



Impact Prenatal Yoga Training on the Length of Labor in Kendari City

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ABSTRACT

Background: Prenatal yoga is a slow movement exercise combined with breathing exercises to maintain the posture of the mother-to-be, calm the soul, and prepare for birth by reducing pain, increasing physical and psychological comfort.

Purpose: To determine the effect of the combination of prenatal yoga on the length of labor at the Nambo Public Health Center.

Method: quasi-experimental with Non-Equivalent Group Design. The sample is pregnant women in the working area of the Nambo Public Health Center, totaling 60 people consisting of 30 treatment groups and 30 control groups. Sampling with purposive sampling technique. Data analysis using t-test.

Conclusion: There is an effect of prenatal yoga practice on the duration of the second stage of labor in the working area of the Nambo Health Center, Kendari City.

KEYWORDS: Childbirth, Length of Stages I and II, Yoga Practice.

BACKGROUND

Childbirth is the process of expelling the products of conception (fetus and placenta) which have been quite months old or can live outside the womb or through other means, with or without assistance. Childbirth is a natural process, but it is not without risk and is a burden for a woman. [1] stated that prolonged labor was the most reported complication of childbirth, namely 41%. The IDHS (2012) states that women with complications during childbirth are reported to experience the most prolonged labor as much as 35% of births, followed by premature rupture of membranes 15%, excessive bleeding 8% and fever as much as 8%.

Every Childbirth has risks to both the mother and fetus, in the form of pain to the risk of death. There are several ways of 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 (2) Pregnancy exercise has several training methods including yoga, Pilates, kegels, hypnotherapy [2].

Pregnant women need to prepare for the birth process because of the physical changes and psychological changes they experience. Yoga is a good way to prepare for labor because the practice focuses on muscle control, breathing techniques, relaxation and peace of mind. Yoga can be started when the pregnancy is 4-6 months old or when the complaints of early pregnancy have disappeared or reduced [3].

Yoga is done routinely once a week, with a duration of 60-90 minutes/session which aims to prepare physically and mentally, so that the birth process can take place normally. Pregnant women who do yoga regularly will benefit from facilitating the delivery process, reducing the incidence of cesarean sections, and reducing the occurrence of fetal distress at the time of delivery [4]. Yoga is also useful in training and mastering breathing techniques, namely training muscle tension, accelerating blood circulation and meeting the oxygen needs of the mother and fetus. The benefits are no less important, namely strengthening and maintaining the elasticity of the abdominal wall muscles, ligaments, pelvic floor muscles and inner thigh muscles, thus the delivery process can take place smoothly. The relaxation process will be perfect by carrying out the necessary contractions and relaxations to overcome the tension or pain during the labor process. One of the exercises to strengthen and maintain elasticity is to strengthen the pelvic floor muscles, the purpose of which is to relax the strong pelvic floor muscles in a relaxed state [5].

Based on a preliminary study at one of the Kendari City Health Centers, the number of mothers giving birth in 2019 was 100 people. who routinely do prenatal yoga, out of 100 mothers giving birth there are 48 people (48.0%) who follow prenatal yoga and 52 people (52%) do not follow prenatal yoga. Of the 48 women who gave birth to prenatal yoga during their labor process, there were 32 people (66.6%) who gave birth normally and 12 people (25%) who gave birth abnormally, and of the 52 women who did not attend prenatal yoga there were 43 people (82.6%) who gave birth normally and 16 people (30.7%) who gave birth abnormally.



Body fitness is very important for women who are pregnant. Exercise during pregnancy is highly recommended every day with the aim of fitness, and facilitate the delivery process. During pregnancy, weight will be put forward or heavier on the front, thereby shifting the center of gravity and the center of stress. Loss of balance, especially in late pregnancy, this can result in back pain. Yoga is a safe exercise to do during pregnancy to overcome discomfort to the mother, one of which is back and waist pain[6]. States that stress can cause several reactions in the body of pregnant women. Anxiety that occurs continuously can cause the sympathetic nerves to stimulate the respiratory work of the lungs to circulate oxygen to the heart, so that the heart strongly pumps blood to flow throughout the body, including that which flows into the fetus through the placenta in the mother's womb. [7]

According to [8]Prenatal yoga is a very good thing to deal with problems during pregnancy. This natural and smooth delivery can be achieved if the uterus contracts well, rhythmically and strongly with the lower uterine segment, cervix, and pelvic floor muscles in a relaxed state, so that the baby easily passes through the birth canal. This state can be achieved with the help of the pregnant woman herself which is a complete calm and relaxation of the body [9]. Some of them are in the form of physical exercises that can be carried out before, during, and after pregnancy. Physical exercises that can be done such as prenatal yoga. Based on the description above, this study aims to determine the effect of prenatal yoga practice on the length of the first and second stages of labor.

