The Application of Yoga Pranayama and Gym Ball Exercise on Labor Pain During Active Phase at Pmb Desa Blahkiuh, Abiansemal, Badung

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Abstract
Pain Labor is a physiological and individual experience. The cause of pain in labor is a combination of ischemia (hypoxia) the muscles of the uterus and stretching that occurs in the lower segment of the uterus (then the cervix). Non-pharmacological efforts that can be done in reducing pain in the mother in the face of labor are through the Application of Yoga Pranayama and Gym Ball Exercise. The purpose of this study was to determine the effect of the application of Yoga Pranayama and Ball Exercise Gym on Labor Pain Active Phase in PMB Blahkiuh Village, Abiansemal, Badung. This research method used the Quasi Experimental Design study with Nonequivalent Control Group Design. The approach used is a prospective approach. Sample consisted 40 respondents. Respondent selected by purposive sampling and divide into control group and intervention group. Respondents in intervention group were given Yoga Pranayama and Gym Ball Exercise, while in the control group respondents were given conventional therapy. The data were analyzed using the Paired T-test to compare the results of the pre-test and post-test, and to compare intervention and control groups use Independent T-Test. Based on statistical tests obtained all p values <0.05 means that there is a significant difference between pain labor in the control and intervention group, so it can be interpreted that pain scale in intervention group is lower than control group. The conclusion of this study was there’s influence on the application of Yoga Pranayama and the Ball Exercise Gym on Labor Pain in the Active Phase in PMB Blahkiuh Village, Abiansemal, Badung.

Index Terms— labor pain, active phase, yoga pranayama, gym ball exercise

I. INTRODUCTION
Childbirth is a physiological process, in which the result of conception (fetus and placenta) that can live outside begins with uterine contractions, cervical thinning and opening, birth of the baby and placenta that goes through another path (stomach), with the help of help or without help (mother's own strength). Several theories have been put forward by experts regarding childbirth caused by uterine contractions, which will cause the opening and thinning of the cervix, until the discharge of the fetus and placenta. These contractions cause pain that makes the mother feel uncomfortable, anxious, afraid, which in the end the pain felt will be stronger.

First-stage labor pain is cervical dilatation and lower uterine segment with advanced distension, stretching, and trauma to muscle fibers and ligaments. Factors causing labor pain are: a). reduced oxygen supply to the uterine muscle (labor pain becomes greater if the interval between contractions is short, so that the supply of oxygen to the uterine muscle has not fully recovered), b). stretching of the
yoga and Gym Ball Exercise. The questionnaires were filled in at least (O1), (O3) and after (O2), (O4) treatment in the treatment and control groups. The difference between (O) and (O2) is assumed to be the effect of conventional therapy in the women given, compared with (O3) and (O4) given by Yoga Pranayama and Gym Ball Exercise. The approach used is a prospective approach. In this case Pranayama Yoga and Gym Ball Exercise affect labor pain in the First Stage of Active phase. The study was conducted by researchers. The first thing to do was to measure labor pain when I was active in 20 mothers from the control group and 20 mothers from the treatment group using NRS (Numeric Rating Scale). NRS is a horizontal line with a scale of numbers ranging from 0 to 10, the number 0 indicates no pain, 1-3 minor injuries, 4-6 moderate pain, 7-9 severe recovery, able to respond to challenges, can indicate the location of treatment, unable to describe, cannot be overcome by using transfer, deep breathing, and distraction), and 10 severe injuries. After that, the yoga session is given a yoga intervention every time the mother feels a contraction and the gym ball exercises the entire contraction. The control group only guided to take a deep breath during contractions, and pulled the contractions. After treatment, labor pain measurements were performed again using NRS in both treatment and control groups.

Statistics are used to analyze data by describing or describing data on Pranayama Yoga and Gym Ball Exercise on labor pain in the active phase I phase without making conclusions that apply to the population. To measure the difference in labor pain in the first phase of the active phase of the pre-test and post-test sample using the Paired Sample-t Test because the data is normally distributed. This study has passed the ethical test conducted at the STIKES Bina Usada Bali health research ethics commission (no. 184/EA/KEPK-BUB-2019).

III. RESULT

A. Demographic Characteristic

The total respondents who participated in this study were 40 people. Based on age characteristics, 20% are classified as mothers who are too young, 60% are of healthy reproductive age, and 20% are classified as mothers who are too old. Based on parity characteristics, 40% of mothers are primigravida and 60% are multigravida. 70% have a moderate level of education and 30% have a high level of education.

B. Pain Levels in the Treatment and Control Groups

Table 1 showed that in the control group there was a decrease in the mean pain value of 6.9 before being given treatment in the form of taking a deep breath during contraction, and resting between contractions and dropping...
to 5.75 after being given later treatment from the results of different tests before and after treatment in the control group with using the t test, p values <0.05 (0.02) showed that there were significant differences in the level of pain before and after treatment in the control group.

