The Effectiveness of Pregnancy Exercise In Relieving Back Pain During Third Trimester of Pregnancy at BPM Nurhidayah Cisarua Bogor In 2021

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ABSTRACT

Several factors, such as weight gain during pregnancy, fatigue, and changes in posture, often trigger various complaints in pregnant women, one of which is back pain. Improper posture tends to force additional stretching and fatigue on body, especially in spine which causes back pain. One of ways to relieve it is to pay attention to body position, especially when lifting objects, not standing too long, avoiding heavy work, using pillows at bedtime to straighten back, and doing pregnancy exercise. Management to reduce back pain is to maintain good posture by paying attention to good body mechanisms, especially when lifting objects, not standing too long, avoiding heavy work and using pillows at bedtime to straighten back and doing pregnancy exercise. One way to improve health during pregnancy is to do light exercise such as pregnancy exercise. This study aimed at finding out the effectiveness of pregnancy exercise in relieving back pain in third trimester pregnant women. This study used quasi-experimental research design with one-group pretest-posttest approach. A sample of 20 was obtained using purposive sampling technique. Data were analyzed using Paired T-test.

Results of difference test using paired sample t-test obtained mean difference of 3.80 with significance value of 0.002 < 0.05, indicating that pregnancy exercise has been proven to be effective in relieving pain in third trimester pregnant women. Results of mean difference test, t-test and correlation test have proven that pregnancy exercise is effective in relieving back pain in third trimester pregnant women at BPM Nurhidaya Cisarua Bogor in 2021.

Keywords: Effectiveness, Pregnancy Exercise, Third Trimester, Pain

BACKGROUND

Several factors, such as weight gain during pregnancy, fatigue, and changes in posture, often trigger various complaints in pregnant women, one of which is back pain. Improper posture tends to force additional stretching and fatigue on body, especially in spine which causes back pain. American Pregnancy Organisation released data showing incidence rate of back pain during pregnancy was 48-90%. There were 50% of pregnant women surveyed in UK and Scandinavia who reported back pain, 70% in Australia, and about 20% of patients with acute low back pain would continue to experience chronic symptoms (Fraser and Cooper, 2019). It is necessary to treat back pain during pregnancy since it can result in long-term back pain, increasing tendency for postpartum back pain and chronic back pain to be more difficult to treat or cure.

Moreover, according to Ministry of Health of the Republic of Indonesia, the number of pregnant women in Indonesia in 2019 reached 5,256,483 (Ministry of Health of the Republic of Indonesia, 2020). Data from West Java Provincial Health Office in 2019 showed that the number of pregnant women in West Java Province was 145,098 people, and back pain was a complaint that pregnant women often reported when conducting Antenatal Care (West Java Provincial Health Office, 2020). Based on some of presented, it is known that back pain is one of the most common complaints experienced by pregnant women. Back pain that occurs usually varies between pregnant women. Some have experienced back pain even in early stages of pregnancy, while some others start experiencing it mid-pregnancy before delivery. One of causes of back pain is weight gain of pregnant women.

In case of back pain during pregnancy, one way to relieve it is to pay attention to body position, especially when lifting objects, not standing too long, avoiding heavy work, using pillows at bedtime to straighten back, and doing pregnancy exercise (Hani, 2016). Similar opinion was conveyed by Nugroho (2014) that management to reduce back pain is to maintain good posture by paying attention to good body mechanisms, especially when lifting objects, not standing too long, avoiding heavy work and using pillows at bedtime to straighten back and doing pregnancy exercise (Nugroho, 2014).

Several studies on back pain have found that about 25%-90% of pregnant women experience pain. Mayer (2014), in his study, affirmed that back pain was often exacerbated by occurrence of backache, which was found in 45% of pregnant women in early pregnancy, increased 69% at 28 weeks and usually remained at this level. Octavia (2018) conducted a study on 100 pregnant women and found that 16.7% of them experienced back pain in the first trimester; about 31.3% had back pain in the second trimester; and 53% experienced it in the third trimester which usually increased with increasing gestational age.

Furthermore, Yuliarti (2010), in her study, claimed that one of methods to improve health during pregnancy was to do light exercise such as pregnancy exercise. Besides, Febriana (2018) conducted a study entitled The Effectiveness of Pregnancy Exercise on Relieving Back Pain in Pregnant Women and found that there was a significant difference between average back pain intensity of pregnant women in experimental group and control group after doing pregnancy exercise. Thus, it can be concluded that pregnancy exercise is effective in relieving back pain in pregnant women.

Results of the aforementioned study are reinforced by Asninah (2015) stating that pregnancy exercise can relieve complaints of back pain felt by pregnant women because there are movements that can strengthen abdominal muscles. Pregnant women are encouraged to do pregnancy exercise when they enter their sixth month of pregnancy. Doing regular and intensive pregnancy exercise can maintain optimal health of body as well as fetus.