METHODS

This type of research is a quasi-experimental study designed by the Non-Equivalent Group [10]. The population in this study were all pregnant women in the working area of the Nambo Public Health Center, Kendari City. The samples in this study were pregnant women in the second trimester (starting at 20 weeks of gestation until before delivery).

Sampling was carried out by consecutive sampling, in every pregnant woman with gestational age 20 weeks who came for a check-up who met the inclusion criteria would be taken as a sample until a large sample of both groups was 60 people consisting of 30 treatment groups and 30 control groups. Data analysis in the form of unvariable analysis and bivariable analysis using t test.

RESULT

1. Characteristics of Respondents

Table 1. Characteristics of Respondents

| Variable | Group | | | | p-value |
|----------------|-------|------|----|------|---------|
| | I | | II | | |
| | n | % | n | % | |
| Age | | | | | |
| < 20 years old | 4 | 44.4 | 5 | 55.6 | 0.302 |
| 20 years old | 21 | 52.5 | 19 | 47.5 | |
| > 35 years old | 5 | 45.5 | 6 | 54.5 | |
| Profession | | | | | 0.341 |
| work | 9 | 56.3 | 7 | 43.8 | |
| Doesn't work | 21 | 47.7 | 23 | 52.3 | |
| Education | | | | | 0.165 |
| Basic | 4 | 50.0 | 4 | 50.0 | |
| Intermediate | 22 | 48.9 | 23 | 51.1 | |
| High | 4 | 57.1 | 3 | 42.9 | |
| Gravity | | | | | 2.455 |
| 2 | 21 | 46.7 | 26 | 55.3 | |
| 3 | 9 | 75.0 | 4 | 25.0 | |

Description :Group I : Prenatal yoga practice; GroupII :no prenatal yoga practice



Consists of age, occupation, education, gravidity. The characteristics of the respondents can be seen in table 1. Table 1 states that in group I and group II most of the respondents aged 20-35 years were 21 people (52.5%) in group I and 19 people (47.5%) in group II, 21 people did not work. people (547.7%) in group I and 23 people (52.3%) in group II, with secondary education (SMU) as many as 22 people (48.9%) in group I and 23 people (51.1%) in group II, gravidity 2 as many as 21 people (46.7%) in group I and 26 people (55.3%) in group II.

The results of the chi square statistical test showed that the mother's age, occupation, education and gravidity ($p > 0.05$). This shows that the condition of the respondent's characteristics can be said to be homogeneous.

a. Labor Time of Stage I in the Working Area of the Nambo Health Center, Kendari City

Table 2. Frequency Distribution of the Stage I of Labor Time in the Working Area of the Nambo Public Health Center, Kendari City

| Variable | Group | N | Mean | SD | Min-Max |
|---------------------|-------|----|------|------|-----------|
| 1st stage of labour | I | 30 | 4,82 | 1.10 | 3.0 – 6.5 |
| | II | 30 | 6,98 | 1.11 | 4.0 – 9.0 |

Description: Group I : Prenatal yoga practice; Group II : no prenatal yoga practice

Based on the results of the study in table 2 that in group I the average length of the first stage of labor was 4.82 hours, the standard deviation was 1.10 with variations in the data between 3.0 – 6.5. In group II the average length of the first stage of labor was 6.98 hours, standard deviation 1.11 with data variations between 4.0 – 9.0. The conclusion in table 2 is that the length of the first stage of labor in group I was faster than in group II.

b. Labor Time of Stage II in the Working Area of the Nambo Public Health Center, Kendari City

Table 3. Frequency Distribution of the Stage II of Labor Time in the Working Area of the Nambo Public Health Center, Kendari City

| Variable | Group | N | Mean | SD | Min-Max |
|--------------------|-------|----|-------|------|---------|
| 2nd stage of labor | I | 30 | 24.13 | 5.07 | 15-30 |
| | II | 30 | 44.93 | 8.56 | 35-60 |

Description : Group I: Prenatal yoga practice; Group II : no prenatal yoga practice

Based on the results of the study in table 3 that in group I the average length of the second stage of labor was 24.13 minutes, the standard deviation was 5.07 with data variations between 15-30. In group II the average length of the first stage of labor was 44.93 minutes, standard deviation 8.56 with data variations between 35-60. The conclusion in table 3 is that the duration of the second stage of labor in group I was faster than in group II.