Table 1. Distribution of pain levels before and after the administration of conventional therapy in the control group.

| Variable | Statistic | Pre | Post | t count | p value |
|----------|-----------|-----|------|---------|---------|
| Pain     | Mean      | 6.90| 5.75 | 2,382   | 0.02    |
|          | SD        | 1.80| 1.07 |         |         |

Table 2 showed that in the treatment group there was a decrease in the average value of pain that is 6.95 before being given treatment in the form of Yoga Pranayama and Gym Ball Exercise and dropped to 4.6 after being given treatment, then from the results of different tests before and after treatment in the control group using the t test p value obtained from the value of p = 0.01 (P <0.05) so that there are differences in the level of labor pain before and after being given Yoga Pranayama and Gym Ball Exercise in the Treatment Group.

Table 2. Distribution of Pain Levels Before and After Given Pranayama Yoga and Gym Ball Exercise in the Treatment Group.

| Variable | Statistic | Pre | Post | t count | p value |
|----------|-----------|-----|------|---------|---------|
| Pain     | Mean      | 6.95| 4.60 | 4,009   | 0.01   |
|          | SD        | 1.731| 1.231|         |         |

Table 3 showed t test to analyze differences in pain levels in the treatment and control groups, p values <0.05 (0.03) means that there are significant differences in labor pain in the control and treatment groups, so it can be interpreted that the pain scores in the treatment group are lower than those in the treatment control group.

Table 3 t value for comparing treatment and control groups in pain level testing.

| Variable | Groups | T count | P value |
|----------|--------|---------|---------|
|          | Control| Treatment |         |
| Pain     | X ± SD | X ± SD   | 3,153   | 0.03    |
|          | 5.75±1.070| 4.60±1.231|         |         |

IV. DISCUSSION

Labor pain is pain which results from movements (contractions) of the uterus that function subjectively, rhythmically with an increase in the frequency and severity used to expel the baby. The intensity of pain is proportional to the contraction pressure and the pressure that occurs, healing of uterine pressure in the form of baby's dilated pressure on the pelvic structure followed by stretch and tear of the birth canal.

Labor pain is unique and different for each individual because there is no difference with the physical condition, but also related to the psychological condition of the mother at the time of delivery. Psychological conditions that cause excessive fear and anxiety will cause or worsen physical problems.

In the results of this study it was found that there was a significant difference between labor pain in the group given pranayama yoga and gym ball exercise with the control group as evidenced by the p value <0.05 (0.03). This is in line with the results of similar studies previously conducted [6][7][8].

Yoga as a supportive intervention that is beneficial for various diseases associated with pain. Healthy individuals with labor pain, the practice of yoga has a very strong effect [9]. Yoga breathing techniques can strengthen the respiratory system, calm the nervous system, help reduce or eliminate various types of addictions and can strengthen the immune system. Yoga breathing plays an important role in the body's metabolism, namely the body's process of breaking down nutrients. The real benefit that can be felt from this pranayama yoga practice is that it reduces fatigue, thoughts and emotions become calm [4].

The mechanism of yoga breathing exercises for physical changes that occur in the body begins with the creation of an atmosphere of conscious relaxation that systematically leads to a deep relaxed state. The creation of an atmosphere of relaxation will eliminate the sounds in the mind so that the body will be able to release muscle tension. When the body begins to relax, breathing becomes slow and deep, so that the respiratory system can rest. The slowing of this breathing rhythm will make the heart rate slower and have a positive effect on the entire circulatory system and the heart to rest and undergo a rejuvenation process. The sympathetic nervous system that is always ready for action receives messages to relax while the parasympathetic nervous system responds to relaxation. In addition to sympathetic nerves, messages for relaxation are also received by the endocrine glands which are responsible for most emotional and physical states[4].

The exercise of gym ball exercises can help reduce the scale of pain felt by the mother because the mother feels relaxed and relaxed so that it can reduce the tension due to the expenditure of endorphine [8]. Relaxation obtained from birth ball exercises is one of the non-pharmacological pain controllers. The use of relaxation techniques and breathing exercises preparation for labor lies in the physiology of the autonomic nerve, where the autonomic nerve is a peripheral nervous system that maintains homeostasis in the individual's internal environment so that the muscles become less tired so that the mother can reduce her pain by reducing pain sensations and control reactions to pain [7].

V. CONCLUSION

This study found that there’s influence on the application of Yoga Pranayama and the Ball Exercise Gym on Labor Pain in the Active Phase in PMB Blahkihu Village, Abiansemal, Badung. The results of this study can provide information health care workers who provide care to
maternity women in reducing pain during delivery process.

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