

YOGA EXERCISE REDUCED BACK PAIN LEVEL ON THE THIRD TRIMESTER OF PREGNANCY

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ABSTRAK : LATIHAN YOGA MENGURANGI TINGKAT NYERI PUNGGUNG PADA TRIMESTER KETIGA KEHAMILAN

Latar Belakang : Sekitar 71% dari 33 ibu hamil mengalami nyeri punggung bawah pada trimester III kehamilan, nyeri punggung bawah dapat menyebabkan ketidaknyamanan selama kehamilan sehingga perlu untuk ditangani. Penanganan dapat dilakukan secara farmakologis dan non farmakologis. Salah satu penanganan non farmakologis dapat dilakukan dengan prenatal yoga. (Tyastuti, 2016). Hasil dari penelitian pada ibu hamil di berbagai wilayah Indonesia mencapai 60-80% ibu hamil mengalami nyeri punggung pada kehamilannya (Mafikasari & Kartikasari, 2015). Klinik Bilal Medika merupakan klinik yang mempunyai fasilitas senam yoga, disana terdapat instruktur yang sudah tersertifikasi. Studi pendahuluan di Klinik Bilal Medika Kota Serang dari 15 ibu hamil yang memeriksakan kehamilannya terdapat 11 orang yang mengeluhkan nyeri punggung trimester III. Tujuan : Tujuan penelitian ini adalah diketahuinya pengaruh senam yoga terhadap nyeri punggung kehamilan trimester III.

Metode Penelitian : Menggunakan penelitian quasi eksperimen dengan rancangan *randomized two pretest – posttest group*. Sejumlah 56 ibu hamil trimester 3, secara *total sampling* diberikan exercise yoga selama 1 bulan dilakukan 2x dalam seminggu. Pengukuran rasa nyeri menggunakan instrumen *Numeric Rating Scale* (NRS) dilakukan pada sesi yoga pertama dan sesi yoga ke 8.

Hasil : Hasil penelitian dapat bahwa bahwa ibu hamil dengan nyeri punggung trimester III Pre-Test Senam Yoga dengan skala nyeri ringan sebanyak 10 (17,9%), skala nyeri sedang sebanyak 26 (46,4%), dan skala nyeri berat sebanyak 20 (35,7%), sedangkan Post-Test Senam Yoga dengan skala nyeri ringan sebanyak 20 (35,7%), skala nyeri sedang sebanyak 23 (41,1%), dan skala nyeri berat sebanyak 13 (23,3%).

Kesimpulan : Sehingga dapat disimpulkan bahwa terdapat perbedaan senam yoga kelas kontrol dan kelas eksperimen pada nyeri punggung pada ibu hamil trimester III. Yoga dapat mengurangi nyeri punggung pada ibu hamil trimester III.

Saran : Klinik bersama dengan institusi pendidikan dapat menyelenggarakan kegiatan-kegiatan penyuluhan untuk meningkatkan pengetahuan tentang senam yoga yang dapat mengurangi nyeri punggung pada ibu hamil trimester III.

Kata kunci : Nyeri Punggung TM III, Senam Yoga

ABSTRACT

Backgrond : Around 71% of 33 pregnant women experience low back pain in the third trimester of pregnancy, low back pain can cause discomfort during pregnancy so it needs to be treated. Handling can be done pharmacologically and non-pharmacologically. One of the non-pharmacological treatments can be done with prenatal yoga. (Tyastuti, 2016). The results of research on pregnant women in various parts of Indonesia reach 60-80% of pregnant women experiencing back pain during pregnancy (Mafikasari & Kartikasari, 2015). Bilal Medika Clinic is a clinic that has yoga facilities, where there are certified instructors. A preliminary study at the Bilal Medika Clinic, Serang City, of 15 pregnant women who had their pregnancy checked, 11 people complained of back pain in the third trimester.

Purpose : The purpose of this study was to determine the effect of yoga exercise on back pain in the third trimester of pregnancy.

