The Effectiveness of Prenatal Yoga on Back Pain in Third Trimester Pregnant Women at the Depok Clinic in 2022

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ARTICLEINFO

Keywords:
TM III pregnant women
Back Pain
Prenatal Yoga

ABSTRACT

Pregnancy is a process that begins with the stage of conception until the birth of the fetus with a normal duration of 40 weeks or 280 days starting from the first day of the last menstruation. With increasing gestational age there are physical changes in the mother so that it can often cause complaints during pregnancy, one of which is back pain. It was found that low back pain in various regions of Indonesia reached 60-80% the incidence of back pain in pregnant women was still high. One of the efforts that can be done to overcome back pain during pregnancy is by doing prenatal yoga. To determine the effectiveness of prenatal yoga on back pain in third trimester pregnant women at the Depok Clinic in 2022. This type of research was a quasi-experimental design with pretest and posttest with control group design. The study was conducted at the Depok Clinic in 2022. The population in this study was 50 pregnant women TM III, the number of samples was 30 people. The sampling technique is purposive sampling. The data used is primary data. Data in univariate and bivariate analysis with Wilcoxon and Mann Whitney test. The data was processed using a computer with the SPSS program. The results of the univariate study showed that the average level of back pain in the control group at the first examination in third trimester pregnant women was 4.40 ± SD 0.828 and the second examination was 4.07 ± SD 0.799. The mean level of back pain in the intervention group before the intervention was 4.60 ± SD 0.828 and after the intervention was 2.07 ± SD 0.799.

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1. Introduction

Pregnancy is a process that begins with the stage of conception until the birth of the fetus with a normal duration of 40 weeks or 280 days starting from the first day of the last menstruation (Widatiningsih & Dewi, 2017). Meanwhile, there is another explanation regarding pregnancy, namely the union or fertilization of the ovum and spermatozoa which is then followed by the process of implantation or nidation. If it is calculated from the time of fertilization until the baby is born, a normal pregnancy runs for 40 weeks (Walyani, 2015).

There are various changes both physically and psychologically in pregnant women, especially in the second and third trimesters. A number of these changes certainly cause discomfort in pregnant women. These changes include increased frequency of urination, insomnia, leg cramps, constipation, dyspnea, varicose veins, non-pitting edema, easy fatigue, gingivitis and epulsion, increased anxiety, Braxton Hicks contractions, and mood changes (Rafika, 2018). The third trimester is the period of pregnancy in the last three months of pregnancy. The adaptation process that occurs during pregnancy often causes discomfort for pregnant women, so it is necessary to do
several things from prevention to treatment. In pregnant women in the third trimester, the discomfort felt among them, namely 70% experiencing back pain, 60% experiencing shortness of breath, 60% experiencing hemorrhoids, 50% experiencing increased frequency of urination, 50% experiencing striae gravidarum, 40% experiencing constipation. 20% had swollen feet, and 10% had leg cramps. From the existing percentage, back pain is one of the things that happens to the majority of pregnant women. Back pain itself can occur during pregnancy to postnatal (Rejeki, S, T., 2019).

The prevalence of back pain during pregnancy is still high in the world, ranging from 48-90%. In Australia, the prevalence of back pain in pregnant women is around 70%, while in the UK and Scandinavia it is reported that the prevalence of back pain in pregnant women is around 50% (WHO, 2011). In Indonesia, the prevalence of pregnant women reaches 5,354,594 people (Kemenkes, 2016). In Indonesia, the prevalence of pregnant women who experience back pain is still high, namely back pain with moderate intensity is felt by 68% of pregnant women and back pain with low intensity is felt by 32% of pregnant women (Sinclair, 2010).

The most common discomfort for pregnant women is back pain. This can happen because the spine experiences a shift or the back muscles are stressed so that the joints are depressed (Fraser, DM, et al., 2009 in Fortune ST 2019). In addition, there are other factors that cause back pain in pregnant women, namely weight gain, changes in body posture, and redistribution of ligaments. According to Yoo et al (2015) Pregnant women can experience back pain due to increased weight and spinal physiology, where there is an increase in spinal curvature at the end of pregnancy and changes in body posture. Physiological changes in the third trimester, one of which occurs in the musculoskeletal system, causes back pain (Chealth and Canoe, 2014; Mochtar, 2002). About 50-72% of pregnant women experience low back pain but this complaint is still considered a common thing in pregnant women (Keskin et al, 2012). More than two thirds of pregnant women experience back pain and nearly one fifth experience low back pain. This pain increases as pregnancy progresses and interferes with daily activities (Pennick and Young, 2007).