2. Bivariable Analysis

Bivariable analysis is an analysis conducted to analyze the effect of prenatal yoga practice on the length of the first and second stages of labor in the working area of the Nambo Health Center, Kendari City. Bivariable analysis aims to determine whether there is an influence between the independent variable and the dependent variable. The test used is the Independent t-test. The results of the study on the effect of prenatal yoga practice on the length of the first and second stages of labor in the Nambo Health Center working area, Kendari City, can be seen in Tables 4 and 5.

Table 4. The Effect of Prenatal Yoga Practice on the Length of the Stage I of Labor in the Working Area of the Nambo Public Health Center, Kendari City

| Variable | Group | Hours | n | Mean | SD | Min-Max | t | p-value |
|---------------------|----------|-------|---|------|------|---------|-------|---------|
| 1st stage of labour | I (n=30) | 3 | 4 | 4,82 | 1.10 | 3.0–6.5 | -7.58 | 0.000 |
| | | 3,5 | 1 | | | | | |
| | | 4 | 5 | | | | | |
| | | 4,5 | 2 | | | | | |



| | | | | | | | |
|--------|-----|---|------|------|---------|-------|------|
| | 5 | 9 | | | | | |
| | 5,5 | 2 | | | | | |
| | 6 | 3 | | | | | |
| | 6,5 | 4 | | | | | |
| II | 4 | 1 | 6,98 | 1.11 | 4.0-9.0 | -7.10 | 0.00 |
| (n=30) | 5,5 | 2 | | | | | |
| | 6 | 6 | | | | | |
| | 6,5 | 3 | | | | | |
| | 7 | 5 | | | | | |
| | 7,5 | 4 | | | | | |
| | 8 | 6 | | | | | |
| | 8,5 | 2 | | | | | |
| | 9 | 1 | | | | | |

Description: Group I: Prenatal yoga practice; Group II : No prenatal Yoga practice

The results of the study in table 4 state that in group I the longest duration of labor was at 5 hours as many as 9 people with an average of 4.8 hours, standard deviation 1.1, t value = 7.58, p-value 0.000. The conclusion from table 4 is that there is an effect of prenatal yoga practice on the length of the first stage of labor in the working area of the NamboPublic Health Center, Kendari City.

Table 5. The Effect of Prenatal Yoga Practice on the Length of the Stage II of Labor in the Working Area of the Nambo Health Center, Kendari City

| Variable | Group | Minutes | n | Mean | SD | Min-Max | t | p-value |
|--------------------|-------------|---------|----|-------|------|---------|--------|---------|
| 2nd stage of labor | I (n=30) | 15 | 2 | 24,13 | 5,07 | 15-30 | -11,44 | 0.000 |
| | | 18 | 2 | | | | | |
| | | 20 | 3 | | | | | |
| | | 21 | 4 | | | | | |
| | | 22 | 1 | | | | | |
| | | 23 | 2 | | | | | |
| | | 25 | 7 | | | | | |
| | | 26 | 1 | | | | | |
| | | 27 | 1 | | | | | |
| | | 28 | 1 | | | | | |
| | | 30 | 4 | | | | | |
| | | 35 | 2 | | | | | |
| | | II | 30 | | | | | |
| (n=30) | 31 | 1 | | | | | | |
| | 32 | 1 | | | | | | |
| | 35 | 1 | | | | | | |
| | 40 | 7 | | | | | | |
| | 42 | 1 | | | | | | |
| | 43 | 1 | | | | | | |
| | 45 | 4 | | | | | | |
| | 50 | 4 | | | | | | |
| | 55 | 7 | | | | | | |
| | 60 | 1 | | | | | | |

independent t-test

Description : Group I : Prenatal yoga practice; Group I: no prenatal yoga practice prenatal



The results of the study in table 5 state that in group I the longest duration of the second stage of labor was at 25 minutes as many as 7 people with an average of 24.13 minutes, standard deviation of 5.07, t value = -11.44, p-value 0.000. The conclusion from table 5 is that there is an effect of prenatal yoga practice on the duration of the second stage of labor in the working area of the Nambo Health Center, Kendari City.

DISCUSSION

After processing and analyzing the data, the results of the research on the effect of prenatal yoga practice on the length of the stages I and II of labor in the Nambo Health Center Work Area, Kendari City, namely that there is an effect of prenatal yoga practice on the length of the first and second stages of labor in the Public Health Center Work Area. NamboKendariCity(p=0.000).

