The Effect of Breathing Relaxation Techniques and Body Exercises on The Decrease of Pregnant Women’s Discomforts in The Third Trimester

Muliatul Jannah¹), Alfiah Rahmawati²

¹) Program Studi Sarjana & Profesi Bidan Universitas Islam Sultan Agung, Email: muliatuljannah@unissula.ac.id, Tlp: +6281225263243
²) Program Studi Sarjana & Profesi Bidan Universitas Islam Sultan Agung, Email: alfiarahmawati@unissula.ac.id

ABSTRACT

Pregnancy is the most challenging and the happiest phase in every woman’s life in which a mother through physical and psychological changes. These physical changes will lead to discomforts to pregnant women. These discomforts can occur in their third trimester of pregnancy, such as backache, leg cramps, pain in pubic bones, false contraction, insomnia, breathing soreness, and fatigue. Exercise that can be done during pregnancy is practicing breathing techniques and body exercises (Prenatal Yoga). This is because the body stretches the muscles more relaxed, so that blood circulation works properly and the body produces endorphins. This study aimed to find out the effect of breathing relaxation techniques and body exercises on the discomfort decrease in the third trimester of pregnant women. Type of study was Quasi Experiment with Non-Equivalent Control Group approach by examining the pregnant women’s discomforts in the third trimester before (pre-test) and after (post-test) practicing breathing techniques and body exercises (Prenatal Yoga). The population were all the third trimester pregnant women who practiced breathing techniques and body exercises at Kasih Ibu Mother and Child Hospital. The sampling technique used was quota sampling. This study carried out from October to November 2020. The Wilcoxon test results obtained p value = 0.000, then p = 0.000 > = 0.05, it can be concluded that there was significant difference between of third trimester pregnant women before and after doing breathing relaxation techniques and exercise body. There is an effect of Prenatal Yoga practice on discomfort in third trimester pregnant women.

Key words: Discomforts, Breathing Relaxation Techniques and Body Exercises (Prenatal Yoga)

ABSTRAK

Kehamilan adalah fase yang paling menantang, namun merupakan fase paling membahagiakan dalam kehidupan wanita mana pun dimana seorang ibu mengalami perubahan fisik dan psikologis. Perubahan fisik ini akan menimbulkan ketidaknyamanan...
INTRODUCTION
Pregnancy brings changes to a mother in many aspects. Physiologically, these changes can be categorized into local and systemic changes. The former refers to changes occurring in reproductive organs, while the latter are the ones that occur in the whole body. In addition, psychological and emotional changes also occur during pregnancy. Emotional instability in pregnant women occurs due to hormonal changes. Pregnant women may accept something in a day, then swiftly turn it down the next day (1).

Changes that occur during pregnancy cause specific symptoms based on the pregnancy stages which consist of three trimesters. The period which requires special attention is during the third trimester, because it is a period when fetus grows and develops increasingly. Changes that occur in the third trimester can lead to discomforts, such as drastically increasing body weight which makes pregnant women easily exhausted, insomnia, breathing soreness, edema in legs and hands. As the fetus grows and pushes up the diaphragm, the shape and size of chest cavity changes. Tidal volume, ventilator volume per minute and oxygen uptake also increases. Due to the changes of thoracic cavity shape and faster breathing, about 60% of pregnant women complain of breathing soreness.

The more increasing uterine fundus accompanied by abdomen dilatation makes the stomach loaded more in the front side. In an effort to adjust to the excessive body load, the spine pushes backwards, forming a lordosis posture.

This causes mother to feel soreness/pain in the waist, discomfort in perineum, braxton hick’s contractions, and cramps in legs. Meanwhile, emotional changes include anxiety, fear, and
depression. Discomforts during pregnancy and anxiety in facing childbirth cause sleeping disorders in pregnant women. Physical and emotional changes during pregnancy are two of conditions that can cause sleeping disorders in pregnant women (2).

New attempts in maintaining and improving maternal health, particularly in pregnant women, have been made by means of physical exercises which have a good effect on fetus, pregnancy, birth weight and reduce labor complications, such as reducing pain levels and prolonged labor. Several efforts that can be made to maintain and improve pregnant women’s health status are prenatal examinations, expectant class programs, breathing relaxation techniques and body exercises during pregnancy (Prenatal Yoga).

