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The Influence of Breathing Ball Technique on Length of Labor in Phase I Active in Independent Practice, Midwifery Sriwati

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Abstract

First stage or first stage of opening takes place from zero opening (0 cm) to complete opening (10 cm). First stage for primigravida lasts 12 hours, while multigravida lasts for 8 hours. Based on the Friedman curve, calculated opening for primigravida 1 cm/hour and opening for multigravida 2 cm/hour. Efforts to determine the speed of labor for the first time were given a breathing ball technique. The purpose of this research is to know the effect of breathing ball on the duration of the first phase of active labor in PMB Sriwati.

This type of research is a pre-experimental study with the one-shot case study. The total sample is 30 respondents, 15 primigravida respondents, and 15 multigravida respondents. Data were analyzed using the Mann-Whitney test. The intervention was given during the first stage of labor during the active phase for 32 minutes, every 32 minutes there were 4 stages of breathing ball, the duration of the duration was 8 minutes, each mother could rest whenever she wanted.

The results of the analysis of the breathing ball technique on the duration of labor in the first phase of labor in the active phase of the p-value of 0,000 <0.05.

The conclusion was that there was a significant influence on the breathing ball technique on the length of labor in the active phase I in the Sriwati Independent Practice Midwife. For midwives, especially in the Independent Practice of Midwife Sriwati to train pregnant women from an early age in performing breathing ball techniques by doing exercises in classes of pregnant women every 2x in a week, and this research can be developed with pain variables in the first phase of active mothers.

Keywords: *Breathing ball, length of labor, active phase*

Introduction

Childbirth is the process of expulsion from the conception that can live from inside the uterus to the outside world. Labor includes a physiological process that allows a series of major changes in the mother to give birth to the fetus from the birth canal(1).

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The first stage or first stage of opening takes place from zero openings (0 cm) to complete opening (10 cm). The first stage for primigravida lasts 12 hours, while multigravida lasts for 8 hours. Based on the Friedman curve, calculated primigravida opening 1 cm/hour and opening multigravida 2 cm/hour. For the latent phase from opening 0 to opening 3 cm and the active phase starting from opening 4 cm to 10 cm(2).

Pain that may be felt by women during childbirth is quite varied, such as how they respond. For this reason, the labor environment and the support provided by professionals and colleagues, as well as the methods

used to relieve pain, are important because they can influence reactions during labor and play an important role in the development of symptoms of traumatic stress after childbirth[3]which targeted all women scheduled to give birth at Akershus University Hospital in Norway. Questionnaires were given at three different stages: from pregnancy weeks 17 to 32, from the maternity ward, and from 8 weeks postpartum. Data were also obtained from the hospital's birth record. Using structural equation modeling, a prospective mediation model was tested. Results: Posttraumatic stress symptoms were significantly related to both labor pain (r = 0.23. While labor pain is a normal process that can cause physiological and psychological stress which is common where 90% of women are accompanied by pain[4]. Breathing ball is one of the non-pharmacological pain relief methods to help mothers cope with labor[5].

Non-pharmacological methods can relieve pain sensations in a number of ways, by promoting women's well-being, comfort, and sense of control in labor and Breathing ball is one method to help mothers cope with labor and delivery[6] .

According to Surtiningsih et al, (2016) respondents, 40 primigravida mothers with a gestational age of 34 to 35 weeks were divided into 2 intervention groups with breathing ball techniques for 6 meetings and control groups. This technique is very effective in shortening the length of the active phase I with a p-value 0,000 <α 0.05 and an effect size of 0.6 is also effective in shortening the second time with a p-value of 0.007 <α 0.05 with an effect size of 0.43. The results of the study concluded that breathing ball effectively shortens the length of the first and second stages of labor in primigravidas[7].

According to Renaningtyas, et al (2013) the results of the study showed that there was a relationship between pelvic rocking implementation and breathing ball on the duration of I. X counted> X table (13,333> 9,488), and p-value (0.01 <0.05) by doing pelvic rocking with a breathing ball is able to facilitate labor, especially in the first stage and help mothers experience the time of delivery when the first[8]. Research purposes was knowing the effect of the breathing ball technique on the active time phase I in PBM Sriwati.