There are several things that pregnant women can do to reduce back pain without medication, namely relaxation, hot compresses, yoga exercises, aromatherapy, warm baths, music therapy, changing body position, messages, and deep breathing exercises (Rahayu, et al., 2020). Physical discomfort, increased abdominal size, and fetal movements often affect the mother's daily activities, and can even interfere with her rest. In addition, mothers can also find it difficult to get a comfortable position (Fauziah, S., 2020).

According to previous research by Mafikasari, A and Kartikasari RI (2015), in Indonesia, the incidence of pregnant women experiencing low back pain reaches 60% to 80%. Meanwhile, although there is no epidemiological data regarding low back pain, the prevalence of pregnant women experiencing low back pain in Central Java is 40%. Data from the Kendal District Health Office, the incidence of back pain in pregnant women in 2017 was 16,593, the third trimester incidence was 8,296 while in 2018 it was 17,341, the third trimester incidence was 8,670 at the Cepiring Health Center Kendal Regency in 2017 pregnant women who checked their pregnancy around 870 435 people who feel back pain in the third trimester while in 2018 there are 890 people who feel back pain in the third trimester as many as 445. Prenatal Yoga is an activity that includes breathing exercises as well as stretching. Pregnant women may experience an imbalance that can result in back pain. Gentle stretching with a slight emphasis on muscle balance and flexibility will help relieve discomfort and relax muscles during pregnancy (Rejeky and Tia, 2019).

Based on initial interviews with 10 third trimester pregnant women at the Depok midwife clinic conducted in May, it was found that 8 pregnant women felt complaints of back pain, pregnant women said to overcome their back pain by massaging their back but it was not effective and Prenatal yoga has not been done to treat back pain in the third trimester pregnant women who were interviewed. Based on the description above, the researcher is interested in conducting this study entitled "The Effectiveness of Prenatal Yoga Against Back Pain in Third Trimester Pregnant Women at the Depok Clinic in 2022".

2. Method

This type of research is a quasi-experimental design with pretest and posttest with control group design. The study was conducted at the Depok Clinic in 2022. The population in this study was 50 pregnant women TM III, the number of samples was 30 people. The sampling technique is
purposive sampling. The data used is primary data. Data in univariate and bivariate analysis with Wilcoxon and Mann Whitney test. The data was processed using a computer with the SPSS program.

3. Result and Discussion

The average level of back pain in the control group at the first examination for pregnant women in the third trimester was 4.40 with a standard deviation of 0.828. Meanwhile, the average level of back pain in the control group on the second examination in third trimester pregnant women was 4.07 with a standard deviation of 0.799.

The mean level of back pain in the intervention group before prenatal yoga was performed in third trimester pregnant women was 4.60 with a standard deviation of 0.828. Meanwhile, the average level of back pain in the intervention group after prenatal yoga was performed in third trimester pregnant women was 2.07 with a standard deviation of 0.799. There was no effect of not giving prenatal yoga to the control group on the first and second examinations on the level of back pain in third trimester pregnant women at the Depok Clinic in 2022 (p value 0.059).

There was no effect of not giving prenatal yoga to the control group on the first and second examinations on the level of back pain in third trimester pregnant women at the Depok Clinic in 2022 (p value 0.059). There is an effect of prenatal yoga on the level of back pain in the intervention group before and after prenatal yoga is performed in third trimester pregnant women at the Depok Clinic in 2022 (p value 0.001). There is a difference in the level of back pain between the control group and the intervention group in third trimester pregnant women at the Depok Clinic in 2022 (p value 0.000).

3.1 Discussion

a. The effect of not giving prenatal yoga to the control group on the first and second examinations on the level of back pain in third trimester pregnant women

The results of the study stated that there was no effect of not giving prenatal yoga to the control group on the first and second examinations on the level of back pain in third trimester pregnant women at the Depok Clinic in 2022 with a p value of 0.059 (p > 0.05).