Method : This study used a quasi-experimental study with a randomized two pretest – posttest group design. As many as 56 pregnant mother were given Yoga exercise in a month for 2x in a week. Pain measurement using the Numeric Rating Scale (NRS) instrument were done in the 1st session of Yoga exercise and and the 8th session.

Result : The results showed that pregnant women with back pain in the third trimester of Yoga Gymnastics Pre-Test with a mild pain scale of 10 (17.9%), a moderate pain scale of 26 (46.4%), and a severe pain scale of 20

(35.7%), while the Post-Test Yoga Exercise with a mild pain scale of 20 (35.7%), a moderate pain scale of 23 (41.1%), and a severe pain scale of 13 (23.3%).

Conclusion : So it can be concluded that there are differences in yoga exercise in the control class and the experimental class on back pain in third trimester pregnant women. Yoga Exercises can reduce back pain in third trimester pregnant women.

Suggestion : Clinics can collaborate with educational institutions to organize various counseling for pregnant to increase knowledge about yoga exercises that can reduce back pain in third trimester pregnant women.

Key words : Low back pain ,TM III,Yoga exercise

INTRODUCTION

Low back pain occurs in many pregnant women and affects the comfort of pregnant women (Rejeki, 2020). According to research (Chang et al., 2013), about 71% of 33 pregnant women experience low back pain in the third trimester of pregnancy. Low back pain can cause discomfort during pregnancy so it needs to be treated. Handling can be done pharmacologically and non-pharmacologically (Brucker et al., 2019). One of the non-pharmacological treatments for low back pain during pregnancy can be done with prenatal yoga (Andarmoyo & Suharti, 2013).

(S Tyastuti & HP Wayuningsih, 2016) and (Husin, 2014) argued that Prenatal yoga is a safe and effective exercise to help pregnant women to reduce anxiety complaints and improve spinal function so as to reduce back pain. The muscles around the pelvis will be made stronger and more elastic so that blood circulation becomes smooth, thereby reducing pelvic and back pain during pregnancy and facilitating the delivery process (Li, 2022).

Based on the results of research in Brazil, 68% of 97 pregnant women experience low back pain and 43.9% starting from the second trimester (Emilia Carvalho MECC et al., 2017). The incidence of back pain during pregnancy is 48-90%. As many as 50% of pregnant women surveyed in the UK and Scandinavia reported suffering from back pain, in Australia as many as 70% (Kumar et al., 2017)

Yoga exercise is part of non-pharmacological therapy that can reduce back pain in the third trimester of pregnancy (Sindhu, 2014). Yoga exercise is a practical effort to harmonize the body, mind, and spirit, in which the benefits of yoga are to form a firm posture, and to build flexible and strong muscles, purifying the central nervous system in the spine. Yoga exercise carried out in the third trimester of pregnancy can reduce the complaints felt by pregnant women during the third trimester, one of which is back pain (Devi M et al., 2014).

Different to the previous research that measured the beneficial of Prenatal Yoga exercise, the general objective of this current research was to

determine the effect of yoga exercise on back pain during the third trimester of pregnancy. Meanwhile, the specific objective is to know about back pain during the third trimester of pregnancy before yoga, to know about back pain during the third trimester after yoga, and to know the difference between back pain in the third trimester of pregnancy before and after yoga.

RESEARCH METHODS

The research design used in this research is an analytic survey, namely analyzing the dynamics of the correlation between phenomena or between risk factors and effect factors, this study uses a quasi-experimental research design with a randomized pretest posttest control group design (Gray, 2014). This study uses a quasi-experimental study with a *randomized two pretest – posttest group design*. The characteristic of this type is to reveal a causal relationship by involving a group of subjects (Taherdoost, 2016). The subject group was observed before the intervention, then observed again after the intervention. This research was conducted at the Bilal Medika in Serang City. The population in this study were all pregnant women in the third trimester at the Bilal Medika clinic, Serang city, as many as 56 pregnant women in the third trimester. The sampling technique uses the *Total Sampling technique*, which is a technique carried out by determining the entire population to be the entire sample.