Materials and Method

This type of research is a pre-experimental study with posttest only design or also called the one-shot case study. This design treatment or intervention has been carried out, then carried out measurements (observation) or posttest (02). The sample in this study was normal maternity mothers in gestational age 37 to 42 weeks when I active phase of 15 respondents in the primigravida group and 15 respondents in the multigravida group at the Independent Sriwati Midwifery Practice.

Research Results

Univariate Analysis Results

Table 1 Distribution of Respondents Based on the characteristics of the breathing ball technique at BPM Sriwati, 2019

Characteristics	f	%
Parity		
Primigravida	15	50
Multigrafida	15	50
Gestational age		
38 week	6	20.0
39 week	16	53.3
40 week	6	20.0
41 week	2	6.7

Source: Primary Data 2019

Table 1 shows that the number of primigravida and multigravida each was 15 respondents, while the characteristics of respondents based on gestational age were dominated by 39 weeks 16 (53.3%).

The results of the analysis to determine the distribution of respondents based on parity of length of labor in first phase active delivery mothers with breathing ball techniques can be seen in the following table:

Table 2 Distribution of Respondents Based on parity with the length of labor with breathing ball techniques at BPM Sriwati in 2019

Parity	Breathing ball technique			
	fast labor		Prolonged labor	
	f	%	f	%
Primigravida	13	43.3	2	6.6
Multigravida	15	100.00	0	0

Table 2 shows that the distribution of respondents based on parity, the length of labor in multigravida, there were 100% of rapid labor, while the duration of labor in primigravida, there were 2 (6.6%) of respondents who experienced long labor.

Bivariate Analysis Results

The results of the analysis to find out the length of labor by giving breathing technique to first-phase active mothers can be seen in the following table:

Table 3 distribution of labor time in primigravida and multigravida with breathing ball techniques in PMB Sriwati, 2019

Variable		**n**	**Min.**	**Max.**	Mean Rank
Duration of Childbirth	Primigravida	15	2,25	7,42	4,0447
	Multigravida	15	2,15	3,33	2,9553
Z					-5,236
Asymp. Sig. (2-tailed)					0.000

Table 3 shows that the distribution of primigravida length of labor by breathing ball technique using the Mann-Whitney test obtained a minimum time of delivery time is 2.25 hours and a maximum length of 7.42 hours with an average value of -4.0447, while in multigravida obtained the minimum length of labor is 2.15 hours and the maximum length of labor is 3.33 hours with an average value of -2.9557 with a p-value = 0.000 <0.05. Therefore, the result is that Ha is accepted and Ho is rejected, so it can be concluded that there is an effect of giving breathing ball technique to the duration of the first phase of active labor in Sriwati's PMB.

Discussion

The Effect of Breathing Ball Technique on the Length of the First Stage of Labor in Active Phase in the Independent Practice of Midwife Sriwati

Based on the characteristics of the respondent's average gestational age of 38-41 weeks, the highest number of respondents at 39 weeks gestational age. The parity group in primigravida and multigravida each of 15 respondents. WHO[9] concludes that there is no evidence to support the supine position during the first stage of labor. Based on current findings, it is recommended that women in low-risk labor should be informed of the benefits of an upright position, and be encouraged and assisted to take whatever position they choose[10] while supine positions on an inclusive back should be avoided[11].

There are several potential mechanisms to explain why using a breathing ball can reduce labor pain. The first endogenous mechanism is the gate control theory, which consists of applying light massage to the affected part. This mechanism acts primarily on the sensory component of pain, by blocking part of the nociceptive message in the spine. Based on this theory, breathing ball can provide support for the perineum without putting significant pressure[12];[13];[14] .

This study concludes that clinical implementation of the use of balls during labor can be an effective non-pharmacological intervention in reducing pain perception and improving the experience of childbirth[12].