The effect of prenatal yoga on the length of the stage I of labor

Pregnancy is one of the stages of life that must be prepared by a mother, in the process of pregnancy physiological changes occur due to an increase in the hormones estrogen and progesterone. The adaptation process to deal with these changes must be prepared from the beginning of pregnancy because it has an important role in pregnancy [11]. During the third trimester, pregnant women who are waiting for birth can experience fear of whether their delivery will go smoothly or cesarean and may cause pressure which make them get experience anxiety [12]

Anxiety will arise because of concerns about a safe birth process for herself and her baby as well as pain during childbirth. Several studies have shown that women who experience anxiety during pregnancy are more likely to experience labor complications. Labor begins with effacement and dilatation of the cervix. In this phase, the contractions are getting longer, stronger and more frequent which can cause anxiety. Anxiety experienced by mothers who will give birth in the first stage can have an impact on increasing adrenaline secretion. One of the effects of adrenaline is the contraction of blood vessels. so that, the oxygen supply to the fetus decreases. Decreased blood flow also causes weak uterine contractions and results in a prolonged labor process [2]

One of the relaxation methods that can be done by pregnant women to reduce anxiety and shorten the time of the first stage of labor is doing prenatal yoga exercises. The results showed that from 60 pregnant women who did prenatal yoga exercises (intervention group) as many as 30 people.

The results of this study are in accordance with the theory which states that prenatal yoga can help reduce stress associated with the birth of a baby, prepare the mother physically and mentally, help strengthen the body of pregnant women and increase flexibility. Yoga is a good way to prepare for labor because the training techniques focus on muscle control, breathing techniques, relaxation, and peace of mind. Yoga plays a role in preparing for the birth of pregnant women due to the physical and psychological changes they experience (13)

Prenatal yoga is a physical movement exercise that can have a positive effect, namely being able to shorten the length of labor, especially when entering the first and second stages or when the mother experiences the initial process of cervical dilatation until complete dilatation during labor [3]

The results of the study [12] stated that prenatal yoga can reduce depression and anxiety in pregnant women while also reducing complaints of back and leg pain. This prenatal yoga practice will reverse the effects of stress involving the parasympathetic part of the central nervous system. As a result, there is a decrease in heart rate, breathing rhythm, blood pressure, muscle tension, metabolic rate and production of stress hormones. Pregnant women will feel relaxed along with decreasing anxiety symptoms so that they can shorten the length of the stage I[13].

The relaxation process will be perfect by carrying out the necessary contractions and relaxations to overcome the tension or pain during the labor process. One of the exercises to strengthen and maintain elasticity is to strengthen the pelvic floor muscles whose use is to relax the strong pelvic floor muscles in a relaxed state. At the time of pushing the muscles will relax actively so that the baby's head will come out easily, thereby facilitating the labor process [4]

Based on table 2, it is known that in group I the average length of the first stage of labor was 4.82 hours, standard deviation 1.10 with data variation between 3.0 – 6.5. In group II the average length of the first stage of labor was 6.98 hours, standard deviation 1.11 with data variations between 4.0 – 9.0. The conclusion in table 2 is that the length of the first stage of labor in group I was faster than in group II. The results of this study are in accordance with the results of the study [14]. Which stated that there were 38 (88.4%) pregnant women who had a normal labor process and fifth pregnant women who had an abnormal labor process.



The results of this study are also in accordance with the results of research [15] which states that there is an effect of a combination of prenatal yoga and pregnancy exercise on the duration of labor in the first stage with a p value of 0.000 less than 0.05. The results of this study are also in accordance with theory [2] which explains that a mother who participates in physical exercise with a pregnant gymnastics instructor will have physical and psychological readiness to face childbirth.

The theory that supports the results of this study is according to [16] which state that normal delivery is a condition that begins spontaneously, is at low risk at the beginning of labor and remains so during the labor process, the baby is born spontaneously in the back of the head percentage at 37-42 weeks of gestation. Complete with after labor, both mother and babies are in good health. Normal first stage labor in primigravida women lasts 6 hours and normal second stage in primigravida < 120 minutes [11]

Based on the results of the study in table 4, it shows that there is an effect of prenatal yoga practice on the length in stage I of labor in the working area of the Nambo Health Center, Kendari City. The results of this study are supported by research from [3]. The results of other studies that support are the results of research from (16) which states that prenatal yoga practice has a positive effect on labor by shortening the length of labor, especially when the mother experiences complete dilatation.