Several studies have been conducted to reveal the effect of prenatal yoga on reducing physical complaints. The results (3) say that there are significant differences between pregnant women with pre- and post-prenatal yoga exercises. Physical complaints, such as muscle spasms, flatulence, tingling sensation in fingers and toes, breathing soreness, headache, leg cramps, constipation, insomnia, upper and lower backache are decreased. Prenatal Gentle Yoga is effective in reducing those physical complaints in pregnant women in the third trimester at Kamonji Public Health Center.

Meanwhile, the results of the preliminary study conducted by the author on March 15, 2020 showed that there were 5 pregnant women who took yoga classes due to backache complaint and some found that their fetal position was not at its best, and pain in the groin or pubic symphysys dysfunction.

Based on the background of the study, the author is interested in conducting a more in-depth study on the effect of breathing relaxation techniques and body exercises on the pregnant women’s discomfort in the third trimester at Kasih Ibu Mother and Child Hospital Tegal.

METHODS

The study is quantitative analytic research using a purposive sampling method, that is, a sampling technique done by selecting samples among population based on the targets (objectives/problems in the study) to be achieved, one group pre and post test without control approach. The population in this study were 43 third trimester pregnant women who practiced pregnancy examinations at Kasih Ibu Mother and Child Hospital Tegal. The sampling method was conducted using non-probability sampling, that was, 20 third trimester pregnant women who practiced breathing relaxation techniques and body exercises (yoga).

Exercises for breathing relaxation techniques and exercise (yoga) are carried out while adhering to health protocols (washing hands, keeping distance, and wearing masks). In the room, there are yoga equipment available such as mattresses, wooden blocks, straps, and yoga blankets that are used for 1 set of tools with 1 patient. The implementation technique is divided into four stages, namely warming up, breathing, meditation, and relaxation. If the mother feels uncomfortable, the mother is advised to stop the exercise.

The data collection instrument collection during the pandemic is
divided into 2 sessions every day, namely in the morning (10am-11.00 WIB) and afternoon (16.00-17.00 WIB) or conditionally (adjusting to the patient). Each session there are 3-4 patients.

The measurement used was in the form of questionnaire sheets with pre-test interview concerning the physical complaints they had. In this study, the Shapiro-Wilk test was used to determine the normality of the data with abnormally distributed data results, so that the calculation of the research data results used the Wilcoxon test.

RESULTS

Table 1. Respondents’ Characteristics

<table>
<thead>
<tr>
<th>No</th>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary (Elementary – Junior High School)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Secondary (Senior High School)</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Higher Education (University)</td>
<td>16</td>
<td>80</td>
</tr>
<tr>
<td>2.</td>
<td>Profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Housewife</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Self-employed</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Civil Servant</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>Pregnancy Companion</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Husband</td>
<td>17</td>
<td>85</td>
</tr>
<tr>
<td></td>
<td>Parents in-law</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Self-reliance</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Primary Data

In terms of profession, the most dominant was housewife as many as 8 people (40%) and the least was self-employed with 1 person (5%). Meanwhile, the most dominant companion status was husband with 17 people (85%).

Table 2. The Pre-Test and Post-Test of Respondents’ Discomforts

<table>
<thead>
<tr>
<th>Discomforts</th>
<th>Pre-Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f (%)</td>
<td>f (%)</td>
</tr>
<tr>
<td>Backache</td>
<td>18 90</td>
<td>3 15</td>
</tr>
<tr>
<td>Leg Cramps</td>
<td>10 50</td>
<td>2 10</td>
</tr>
<tr>
<td>Contraction</td>
<td>9 45</td>
<td>4 20</td>
</tr>
<tr>
<td>Fatigue</td>
<td>19 95</td>
<td>3 15</td>
</tr>
<tr>
<td>Insomnia</td>
<td>15 75</td>
<td>5 25</td>
</tr>
</tbody>
</table>

Source: Primary Data

Table 2 shows 5 discomforts during pregnancy which are indicators of the study, stating that respondents felt the
decrease in the discomforts including backache, leg cramps, contraction, fatigue and insomnia, both before and after breathing relaxation techniques and body exercises. Most of whom experienced backache.

