester of pregnancy, there are several simple non-pharmacological methods that midwives can provide to help reduce back pain, including back massage, good posture, swimming, acupuncture, hot baths using a support belt, gymnastics and yoga, (Richens et al., 2010).

Yoga exercises are part of non-pharmacological therapy that can reduce pain. Yoga exercise is a practical effort to harmonize the body, mind and soul, where the benefits of yoga are to form a straight body posture, as well as develop flexible and strong muscles, purify the central nerves in the spine. Yoga exercises carried out in the third trimester of pregnancy can reduce complaints felt by pregnant women during the third trimester. One of them is back pain, (Bushnell et al., 2021; Purnamasari, 2019; Qureshi et al., 2021).

Yoga exercise (yoga during pregnancy) is a type of modification and yoga practice that is adapted to the condition of pregnant women. The aim of yoga exercises is to prepare pregnant women physically, mentally and spiritually for the birthing process. Pregnancy is a natural process, where changes occur in women during pregnancy that are normal and physiological in nature. In the third trimester, there are several complaints that cause discomfort to pregnant women during pregnancy, one of which is back pain. Back pain usually increases in intensity as pregnancy advances, (Maryati et al., 2022; Pratignyo, 2014; Srinayanti et al., 2023).

The results of the initial survey conducted by researchers on February 12 2021, at the Bunda Tessa Primary Clinic in 2021, third trimester pregnant women who came to have their pregnancies checked at the clinic, complained of experiencing pain in their backs and there were several pregnant women who were unable to carry out activities because they felt pain in their backs area.

2. Methods

This experimental research was conducted using a quasi-experimental method, consisting of a control group design with pre- and post-intervention tests (Gopalan et al., 2020; Maciejewski, 2020). A total of 30 third trimester pregnant women were divided equally into 2 groups, with 15 pregnant women in the treatment group and 15 pregnant women in the control group. The treatment group received conventional exercise and yoga 2 times a week for 4 weeks. Meanwhile, the control group received pregnancy exercise treatment 2 times a week for 4 weeks.

Then it is analyzed using bivariate analysis to see the relationship between the independent variable and the dependent variable, whether these variables have a significant relationship or just a random relationship. This analysis was carried out using the paried test, namely a confidence level of 95% (α=0.05).

3. Results and Discussion

3.1 The results of the univariate analysis in this study are as follows:

Characteristics of respondents based on age, type of work, and number of parities

Table 1.
Respondent Characteristics

Variable	N (Responden)	Percentage (%)
Age		
< 20 years	3	4,0
20 – 35 years	21	70,0
> 35 years	6	20,0
Pekerjaan		
Private employees	7	23,3
government employees	2	6,7
Wiraswasta	9	30,0
Not work	12	40,0
Paritas :		
Primipara	5	16,7
Multipara	18	60,0
Grandepara	7	23,3

Table 1 shows that the majority of respondents in the study were aged 20-35 years, namely 21 respondents (70.0%). Based on the employment status of respondents in the research, the majority of respondents did not work or were housewives, 12 respondents (40%), and multiparous pregnancies, 18 respondents (60%).

3.2 The results of the bivariate analysis in this study are as follows:

Table 2.
Assessment of Back Pain Before and After Doing Yoga Exercises In third trimester pregnant women

category	Pretest		Posttest	
	n	%	n	%
0 (No Pain)	0	00,0	6	20,0
1 (Mild Pain)	5	16,7	15	50,0
2 (Slightly More Painful)	17	56,7	9	30,0
3 (More Pain)	8	26,7	0	00,0
4 (Very Painful)	0	00,0	0	00,0
5 (Extreme Pain)	0	00,0	0	00,0

Based on the research results presented in Table 2, it can be seen that back pain before doing yoga exercises among pregnant women in the third trimester at the Bunda Tessa Pratama Clinic in 2021 with a

total of 30 respondents, on average pregnant women in the third trimester experienced back pain with a pain scale of Category 2 (slightly more painful) with 17 respondents (56.7%). 15 respondents (50.0%) experienced back pain on a scale of 1 (mild pain).

It can also be seen that back pain after doing yoga exercises in third trimester pregnant women at the Bunda Tessa Pratama Clinic with a total of 30 respondents, on average third trimester pregnant women experience back pain on a scale of 1 (Mild Pain) with a total of 15 respondents (50.0 %).