The results of this study are in line with research conducted by Fitriani Syafitri (2018) on the effect of prenatal yoga on reducing back pain in pregnant women TM III which states that in the control group the average back pain in the first measurement is 5.18 and back pain in the second measurement is 5.04. The statistical test results obtained a p value of 0.078, so it can be concluded that there is no effect of not doing prenatal yoga in the control group. The same study was also conducted by Hidayatullah (2018) who also said that there was no significant change in the complaints of back pain felt by pregnant women with TM III in the first and second measurements of the control group with the result of the statistical test p value of 0.187.

According to the theory when pregnant women experience pain that is influenced by several factors, namely age, poor health conditions, psychological and psychosocial problems, degenerative arthritis, smoking, sitting or standing for hours, and obesity. To overcome back pain, you can do sports, hot and cold compresses, improve posture and consultation (Jannah, 2018).

According to the researcher's analysis in this study, there was no significant change between back pain on the first and second examinations in the control group. This happened because in the control group there was no intervention given to the mother to reduce back pain. Pregnant women who experience back pain can be affected by excessive bending, can be affected by excessive or strenuous physical activity such as doing housework, can cause fatigue, lack of rest, and the growing belly of the mother. This condition causes pregnant women to feel uncomfortable and back pain occurs with different intensities. In the third trimester, the body posture of pregnant women is increasingly lordotic due to the enlargement of the uterus. In this condition, pregnant women should do activities or exercises during pregnancy to help relax the muscles in the back of the mother. However, in the control group, no special activities or exercises were carried out in an effort to help reduce maternal back pain, such as the absence of exercise during pregnancy such as pregnancy exercise or yoga exercise. So this will not change the mother's complaints and condition so that in this study in the control group there was no good effect or significant change in back pain between the first and second measurements.

b. The effect of prenatal yoga on the level of back pain in the intervention group before and after prenatal yoga in third trimester pregnant women

The results of the study stated that there was an effect of prenatal yoga on the level of back pain in the intervention group before and after prenatal yoga was carried out in third trimester
pregnant women at the Depok Clinic in 2022 with a p value of 0.001 (p > 0.05).

This study is in line with research conducted by Miftakhul (2021) which showed that before being given prenatal yoga, the mean value (mean back pain scale) was 4.69; the median (middle value) is 5.00; mode (often back pain scale) is 5; the standard deviation is 1.138; the minimum value of the pain scale is 3 and the maximum value of the pain scale is 7. Meanwhile, after being given prenatal yoga, the mean value (mean back pain scale) is 2.50; the median (middle value) is 3.00; the mode (often back pain scale) is 3; standard deviation is 1.155; the minimum value of the pain scale is 1 and the maximum value of the pain scale is 4. Based on the table, the p value is 0.000 < 0.

The same study was also conducted by Annisa RQ (2018) which also stated that there was a difference in the level of back pain between the control group and the intervention group in third trimester pregnant women. This research was conducted in the work area of the Kalikajar I Public Health Center, Wonosobo Regency with the number of respondents 14 third trimester pregnant women experiencing low back pain. The effect test with the yoga treatment between before the intervention got the mean±SD 4.14±1.127 with p=0.000, while after the intervention the mean±SD 2.71±1.204 with p=0.000(p<0.05). This means that there is a significant effect between the mean pain intensity before and after yoga. So it can be concluded that yoga has an effect in reducing the intensity of low back pain in third trimester pregnant women.

c. The difference in the level of back pain between the control group and the intervention group in third trimester pregnant women

The results showed that there was a difference in the level of back pain between the control group and the intervention group in third trimester pregnant women at the Depok Clinic in 2022 with a p value of 0.000 (p > 0.05). According to the Official DC research (2016), this is a quasi-experimental study to determine the effect of yoga on low back pain in third trimester pregnant women. This research was conducted in the work area of the Kalikajar I Public Health Center, Wonosobo Regency with the number of respondents 14 third trimester pregnant women experiencing low back pain. The effect test with the yoga treatment between before the intervention got the mean±SD 4.14±1.127 with p=0.000, while after the intervention the mean±SD 2.71±1.204 with p=0.000(p<0.05). This means that there is a significant effect between the mean pain intensity before and after yoga. So it can be concluded that yoga has an effect in reducing the intensity of low back pain in third trimester pregnant women.