Table 3. The Pre-test Post-Test Values of Pregnancy Discomforts and The Difference of Pre-test and Post-test of Pregnant Women’s Third Trimester Discomforts

<table>
<thead>
<tr>
<th>The value of discomforts</th>
<th>n</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min-Max</th>
<th>95% CI</th>
<th>Z</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>20</td>
<td>27,50</td>
<td>28,50</td>
<td>5,652</td>
<td>18-39</td>
<td>24.85</td>
<td>3.828</td>
<td>*0.000</td>
</tr>
<tr>
<td>Post-Test</td>
<td>20</td>
<td>35,50</td>
<td>36,50</td>
<td>4,730</td>
<td>23-41</td>
<td>33.29</td>
<td>-</td>
<td>37.71</td>
</tr>
</tbody>
</table>

* Wilcoxon Test

Table 3 shows the statistical result that the average value of the respondents’ pregnancy discomforts in the third trimester in the measurement before breathing relaxation techniques and body exercises were conducted reached 27.50 (95% CI: 24.85-30.15), with standard deviation of 5.652. Meanwhile, the average value of that after breathing relaxation techniques and body exercises were conducted in the intervention group reached 35.50 (95% CI: 33.29-37.71), with standard deviation of 4.730. From the interval estimation, it can be concluded that 95% believed that the average of pregnant women’s discomforts before breathing relaxation techniques and body exercises was between 24.85 to 30.15 and that after breathing relaxation techniques and body exercises was between 33.29-37.7. The table also describe the difference in the mean value between the pre-test and post-test measurements of the intervention group by 3.8. The Wilcoxon test results showed the value of p = 0.000 and the value of p = 0.000> α = 0.05. Therefore, it can be concluded that there is a significant difference between the pregnant women’s discomforts in the third trimester before and after breathing relaxation techniques and body exercise.

DISCUSSION

In this study, in terms of educational characteristics, most respondents have a higher educational background (university) as many as 16 people (80%). The level of education influences the way the mother views and thinks of labor preparation lackingly, for example regarding the choice of place of delivery and their companion (4). Most respondents who work at home are housewives and private sector. This is also one of the factors causing their burden. This study is in line with researches (3) stating that the amount of improper movement of body positions while working and limited time to empower themselves, such
as exercising, causes discomforts. Profession describes an individual's economic status. Low economic status leads to mother's lack of knowledge and preparation to organize the upcoming labor (5).

From the data on the frequency distribution of respondent pregnancy companion characteristics showed that the most dominant companion status was husband as many as 17 people (85%). Sufficient support from family, especially husbands, will greatly help reduce mother's anxiety, fear, and confusion about their pregnancy (1). Referring to table 2, there are 5 complaints as the indicators of the study, including the decrease in discomforts both before and after breathing relaxation techniques and body exercises, but most of which is backache. According to Rafika's study, there is a change in pregnant women's discomforts in the third trimester after practicing breathing relaxation techniques and body exercises. This is because the body is more relaxed, so that blood circulation works properly and the body produces endorphin hormones (3).

The uncomfortable sleeping position and insomnia felt by the third trimester pregnant women result from increasing blood pressure in the body and the heart pumping blood rapidly. As the stomach gets bigger, fetus keeps moving in the uterus, making discomfort in the gut. Therefore, the way that they can do to get a sense of comfort while sleeping is by looking for a comfortable position, that is by oblique sleeping position, taking a warm bath, listening to music that can provide calm and a sense of relaxation (6).

One of movements of yoga that affect discomfort such as leg cramps is Janu Sirsasana. Janu Sirsasana (Head-to-Knee Pose) is a full forward fold that offers a stretch from your ankle to your knee, along the full length of your back, and along the side-body as well. It can help calm your mind as well as stretch your body. As you fold forward, close your eyes and cultivate a sense of inner peace.