3.3 The Effect of Yoga Exercises on the Back Pain of Pregnant Women in the Third Trimester Before and After Doing Yoga Exercises

Based on the results of research conducted before and after yoga exercises were carried out on pregnant women in the third trimester at the Bunda Tessa Pratama Clinic with a total of 30 respondents and the results of statistical test calculations obtained a p value of 0.000 < 0.05, it can be concluded that "Ha is accepted" meaning there is a difference back pain level scale for before and after doing yoga exercises, so it can also be concluded that there is an influence of yoga exercises on back pain in pregnant women in the third trimester at the Bunda Tessa Clinic in 2021.

According to research by Dewi (2016), which is an experimental study on yoga exercises, the results obtained by testing the effect of yoga treatment between before the intervention obtained a mean ± SD of 4.14 ± 1.127 with p = 0.000, while after the intervention the mean ± SD was 2.71 ± 1.204 with a value of p0.000 (p<0.05), (Dewi et al., 2016). This means that there is a significant influence between pain intensity before and after yoga, where yoga exercises can reduce back pain in pregnant women.

Yoga exercises or also called Prenatal yoga is a modification of classical yoga which has been adapted to the physical condition of pregnant women and is carried out with a gentler and slower intensity, (Adnyani, 2021). The aim of prenatal yoga exercises is to prepare pregnant women physically, mentally and spiritually for the birthing process. With good preparation, pregnant women will be confident in having a comfortable and smooth delivery later. Yoga exercises start with breath awareness, full awareness (neck warming) and the final movement, namely the core movements of yoga exercises.

According to Dr. Vivek Narendran from Ciccinnati Children's Hospitality Medical Center in Ohio, United States, said yoga practice can help improve blood flow to the placenta, reduce the transfer of maternal stress hormones to the fetus's body, reduce the release of hormones that trigger birth, thereby reducing the possibility of premature birth. Prenatal yoga has five methods, namely physical exercise, yoga, breathing (pranayama), positions (mudra), meditation, and deep relaxation which can be used to get benefits during pregnancy so that it can help smooth pregnancy and birth naturally and help ensure a healthy baby, (Wagiyo & Putrono, 2016).

According to researchers, there is an influence of the name yoga on reducing back pain in third trimester pregnant women before and after doing yoga exercises, namely from scale 2 (more painful) to scale category 1 (mild pain), because it can help pregnant women reduce complaints and pain. during pregnancy, especially back pain. By doing it 3 times a week with a duration of 45 minutes-1 hour, pregnant women can feel the benefits of yoga exercises. Another thing that can be done in senm yoga is to tell the mother to wear loose clothing when doing yoga exercises, do yoga exercises without shoes, the stomach is not hungry or full, and consume lots of water.

4. Conclusion

The results of the research show that giving yoga can reduce the intensity of back pain in pregnant women with an average difference in pain intensity of 1.43 and based on the t test, it shows significance with a p value (0.000) < α (0.05). This means that yoga has an influence on reducing the intensity of lower back pain in third trimester pregnant women. In future research development, it is essential to delve deeper into the long-term effects of antenatal yoga on various aspects of maternal and fetal well-being beyond back pain reduction in the third trimester. A comprehensive investigation could explore the impact of yoga exercises on overall physical health, mental well-being, and childbirth outcomes. Additionally, examining the adherence and compliance of pregnant women to the yoga program, as well as assessing potential variations in results based on individual differences, would provide a more nuanced

understanding. Integrating qualitative methods, such as interviews or surveys, could capture the subjective experiences and perceptions of pregnant women participating in antenatal yoga. This holistic approach will contribute valuable insights to guide the development of evidence-based interventions aimed at enhancing the overall health and satisfaction of pregnant women throughout the prenatal period.

References

Adnyani, K. D. W. (2021). Prenatal Yoga Untuk Kondisi Kesehatan Ibu Hamil. *Jurnal Yoga Dan Kesehatan*, *4*(1), 35. https://doi.org/10.25078/jyk.v4i1.2067

Azizah, N., & Rosyidah, R. (2019). Buku Ajar Mata Kuliah Asuhan Kebidanan NIfas dan Menyusui. In *Sidoarjo*. Umsida Press.

Branco, M., Santos-Rocha, R., Aguiar, L., Vieira, F., & Veloso, A. P. (2022). Biomechanical Adaptations of Gait in Pregnancy: Implications for Physical Activity and Exercise. In *Exercise and Physical Activity During Pregnancy and Postpartum: Evidence-Based Guidelines* (pp. 105–153). Springer.