The same study was also conducted by Annisa RQ (2018) which also stated that there was a difference in the reduction of back pain in TM III pregnant women between the intervention group and the control group with a p value of 0.001. With the difference in the reduction of back pain 2.16 greater in the intervention group than the control group.

According to the theory back pain is one of the most common discomforts during pregnancy. Back pain can occur due to pressure on the back muscles or a shift in the spine, causing depressed joints (Fraser, DM et al 2009 in Fortune ST 2019). Other factors that can affect the incidence of back pain complaints during pregnancy are changes in body posture, weight gain and redistribution of
According to Yoo et al. (2015) Back pain experienced by pregnant women is due to an increase in body weight and spinal physiology. The presence of spinal curvature of pregnant women which increases towards the end of pregnancy and changes in body posture. Efforts that can be made to reduce back pain is by doing prenatal yoga. Prenatal yoga (yoga exercise in pregnancy) is one type of modification of hatha yoga adapted to the condition of pregnant women. The purpose of prenatal yoga is to prepare pregnant women physically, mentally, and spiritually for the birth process. With careful preparation, the mother will be more confident and gain confidence in having a smooth and comfortable delivery.

The researcher assumed that in this study there were differences in back pain between the control and intervention groups. It can be seen in the results of this study that the reduction in back pain was highest in the intervention group because the intervention group was given prenatal yoga treatment, while the control group was not given prenatal yoga treatment because based on the purpose of this study it was to see a comparison between the 2 intervention groups and the control group.. If both groups were given prenatal yoga, the researchers could not see the difference in the reduction in back pain and whether this yoga was indeed effective in reducing back pain in pregnant women. So that in the control group there was no change in back pain on the first and second examinations.

### Table 1
The Mean Level of Back Pain in the Control Group on the First and Second Examination For Pregnant Women in the Third Trimester at the Depok Clinic 2022

| Inspection | N  | mean | SD   | Min - Max | 95% CI      |
|------------|----|------|------|-----------|-------------|
| First      | 15 | 4.40 | 0.82 | 3 – 6     | 3.94 – 4.86 |
| Second     | 15 | 4.07 | 0.79 | 3 – 5     | 3.62 – 4.51 |

### Table 2
The average level of back pain in the intervention group before and after prenatal yoga was carried out in third trimester pregnant women at the Depok Clinic 2022

| Inspection | N  | mean | SD   | Min - Max | 95% CI      |
|------------|----|------|------|-----------|-------------|
| Before     | 15 | 4.60 | 0.82 | 3 – 6     | 4.14 – 5.06 |
| After      | 15 | 2.07 | 0.79 | 1 – 3     | 1.62 – 2.51 |

### Table 3
The effect of not giving prenatal yoga to the control group on examination first and second on the level of back pain in third trimester pregnant women at the Depok Clinic in 2022

| Inspection | N  | mean | SD   | Difference | P value    |
|------------|----|------|------|------------|------------|
| First      | 15 | 4.40 | 0.82 | 0.33       | 0.059      |
| Second     | 15 | 4.07 | 0.79 |            |            |

### Table 4
The Effect of Prenatal Yoga on Back Pain Levels in the Prior Intervention Group And After Prenatal Yoga Is Done in Third Trimester Pregnant Women At the Depok Clinic in 2022

| Inspection | N  | mean | SD   | Difference | P value    |
|------------|----|------|------|------------|------------|
| Before     | 15 | 4.60 | 0.82 | 2.53       | 0.001      |
| After      | 15 | 2.07 | 0.79 |            |            |

### Table 5
Differences in the level of back pain between the control group and the intervention group For Pregnant Women in the Third Trimester at the Depok Clinic 2022

| Group       | N  | mean | SD   | Difference | P value |
|-------------|----|------|------|------------|---------|
| Control     | 15 | 4.07 | 0.79 | 2          | 0.000   |
| Intervention| 15 | 2.07 | 0.79 |            |         |
4. Conclusion

The results of the univariate study showed that the average level of back pain in the control group at the first examination in third trimester pregnant women was 4.40 ± SD 0.828 and the second examination was 4.07 ± SD 0.799. The mean level of back pain in the intervention group before the intervention was 4.60 ± SD 0.828 and after the intervention was 2.07 ± SD 0.799.

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