Namely 5-6 pregnant women in the third trimester, with 28 pregnant women as controls and 26 pregnant women given the experiment of given prenatal yoga exercise for twice a week in a month. Pain measurement using the Numeric Rating Scale (NRS) instrument were done in the 1st session and and the last session (8th session) of Yoga.

RESEARCH RESULT

The results of the research carried out aimed to determine the frequency distribution (percentage) and the relationship of the independent variable

which is yoga exercise and the dependent variable, namely Back Pain Pregnant Women TM III.

Univariate Results

Table 1
Frequency Distribution of Back Pain TM III Pre-Test Yoga Gymnastics at Bilal Medika Clinic Serang City in 2022

Scale Painful	Amount	Presentation (%)
Mild Pain	10	17.9
Moderate Pain	26	46.4
Severe Pain	20	35.7

Based on table 1, it shows that pregnant women with back pain in the third trimester of Yoga Exercise Pre-Test with a mild pain scale of 10 (17.9%), a moderate pain scale of 26 (46.4%), and a severe pain scale of 20 (35.7%).

Table 2
Frequency Distribution of Back Pain TM III Post-Test Yoga Gymnastics at Bilal Medika Clinic Serang City in 2022

Scale Painful	Amount	Presentation (%)
Mild Pain	20	35.7
Moderate Pain	23	41.1
Severe Pain	13	23.2

Based on table 2, it shows that pregnant women with back pain in the third trimester of Post-Test Yoga with a moderate pain scale of 23 (41.1%).

Bivariate Results

Table 3
Pre-Test and Post-Test Normality Test

Experiment and Control Class

	Class	Kolmogorov Smirnov Std. Deviation	Sig.
Pre Test	Control	0.71486989	0.117
	Experiment		
Post Test	Control	0.71486989	0.117
	Experiment		

Based on table 3 the output of the normality of variance test with the Kolmogorov Smirnov Pre-Test and Post-Test tests, the Standard Deviation of the data is 0.71486989 and the Sign is 0.117, so the probability of the data > 0.05 , it can be concluded that the Pre-test and Post-Test control class and the experiment is normally distributed.

Table 4
Pre-Test and Post-Test Homogeneity Test Experiment and Control Class

	Class	Levene Statistics	Sig.
Pre Test	Control	0.000	1,000
	Experiment	0.000	1,000
Post Test	Control	0.101	0.752
	Experiment	0.010	0.922

Based on table 4 the homogeneity of variance test using Levene's statistic test on the Pre-test and Post-Test probability on the significance column of Pre-Test Control (1,000) and Pre-Test Experiment (1,000) as well as on the significance column of Post-Test Control (0.752) and Post-Test Experiment (0.922), because the significance probability value is > 0.05 , it can be concluded that the control and experimental classes have the same variance or are homogeneous.

Table 5
Differences in the Effectiveness of Yoga Exercises with Back Pain in Third Trimester Pregnant Women at
Bilal Medika Clinic Serang City in 2022

Levene's test for Equality of Variances				t-test for Equality of Means				
F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of tge Difference	
,0003	,959	2.778	54	,007	,536	,193	,149	,922
		2.778	53.488	,008	,536	,193	,149	,922

The results of the Independent T Test statistical test where to find out whether there is a difference between yoga exercise in the control class and the experimental class on back pain in third trimester pregnant women, where in Table 5 there is a significance of 0.007 because the significance probability value is <0.05 , it can be concluded that the control and experimental classes have a significant difference.

DISCUSSION

The impact of back pain during pregnancy is that the mother will experience sleep disturbances that cause fatigue and irritability and discomfort in carrying out activities (Mota et al., 2014). This will cause the fetus to become fetal distress where the mother's condition is closely related to the condition of the fetus in her womb, inhibiting mobility, those who already have children will hinder caring for the child. In addition, pain can affect the mother's work and if her work cannot be adjusted, she may have to take leave give birth sooner than expected (Chuntharapat & Hatthakit, 2008).