BPM Nurhidayah Cisarua Bogor is one of Private Practice Midwives (Bidan Praktek Mandiri – henceforth BPM) that has a pregnant women class program which is routinely run every month with counseling and pregnancy exercise activities. A preliminary study at BPM Nurhidayah Cisarua Bogor found that back pain was one of complaints that was often experienced by third trimester pregnant women. Based on medical records of BPM Nurhidayah Cisarua Bogor, there were 43 third trimester pregnant women, of which 30 (70%) experienced back pain. They stated that lower back pain was felt from 8 months of pregnancy. It disturbed them in their activities and they usually just took a rest (lay down) to reduce their complaints.

Referring to results of interviews with pregnant women who experienced back pain, they already knew about pregnancy exercise but never tried to practice it since they had no time and were busy with daily activities. Based on problems experienced by most pregnant women who carried out pregnancy check-up at BPM Nurhidayah Cisarua Bogor, researcher was interested in conducting a study entitled "The Effectiveness of Pregnancy Exercise in Relieving Back Pain in the Third Trimester of Pregnancy at BPM Nurhidayah Cisarua Bogor in 2021."

METHODS

This study used quasi-experimental research design which aimed at determining a symptom or effect experienced as a result of treatment of pregnancy exercise on back pain in pregnant women. It used a control group, with one-group pretest-posttest. Population in this study were all pregnant women who had an estimated date of delivery in February 2021 at BPM Nurhidayah Cisarua Bogor with a total of 30 respondents.

Importantly, sampling was conducted using purposive sampling technique. Sample in this study was pregnant women who did ANC at BPM Nurhidayah Cisarua Bogor in 2020-2021 and experienced back pain with a total of 20 people.

RESULT

Univariate

Mean score of back pain in third trimester pregnant women at BPM Nurhidayah Cisarua Bogor in 2021 before and after doing pregnancy exercise can be seen in Table 4.1.

Table 1. Mean Score of Back Pain in Third Trimester Pregnant Women at BPM Nurhidayah Cisarua Bogor in 2021 Before and After Doing Pregnancy Exercise

Variable	N	Mean	Min	Max	Modus	Stand
Back Pain - Pretest	20	7.95	7	9	7	0.826
Back Pain - Posttest	20	3.75	1	3	3	1.305

Based on Table 1, mean score of back pain in pretest obtained 7.95 which was classified as severe pain with a minimum pain score of 7 and a maximum pain score in pretest of 9 which was classified as severe pain. Additionally, mean score of back pain in posttest was 3.75, which was classified as mild pain with a minimum pain score in posttest of 1 which was classified as almost free from pain, and a maximum score of 3 which was classified as mild pain. From these data, difference in mean score of pain before and after doing exercise was 4.20.

Normality Test

Table 2. Results of Shapiro-Wilk Test

Variable	Asymp. Sig (2-tailed)	α =5%	Note
Pain – Pretest	0.137	Greater	Normal
Pain - Posttest	0.109	Greater	Normal

Based on Table 2, significance level of pain in pretest was 0.137 > 0.05, while significance level of pain in posttest was 0.109 > 0.05. Therefore, all data were normally distributed

Homogeneity Test

After normality test, homogeneity test was conducted to accept or reject hypothesis by comparing significance level with 0.05 (sig > 0.05). Its results can be seen in Table 3.

Table 3
Results of Homogeneity Test

Pain	Sig	Note
Pretest	.680	Homogeneous
Posttest	.467	Homogeneous

Table 4.3 demonstrates that results of homogeneity test obtained significance level of pain in pretest 0.680> 0.05, while in posttest 0.467 > 0.05, indicating that some of these data had homogeneous variants. Since data were normal and homogeneous, method used was a non-parametric statistical method using paired sample t-test

Bivariate Analysis

Changes in pain before and after pregnancy exercise can be seen in Table 4.4.

Table 4. Changes in Back Pain in Third Trimester Pregnant Women at BPM Nurhidayah Cisarua Bogor in 2021 Before and After Doing Pregnancy Exercise

Pain	Sig (2-tailed)	Note
Pretest Posttest	.000	Significant

Results of changes in back pain before and after doing pregnancy exercise using paired-sample t-test obtained significance level of 0.000 < 0.05, meaning that there were changes in back pain in third trimester pregnant women at BPM Nurhidayah Cisarua Bogor in 2021 before and after doing pregnancy exercise.

The effectiveness of pregnancy exercise in relieving back pain in third trimester pregnant women at BPM Nurhidayah Cisarua Bogor in 2021 can be seen in Table 5.

