



THE RELATIONSHIP BETWEEN GYMBALL USE AND THE DURATION OF ACTIVE PHASE 1 IN PRIMIGRAVIDA MOTHERS

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ABSTRACT

Prolonged labour can cause death, infection, exhaustion, ehydration, and postpartum hemorrhage. In a long fetus, there is a risk of causing infection, injury and asphyxia which can increase infant mortality. prolonged labour can be prevented by doing complementary care, relaxation techniques that relieve prolonged labour and provide healthy childbirth outcomes, yoga, pregnancy exercises and gymball techniques. The purpose of this study is to analyze the effectiveness of gym ball on the duration of 1 active phase of primigravida labor. This type of quasy experimental research was conducted at Pertamina Hospital, Tarakan City, from April to June 2024. The sample in this study was 20 respondents using purposive sampling. The interventions given were gym balls on pelvic rocking movement patterns, rebozo, and child's pose techniques. Bivariate analysis using the chi square test. Multivariate analysis in the form of multiple logistic regression. The results of bivariate analysis showed that there was a significant relationship between the gym ball group and the duration of 1 active phase. This is shown by a p value of $0.020 < 0.05$.

Keywords: active phase; gymball; labour

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INTRODUCTION

The Indonesia government has made efforts to reduce maternal mortality, but the Maternal Mortality Rate (AKI) is still above 200. Over five years, 17% of deliveries were recorded by caesarean section, resulting from complications of long labor as much as 41% of the total causes of cesarean section experienced by women aged 15-49 years. In general, childbirth can be done naturally without medical intervention. The lowering of the fetal head will affect the opening of the cervix and the start of the fetal expulsion process, in addition to that the lowering of the head can increase and support the dilation of the pelvis. (Apriani, 2020)(Kemenkes, 2017)(Delgado, 2019)Prolonged labor can cause bleeding, shock, and death in the mother and can cause fetal emergency, asphyxia, and caput succedaneum in the baby. Factors that can affect the length of labor are: maternal characteristics, body mass index, maternal age, parity, administration of oxytocin, epidural analgetic . Meanwhile, another factor that affects the length of labor is the condition of the pelvis. Pelvic deformities can hinder the labor process. The location and presentation of the fetus is an important part of the delivery process. Various efforts are made by health workers to speed up childbirth without causing an emergency, one of which is gymball or birth ball gymnastics. (Wigati, 2021) (Mutoharoh, 2020)(Desyanti, 2023)(Wigati, 2021)(Desyanti, 2023)

Birth Ball or gym ball is a physical therapy ball that helps the delivery process and can be used in various positions, namely sitting on the ball and shaking the pelvis which is believed to provide comfort and speed up the delivery time. The use of gym balls during pregnancy can

stimulate the postural reflexes and take care of the muscles that support the spine . Gym ball can also be done by rocking the pelvis back and forth. Gym ball exercises can work the waist and buttocks muscles and help lower the baby's head into the pelvic cavity of the birth canal.(Silalahi, 2023)(Solihah, 2023)(Salamah, 2022) During childbirth in the first period, gym ball training by sitting on the ball then slowly swinging and shaking the hips forward and backward, right and left sides, and in a circle. This exercise movement is beneficial to help uterine contractions more effectively and accelerate the descent of the baby through the pelvis. The pressure of the baby's head on the cervix remains constant when the mother gives birth in an upright position so that cervical dilation becomes faster. The ligaments of the pelvic muscles become relaxed, and the pelvic area becomes wider making it easier for the baby to descend to the pelvic floor.(Sumarni, 2022)(Mutoharoh, 2020). The purpose of this study is to analyze the effectiveness of gym ball on the duration of 1 active phase of primigravida delivery at Pertamina Tarakan Hospital - North Kalimantan

METHOD

This study uses a pseudo-experimental type of research. The research was conducted at Pertamina Hospital in Tarakan City from April to June 2024. The population in this study is all inpartu mothers at Pertamina Hospital Tarakan City between April and June 2024 who meet the inclusion criteria, namely: 1. This delivery is the first pregnancy (primigravida). 2. No emergency in the mother and fetus. 3. Entering the active phase at the 1st stage of labor and 4. Be willing to be a respondent. The sample technique was purposive sampling and in this study sample was 20 respondents. The interventions given were gym balls on pelvic rocking movement patterns, rebozo, and child's pose techniques. Each Movement is performed for 5 – 10 minutes with a duration for rest every 30 minutes and an opening evaluation every 4 hours or if needed. The comparison in this group is normal care for pregnant women during active phase 1 according to normal childbirth care. Data was collected by midwives by writing the partograph results in the master table.Univariate analysis was used to determine the frequency distribution of characteristics such as age, occupation and outcome in the form of length of time of 1 active phase divided into categories. Bivariate analysis was carried out to see the effectiveness of gym ball on the duration of 1 active phase in primigravida mothers using the chi square test. Multivariate analysis in the form of multiple logistic regression was used to determine the effects of variables and characteristics that may affect the results because the design of this study was a pseudo-experiment.

RESULTS

Table 1.
Respondent's work

Category	f	%
Not working (Housewives)	16	80
Work	4	20

Based on the results of the study, almost all respondents were housewives, namely 16 people (80%) and only 4 people worked as civil servants and doctors.

Table 2.
Age of respondents

Category	f	%
20 – 25 years old	5	25
26 – 30 years old	15	75

The results of the study in table 2 show that all respondents are women in a healthy reproductive age, which is between 20 to 30 years old, with the largest number in the age range of 26-30 years as many as 15 people (75%).