The results of breathing ball technique analysis on the duration of labor in the first phase of labor in the active phase based on the Mann-Whitney test obtained a p-value of 0,000 <0.05 so that the results were obtained that Ha was accepted and H0 was rejected. The results of this analysis can be concluded that there is a significant influence on the breathing ball technique on the length of labor in the first stage of labor in the active phase[8].

The results of this study are in line with the research of Renaningtyas et al. (2013) in a study entitled "The Relationship of Pelvic Rocking Implementation with Breathing Ball to the Length of First Time in Maternity Mothers", this shows that the breathing ball technique

can accelerate Kala I delivery compared to only given standard treatment with p-value (0.01 <0.05) Renaningtyas et al, (2013) explains this breathing ball technique is effective because it increases the relaxation of pelvic muscles so that labor is easy and fast[8].

Likewise the results of research by Tavooni, 2011 suggested that the mean pain score in the Breathing ball group was significantly lower than the average pain score in the control group (P <0.05), but there were no significant differences in the two groups between the duration active phase labor or the interval between uterine contractions (P <0.05)[15].

Research conducted by Zaky at the Labor and Delivery Unit at El-Shatby University Maternity Hospital in Alexandria shows that there is a statistically positive correlation between the effects of birth ball pelvic rocking exercise on the progress of labor in terms of decreasing the interval and increasing the duration and frequency of uterine contractions, cervical dilatation, and decreased fetal head in the study group. While the control group showed little progress with statically significant differences (<0,0001) *. In addition, the control group expressed more pain scores, spending longer duration from the 1st, 2nd and 3rd stage of labor than the study group. The researchers recommend that practicing with birth ball pelvic rocking exercise is recommended as one of the significant modalities to improve labor progress, manage pain, and improve self-control and gain a more satisfying maternity experience[16]cervical dilatation and fetal head descent/fifth among the study group. While the control group showed less progress with highly statically significant differences (<0.0001.

The results of data collection conducted in the field found that out of 30 respondents there were 2 respondents who had experienced long labor, this is because respondents were not active in doing breathing ball techniques by only doing 1 round of this technique.

The breathing ball technique can help the mother in an upright position, staying upright when in labor will allow the uterus to work as efficiently as possible making the pelvic plane wider and open. In other words, it can stimulate dilatation and widen the lower door of the pelvis, sit straight on the ball then the gravity of the earth will help the fetus or the lowest part of the fetus to immediately descend into the pelvis[17].

Another study according to Surtiningsih et al, (2016) entitled The Effectiveness of pelvic rocking exercises on the length of time of delivery in primiparous mothers, respondents 40 primigravida mothers with a gestational age of 34 to 35 weeks. The results showed that the breathing ball technique was effective in shortening the length of the active phase I with a side effect of 0.6 was also effective in shortening the length of the second stage with an effect size of 0.43. From the results of the study concluded that breathing ball effectively shortens the length of the first and second stages of labor in primigravidas[7].

Breathing ball has been introduced to midwifery settings to facilitate mobilization techniques in women giving birth. This study reports an evaluation of the results of the use of breathing ball in the intrapartum period. The relationship between duration of use and perception of pain intensity has been explored. Although not statistically significant, the clinical significance of a high level of satisfaction must be recognized. Results including the duration of the first and second stages of labor and the way labor were also evaluated[11].

This research has explained the effects of pelvic rocking exercises while sitting on Breathing ball during childbirth. His findings indicate that Breathing ball can reduce pain and, increase progress and shorten the stage of labor[16]cervical dilatation and fetal head descent/fifth among the study group. While the control group showed less progress with highly statically significant differences (<0.0001.

Obstacles when researching when asking for mother's approval to be a respondent, some of the mothers are not willing to be respondents because they are afraid of the birth ball that researchers use as material for research, there are also mothers who do not want to be respondents because of cultural factors, mothers assume their grandmothers also never do anything like that but during childbirth is fine.

Conclusions and Suggestions

Based on the results of this study, it can be concluded that there is an effect of breathing ball technique on the duration of labor in the first phase of the active maternal phase in the Independent Practice of Sriwati Midwife.

Research needs to be done with more samples and places.

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Conflict of Interest – Nil

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