Table 5. The Effectiveness of Pregnancy Exercise in Relieving Back Pain in Third Trimester Pregnant Women at BPM Nurhidayah Cisarua Bogor in 2021

Pain	Mean	Pain Relief	
Pretest Posttest	7.95 3.75	4.20	0.002
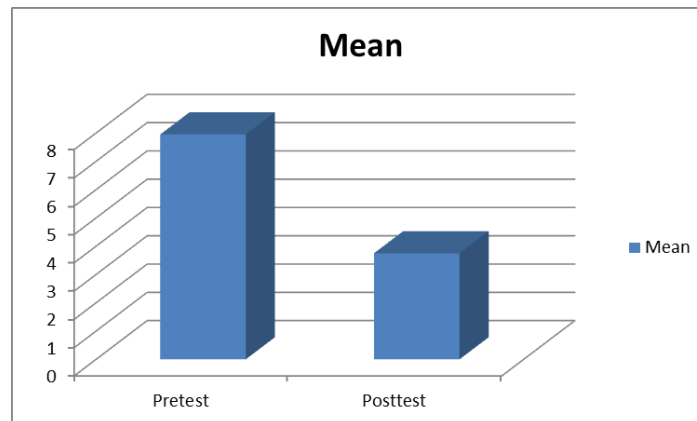
Graph 1. The Effectiveness of Pregnancy Exercise in Relieving Back Pain in Third Trimester Pregnant Women at BPM Nurhidayah Cisarua Bogor in 2021

Based in Table 4.5 and Graph 4.1, there was a decrease in mean score of pain before and after doing pregnancy exercise by 4.20 and a sig level of 0.002, indicating that pregnancy exercise had been proven to be effective in relieving back pain in third trimester pregnant women at BPM Nurhidayah Cisarua Bogor in 2021

DISCUSSION

Data presented in this chapter is about the effectiveness of pregnancy exercise in relieving back pain in third trimester pregnant women at BPM Nurhidayah Cisarua Bogor in 2021. Data collection was carried out on January 22 – February 2, 2021. Population in this study were pregnant women who performed ANC at BPM Nurhidayah Cisarua Bogor in 2020-2021 who experienced back pain with a total of 20 respondents and were willing to be investigated by signing informed consent.

Based on results of statistical tests, mean score of back pain in pretest was 7.95 which was classified as severe pain with a minimum pain score of 7 and a maximum score in pretest of 9 which was classified as severe pain. Mean score of pain in posttest was 3.75 which was classified as mild pain, with a minimum pain score in posttest of 1 which was classified as almost free from pain, and a maximum score of 3 which was classified as mild pain. Accordingly, difference in mean score of pain before doing and after doing exercise was 4.20.

More importantly, paired sample t-test obtained significance level of $0.002 < 0.05$, indicating that there were changes in back pain in third trimester pregnant women at BPM Nurhidayah Cisarua Bogor in 2021 before and after doing pregnancy exercise.

Results of this study are in line with previous study conducted by Febriana (2018) with a title The Effectiveness of Pregnancy Exercise in Relieving Back Pain in Pregnant Women. This study demonstrated that there was a significant difference between average back pain intensity of pregnant women in experimental group and control group after doing pregnancy exercise. Thus, it can be concluded that pregnancy exercise is effective in relieving back pain in pregnant women.

Moreover, results of this study are also supported by a theory presented by Yuliarti (2010) that one of methods to improve health during pregnancy was to do light exercise such as pregnancy exercise. Pregnancy exercise is a form of exercise to strengthen and maintain elasticity of muscles of abdominal wall, ligaments, and pelvic floor muscles associated with childbirth. This exercise serves to strengthen stability of core of body which will help

maintain healthy spine. Having good body strength can improve individual balance and stability and minimize risk of spinal trauma or falls during pregnancy.

Asninah (2015), in this case, strongly advocated that pregnancy exercise can relieve back pain complaints felt by pregnant women since there are movements that can strengthen abdominal muscles. Pregnant women are encouraged to do pregnancy exercise when they enter their sixth month of pregnancy. Doing regular and intensive pregnancy exercise can maintain optimal health of body as well as fetus.

The aforementioned theory is in accordance with a reality that pain symptoms in adolescent respondents can be relieved by routine pregnancy exercise. Results of observation obtained maximum score of pain in pretest of 9, that was classified as severe pain. Mean score of pain in posttest was 3.75 which was classified as mild pain, showing that there was a decrease in mean score of pain by 4.20 after pregnant women did routine pregnancy exercise. In addition, pregnant women are also encouraged to routinely carry out pregnancy check-ups as an attempt to monitor health of fetus and mother

CONCLUSION

Based on results of this study on the effectiveness of pregnancy exercise in relieving back pain in third trimester pregnant women at BPM Nurhidayah Cisarua Bogor in 2021, there is back pain relief in posttest. In other words, in this case, pregnancy exercise has been proven to be effective in relieving back pain in third trimester pregnant women at BPM Nurhidayah Cisarua Bogor in 2021.

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