There are several ways to take preventive measures during pregnancy so that the mother and fetus are in a healthy condition and later a normal delivery process will occur, namely morning walking, static cycling, aerobics, water exercise, dancing, and yoga. Pregnancy exercise has several exercise methods including yoga, pilates, kegels, *hypnotherapy* (Rosieana et al., 2019).

The results of the Independent T Test statistical test where to find out whether there is a difference between yoga exercise in the control class and the experimental class on back pain in third trimester pregnant women, where in Table 5 there is a significance of 0.007 because the significance probability value is <0.05 , it can be concluded that

the control and experimental classes have a significant difference. The The results of this study are in line with research conducted by (Yulianti et al., 2018) that by doing yoga regularly can affect back pain during pregnancy. Back pain in pregnancy is back pain that occurs in the lumbosacral area. Back pain will usually increase in intensity with increasing gestational age because this pain is a result of a shift in the center of gravity and body posture (Richens et al., 2010).

Research conducted by (Riawati et al., 2021) on the effect of antenatal yoga on reducing complaints of pregnant women in the third trimester with antenatal yoga treatment 4 times in third trimester pregnant women who did not experience complications, no history of premature labor and fetal growth according to gestational age. The results showed that the average complaint of pregnant women on measurements before antenatal yoga was 12.78 and after 12.19 with a p value of 0.005 which means there is a significant difference between complaints of pregnant women before and after antenatal yoga.

(Widiastini & Karuniadi, 2020) stated that yoga practice can help increase blood flow to the placenta, reduce the transfer of maternal stress hormones to the fetus, reduce the release of hormones that trigger birth, thereby reducing the chance of premature birth. Prenatal yoga has five ways, namely physical yoga practice, breathing (pranayama), position (mudra), meditation, and deep relaxation that can be used to get benefits during pregnancy so that it can help smooth pregnancy and birth naturally and help ensure a healthy baby (Singh et al., 2020). The elements in yoga that are said to help reduce anxiety are the relaxation and meditation sections. Yoga during pregnancy can help women focus on labor, prepare to tolerate pain, and turn

stress and anxiety into energy (Rosieana et al., 2019).

(Aprilia, 2014) stated that yoga in pregnancy is beneficial in maintaining emotional and physical health. When a pregnant woman does exercise regularly 3 times every week for 10 weeks of pregnancy, it can maintain the elasticity and strength of the pelvic ligaments, hips and leg muscles, thereby reducing pain that occurs during labor and providing space for the birth canal, increasing maternal comfort at birth and reduces the risk of prolonged labor (Kulkarni et al., 2022).

CONCLUSION

The conclusion in this study is that there is an effect of yoga exercise on reducing back pain in third trimester pregnancy at the Billal Medika Clinic, Serang City in 2022, 5 there is a significance of 0.007 because the probability value of significance is <0.05 , so it can be concluded that the control and experimental classes have significant differences. Clinics can collaborate with educational institutions to improve preventive measures including primary prevention by various ways of counseling knowledge about Yoga Exercises that can reduce back pain in third trimester pregnant women.