The result of this study is in accordance with the theory (7), stating that practicing yoga during pregnancy is a useful solution as a self-help medium to reduce discomforts during pregnancy, assist in labor process, and even mentally prepare for the early days after the labor and when raising the child. Pregnant women who do exercise regularly are reported to experience lower levels of discomforts during pregnancy and the healing is faster than those who do not exercise during pregnancy.

Pregnant women undergo rapid, extreme changes to their bodies over a relatively short period of time. This leads to many of the aches and pains commonly associated with pregnancy, such as morning sickness, lower back pain, difficulty sleeping, and shortness of breath. The practice of yoga has been shown to be beneficial in all these areas and promote a happy and healthy pregnancy (8).

Prenatal yoga in pregnancy trimester III in the intervention group, which start the warm-up movement neck, side stretching and twisting body, shoulder, and shoulder stretches is continued. Yoga moves: posture restoration (mudhasana/child
posture), standing posture (uttakatasana/ chair posture, hip rotation series (pelvic rocking), flexing posture and strengthening the pelvis (squatting posture series, baddha konasana/butterfly posture series), loop Sufi, health while breathing relaxation diaphragm (9). In yoga exercise, pregnant women pregnant women are clearly directed when they have to inhale and when they have to exhale (10).

Table 3 shows the statistical result that the average value of the respondents' third trimester of pregnancy discomforts in the measurement before breathing relaxation techniques and body exercises were conducted reached 27.50 (95% CI: 24.85-30.15), with standard deviation of 5.652. Meanwhile, the average value of the respondents' third trimester of pregnancy discomfort in the measurement after breathing relaxation techniques and body exercises were conducted in the intervention group reached 35.50 (95% CI: 33.29-37.71), with standard deviation of 4.730. From the interval estimation, it can be concluded that it is believed in 95% that the average the pregnant women’s discomforts before breathing relaxation techniques and body exercises was between 24.85 to 30.15 and that after breathing relaxation techniques and body exercises was between 33.29-37.71.

This is in line with the research conducted by (Mediarti, et al.,2014) that the average of pregnant women’s discomforts in the third trimester in the measurement before practicing antenatal yoga was 12.78 with standard deviation of 2,210. Meanwhile in the measurement after practicing antenatal yoga, it was found that the average discomfort of pregnant women in the third trimester was 12.19 with standard deviation of 2.912. The mean value of the difference between the pre-test and post-test measurements is 0.59 with standard deviation of 1.103.

Table 4 shows the difference in the mean value between the pre-test and post-test measurements of the intervention group by 3.8. The Wilcoxon test results showed the value of p = 0.000 and the value of p = 0.000> α =0.05. Therefore, it can be concluded that there is a significant difference between the pregnant women’s third trimester discomforts before and after breathing relaxation techniques and body exercises. This study is in line with Ratna Komala's research, that is, the third trimester pregnant women who participated in yoga exercises regularly totaled 18 respondents (58.1%) feeling comforts as many as 14 respondents (77.8%), and those who experienced discomforts were 4 respondents (22.2%). Meanwhile, 13 respondents (41.9%) irregularly participated in yoga exercise and as many as 3 respondents (23.1%) gained comforts, and 10 respondents (76.9%) who experienced discomfort. The results of statistical tests with chi-square test obtained a p value of 0.004 (p value <0.05), so Ho was rejected, meaning that there was a relationship between yoga exercises and discomforts in the third trimester of pregnancy (11).
CONCLUSION

The limitation of this study is the limited number of respondents due to pandemic, so that the results obtained are not optimal. The implementation was carried out during pandemic so that respondents had to keep wearing masks during the exercises. This may slightly affect the movements they make. Additionally, the author does not have a deep understanding of the issues faced by respondents which can have some effects on discomfort of pregnancy of third trimester. The confounding factors such as family, environment and workplace factors might be influencing the results that can be considered as the limitation of this study.

Consequently, this can reduce the effectiveness of the exercises. That there was a relationship between yoga exercises and discomforts in the third trimester of pregnancy. Discomfort is an unpleasant feeling for physical or mental conditions in third trimester pregnant women, such as back pain, shortness of breath, frequent urination, difficulty sleeping, cramps, edema, varicose veins, heartburn, constipation, constipation, easily tired and tired.

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REFERENCES