Bushnell, M. C., Frangos, E., & Madian, N. (2021). Non-pharmacological treatment of pain: Grand challenge and future opportunities. In *Frontiers in Pain Research* (Vol. 2, p. 696783). Frontiers Media SA.

Clark, A., Skouteris, H., Wertheim, E. H., Paxton, S. J., & Milgrom, J. (2009). My baby body: A qualitative insight into women's body-related experiences and mood during pregnancy and the postpartum. *Journal of Reproductive and Infant Psychology*, *27*(4), 330–345.

Dewi, E. S., Suwondo, A., & Wahyuni, S. (2016). Pengaruh Kombinasi Yoga Kortisol Dan Lama Persalinan. *Jurnal Ilmiah Bidan*, *3*, 7–13.

Gopalan, M., Rosinger, K., & Ahn, J. Bin. (2020). Use of quasi-experimental research designs in education research: Growth, promise, and challenges. *Review of Research in Education*, *44*(1), 218–243.

Kajantie, E., & Phillips, D. I. W. (2006). The effects of sex and hormonal status on the physiological response to acute psychosocial stress. *Psychoneuroendocrinology*, *31*(2), 151–178.

Lautarescu, A., Craig, M. C., & Glover, V. (2020). Prenatal stress: Effects on fetal and child brain development. *International Review of Neurobiology*, *150*, 17–40.

Maciejewski, M. L. (2020). Quasi-experimental design. *Biostatistics & Epidemiology*, *4*(1), 38–47.

Maryati, S., Karwati, K., & Yanti, D. (2022). Pain Reduction Techniques to Overcome Back Pain Complaints in Third Trimester of Pregnancy. *Health Notions*, *6*(10), 432–435.

Maryunani, A. (2017). *Asuhan Ibu Nipas dan Asuhan Ibu Menyusui* (Cetakan II). In Media.

Murray, I., & Hendley, J. (2020). Change and adaptation in pregnancy. *Myles' Textbook for Midwives E-Book*, 197.

Pratignyo, T. (2014). *Yoga Ibu Hamil*. Pustaka Bunda.

Purnamasari, K. D. (2019). Nyeri Punggung Bawah Pada Ibu Hamil Trimester Ii Dan Iii. *Journal of Midwifery and Public Health*, *1*(1), 9. https://doi.org/10.25157/jmph.v1i1.2000

Qureshi, A. R., Jamal, M. K., Rahman, E., Paul, D. A., Oghli, Y. S., Mulaffer, M. T., Qureshi, D., Danish, M. A., & Rana, A. Q. (2021). Non-pharmacological therapies for pain management in Parkinson's disease: A systematic review. *Acta Neurologica Scandinavica*, *144*(2), 115–131.

Richens, Y., Smith, K., & Wright, S. L. (2010). Lower back pain during pregnancy: advice and exercises for women. *British Journal of Midwifery*, *18*(9), 562–566. https://doi.org/10.12968/bjom.2010.18.9.78064

Srinayanti, Y., Anggraeni, S., Litasari, R., & Lismayanti, L. (2023). The Relationship Between Pregnancy Discomfort and Physical Activity of Third Trimester Pregnant Women. *Asy-Syifa: Journal of Science and Technology Nursing*, *1*(2), 51–56.

Susanto, A. V., & Fitriana, Y. (2019). *Asuhan Pada Kehamilan Panduan Lengkap Asuhan Selama Kehamilan Bagi Praktisi Kebidanan* (Cetakan I). Pustaka Baru Press.

Traylor, C. S., Johnson, J. D., Kimmel, M. C., & Manuck, T. A. (2020). Effects of psychological stress on adverse pregnancy outcomes and nonpharmacologic approaches for reduction: an expert review. *American Journal of Obstetrics & Gynecology MFM*, *2*(4), 100229.

Triyana, Y. F. (2013). *Panduan klinis kehamilan dan persalinan* (N. Putri (ed.)). Rapha Publishing.

Wagiyo, & Putrono. (2016). *Asuhan Keperawatan Antenatal, Intranal Bayi Baru Lahir : Fisiologis dan*

Patologis. Andi.
Yosefa, F., Misrawati, & Hasneli, Y. (2020). Efektifitas Senam Hamil Terhadap Penurunan Nyeri punggung pada Ibu Hamil. *Jurnal SMART Kebidanan*, *1*(1), 1–7.