REFERENCES

- Andarmoyo, S., & Suharti. (2013). *Labor Without Excessive Pain*. Ar-Ruzz Media.
- Aprilia, Y. (2014). *Gentle birth balance : Persalinan holistik mind, body, and soul*. OPAC Perpustakaan Nasional RI. <https://opac.perpusnas.go.id/DetailOpac.aspx?id=884222#>
- Brucker, M., C. Jevitt, C., King, T. L. , & Osborne, K. (2019). *Varney's Midwifery: Vol. 6th Edition*.
- Chang, H.-Y. (2013)., Lai, Y.-H., Jensen, M., Shun, S.-C., Hsiao, F.-H., Lee, C.-N., & Yang, Y.-Ling. (2013). Factors associated with low back pain changes during the third trimester of pregnancy. *Journal of Advanced Nursing*.
- Chuntharapat, S., & Hatthakit, U. (2008). Yoga during pregnancy: Effects on maternal comfort, labor pain and birth outcomes. *Complementary Therapies in Clinical Practice*, 14, 105–150.
- Devi M, Sulaiman, Rosnani, & Jawiah. (2014). The Influence of Antenatal Yoga on Reducing Complaints of Third Trimester Pregnant Women. . *Journal of Medicine and Health*, 1;47-53(1), 47–53.
- Emilia Carvalho MECC, Lima LC, de Lira Terceiro CA, Pinto DRL, Silva MN, Cozer GA, & Couceiro TCM. (2017). Low back pain during pregnancy. *Portuguese*, 67(3), 266–270.
- Gray, D. E. (2014). Designing descriptive and analytical surveys. In *Doing Research in the Real World* (3rd ed.).
- Husin, F. (2014). *Asuhan Kehamilan Berbasis Bukti*. Sagung Seto.
- Kulkarni, K., Mishra, R., Mishra, A., & Kotturshetti, I. (2022). *Exploring the Concepts and Benefits of Yoga in Pregnancy: An Overview*. .
- Kumar, K., Chandrakar, R., & Chandrakar, P. (2017). A Study on the Effect of Integrate Yoga on Labor Pain. *International Journal of Yoga & Allied Sciences*, 6, 13–21.
- Li, Q. (2022). The Effects of Yoga Exercise on Pelvic Floor Rehabilitation of Postpartum Women. *Journal of Healthcare Engineering*, 2022, 1–16.
- Mota, M., Cardoso, M., Carvalho, A., Marques, A., Sá-Couto, P., & Demain, S. (2014). Women's experiences of low back pain during pregnancy. . *Journal of Back and Musculoskeletal Rehabilitation*, 28.
- Rejeki, S. (2020). *Buku ajar Manajemen Nyeri Dalam Proses Persalinan (Non Farmaka) i BUKU AJAR MANAJEMEN NYERI DALAM PROSES PERSALINAN (NON FARMAKA)*.
- Riawati, M., Budihastuti, U., & Prasetya, H. (2021). The Effect of Prenatal Yoga on Birth Labor Duration and Pain: A Meta Analysis. *Journal of Maternal and Child Health* , 06(03), 327–337.
- Richens, Y., Smith, K., & Leddington wright, S. (2010). Lower back pain during pregnancy: Advice and exercises for women. . *British Journal of Midwifery*, 18, 562–566.
- Rosieana, G. A., Panggayuh, A., & Mardiyanti, T. (2019). Pengaruh Birthing Ball Terhadap Lama Kala I Fase Aktif Pada Primigravida Di Pmb Yulis Indriana, Malang. *Jurnal Pendidikan Kesehatan*, 8(2), 164–175. <https://doi.org/10.31290/JPK.V8I2.1021>
- S Tyastuti, & HP Wayuningsih. (2016). *Modul Bahan Ajar Cetak Asuhan Kebidanan Kehamilan* (Vol. 5). BPSDM Kemenkes RI.

- Sindhu, P. (2014). *Panduan Lengkap Yoga untuk Hidup Sehat dan Seimbang*. PT Mizan Pustaka.
- Singh, C., REDDY, D. T., & Singh, V. (2020). *Benefit of Yoga Poses for Women during Pregnancy*.
- Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. International. *Journal of Academic Research in Management*, 5, 18–27.
- Widiastini, L., & Karuniadi, I. (2020). The Application of Yoga Pranayama and Gym Ball Exercise on Labor Pain During Active Phase at Pmb Desa Blahkiuh, Abiansemal, Badung. *Journal of a Sustainable Global South*, 4(1).
- Yulianti, I., Respati, S., & Sudiyanto, A. (2018). The Effect of Prenatal Yoga on Anxiety and Depression in Kudus, Central Java. *Journal of Maternal and Child Health*, 3(2), 100–104.