According to [17] pregnant women who do gymnastics in Indonesia are only about 41.8%, whether it's pregnancy exercise or yoga. Doing prenatal yoga will make the muscles of the body develop, including a focus on spinal health, strength and flexibility. Prenatal yoga practice for pregnant women will increase blood circulation and increase nerves so that the supply of nutrients and oxygen is met [12]

In addition, you can also do pregnancy exercises that can strengthen the body's muscular system and joints during the birth of the fetus. Along with the mother's ability to get better at exercising during pregnancy, the mother's self-confidence and the body will be ready to give birth. In addition, the elasticity of the pelvic muscles, ligaments, preventing varicose veins, and improving the respiratory system can be obtained from pregnancy exercise so that factors that complicate the delivery process can be overcome due to the readiness of the mother obtained from pregnancy exercises [16]

Psychological factors will be affect the delivery process where in the labor phase when the mother is more anxious it will increase the intensity of pain and have an effect on the length of labor, but on the contrary if the mother is calm then the pain sensation will decrease and delivery will be faster. If you look closely, actually pregnant exercise movements contain a relaxing effect that can stabilize the emotions of pregnant women [3]

Through prenatal yoga practice pregnant women will be taught how to reduce anxiety and reduce fear by means of physical and mental relaxation, as well as get information that prepares them to experience what will happen during labor and birth. The more often pregnant women do yoga, the lower their anxiety level in facing childbirth and vice versa if they never do yoga, the anxiety of pregnant women will increase [12].

The effect of prenatal yoga on the length of the stage II of labor

Factors that influence the labor process include power factor (force), passage factor (birth canal), passenger factor (fetus and placenta), maternal psychological factors, helping factors [16]

Stage II should not exceed 2 hours in primigravida and 1 hour in multigravida. Labor followed by the occurrence of a prolonged period of time in the second stage has an impact on the mother and fetus. The impact of this long stage II causes high morbidity in the mother and can even be a cause of mortality in the mother and fetus due to inadequate handling of the mother in labor with the long second stage. [5]

Based on the results of the study in tables 3 and 5, it is stated that in group I the average length of the second stage of labor was 24.13 minutes with a standard deviation of 5.07 with data variations between 15-30. In group II the average length of the first stage of labor was 44.93 minutes, standard deviation 8.56 with data variations between 35-60. The conclusion in table 3 about the duration of stage II of labor in the intervention group was faster than in the control group.

In group I, the duration of the second stage of labor at 25 minutes was 7 people with an average of 24.13 minutes, standard deviation of 15.07, t value = -11.44, p-value 0.000. The conclusion from table 5 is that there is an effect of prenatal yoga practice on the duration of the second stage of labor in the working area of the Nambo Health Center, Kendari City.

The results of this study are in line with research (20) which states that there is an effect of third trimester prenatal yoga exercise on the duration of the second stage of labor in primigravida mothers in the working area of Central Metro Health Center, Metro City, Lampung Province in 2018 with p-value = 0.000. The results of Sarwendah's research, (2014) stated that there was a relationship between prenatal yoga and the delivery process for women giving birth at BPM HartiMustaqimSumowono,



SemarangTatun Regency 2014. The stage II of labor was in a negative correlation direction, where the more yoga exercises, the shorter the stage II of labor.

Yoga is also useful in practicing and mastering breathing techniques that play an important role during pregnancy and childbirth. At the time of pushing the muscles will relax actively so that the baby's head will come out easily, thereby facilitating the delivery process. The main factors that affect the labor process include power, passage (the state of the pelvis) and the passanger (the state of the fetus). Mothers who have good physical strength will find it easier to give birth, a large pelvis is able to carry out normal delivery, besides the condition of the fetus in the uterus also affects the delivery process. The usefulness of basic breathing exercises is to train tension, accelerate blood circulation and meet the oxygen needs of the mother and fetus [3]

The benefits are no less important, namely strengthening and maintaining the elasticity of the abdominal wall muscles, ligaments, pelvic floor muscles and inner thigh muscles, thereby controlling the labor process. The relaxation process will be perfect by carrying out the necessary contractions and relaxations to overcome the tension or pain during the labor process. One of the exercises to strengthen and maintain elasticity is the exercise to strengthen the pelvic floor muscles, the use of which is to relax the strong pelvic floor muscles in a relaxed state. At the time of pushing, the muscles will relax actively so that the baby's head will come out easily, thereby facilitating the labor process [9]

CONCLUSION

The duration of the stages I and II of labor in the control group was longer than the intervention group, so there was an effect of prenatal yoga practice on the length of the first and second stages of labor in the working area of the Nambo Health Center, Kendari City. Therefore, prenatal Yoga practice will be able to provide mental readiness, help focus the mind, provide calm, and comfort for every pregnant woman. In addition, with prenatal yoga the muscles associated with childbirth will be trained so that the mother's delivery process will run smoothly. For this reason, health workers (midwives) should always motivate pregnant women to routinely do prenatal yoga from the second trimester of pregnancy, which can be done through the establishment of antenatal classes at the Public health centeror at the Midwife Independent Practice.

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