Table 3.
the duration of 1st phase

Category	f	%
> 6 hours	12	60
≤ 6 hours	8	40

Table 3 shows that most of the respondents took more than 6 hours to complete the active phase in phase 1 and enter phase 2, namely 12 people (60%), although the number of respondents who completed phase 1 of the active phase of less than 6 hours was also quite large, namely 8 people (40%).

Table 4.
Cross-tabulation and Chi Square Analysis

		Group				Total		p-value
		Gymball	%	Control	%	f	%	
The duration	> 6 hours	3	15	9	45	12	60	0.020
	≤ 6 hours	7	35	1	5	8	40	
	Total	10	50	10	50	20	100	

The results of bivariate analysis in table 4 show that there is a significant relationship between the gym ball group and the duration of the 1 active phase. This is shown by a p value of 0.020 < 0.05.

Table 5.
Multivariate Analysis

Variables in the equation	b	95% Confident interval		P value
		Lower limit	Upper limit	
Constant	0.62	1.53	2.09	0.609
Age	0.51	0.12	22.189	0.698
Work	-0.38	0.04	10.321	0.786
Uses of gymball	-3.21	0.03	0.556	0.016
Adjuster R2 = 46%				

The multivariate analysis in table 5 shows that the use of gymball is a variable that affects the decrease in time in phase 1. This is shown by the aOR value of -3.2 which means that the use of gymball will reduce the time during 1 active phase up to 3 times compared to not using gymball and this result is statistically significant (p value 0.016 < 0.05). The R² value showed that gymball use, age, and work were only able to predict 46% of the causes of time acceleration during the 1st active phase.

DISCUSSION

The results of the multiple logistic regression test showed that the use of gymball was a variable that affected the decrease in time in phase 1. This is shown by the aOR value of -3.2 which means that the use of gymball will reduce the time during 1 active phase up to 3 times compared to not using gymball and this result is statistically significant (p value 0.016 < 0.05). The R² value showed that gymball use, age, and work were only able to predict 46% of the causes of time acceleration during the 1st active phase. The results of this study are consistent with the gym ball technique with pelvic rocking can accelerate the duration of labor in the first active phase by 52.61% with a p value of 0.001, which means that there is a relationship between the implementation of Pelvic Rocking with Gym Ball and the duration of Phase I in Childbirth. By doing pelvic rocking with gym balls can facilitate labor and help mothers experience a normal period I labor time. The pressure from the baby's head on the cervix remains constant when the mother gives birth in an upright position, so that cervical dilation (opening) can occur faster, in addition to the wider pelvic area, making it easier for the baby's head to descend to the pelvic floor (Salamah, 2022). Sitting on the ball is the most popular position because it makes the respondent comfortable and in shaking the mother's

pelvis becomes easier. By sitting, the mother does not feel tired easily, but the effect of sitting like a mother standing, the graffiti style can still help the baby's head drop but the mother does not feel tired because it carries a burden on the stomach (Yuriati, 2020). So that this position is able to make the mother last longer to do pelvic rocking than other positions (Ekasari, 2022).

The results of a study that reviewed the benefits of gym ball pelvic rocking on childbirth were also reported by (Rakizah, 2023) that the use of gym balls can help speed up childbirth because in its mechanism gym balls help the pelvis open until there is an additional space of about 30%, gym balls can also increase blood flow to the uterus, placenta, and baby (Widiastini & Karuniadi, 2020). Reduces pressure, creates a sense of comfort in the knee and ankle area. Provides back pressure in the perineal area and also the thighs. Through the force of gravity, the birthball also pushes the baby to descend so that the delivery process becomes faster (Prananingrum, 2015).

Gym ball or birth ball is a simple physical therapy or exercise using a ball (Anandita et al, 2023). The word birth ball can be interpreted when exercises using balls are applied to pregnant women, mothers who give birth and mothers who give birth (Annisya, 2020). One of the movements is to sit on the ball and rock, making it comfortable and helping the progress of labor by using gravity while increasing the release of endorphins because the elasticity and curvature of the ball stimulate the receptors in the pelvis that are responsible for secreting endorphins (Kurniawati, 2017). Sitting and swaying movements will make the mother feel comfortable and help the process of opening and widening the pelvic bones so that there is faster progress in labor and opening (Utami, 2020) Mobility training from the mother is very necessary to keep the ligaments loose, relaxed, tension-free and more space for the baby to descend the pelvis so that the length of labor in the first and second stages can be shortened by doing exercises / body work (Surtiningsih, 2018; Susiloretni KA, 2017). Movement in Pelvic Rocking by rocking the pelvis forward, backward, left and right sides can train the muscles of the waist, hips and help lower the baby's head to enter the pelvic cavity towards the road. Therefore, Pelvic Rocking is necessary for mothers in labor to reduce pain during childbirth and improve the quality of life of mothers and their babies (Astuti, 2021).

Pelvic Rocking and Gym Ball is to enlarge the size of the pelvic cavity by swinging the pelvis with the ball and slowly swinging the hips forward and backward (Lestari Puji et al, 2021), right, left, and circular sides. In other words, it can stimulate dilation and widen the pelvic exit. Sitting upright on the ball, the earth's gravity will help the fetus or the lowest part of the fetus immediately descend to the pelvis so that the delivery time is shorter or shorter (Sriwenda D, 2017). The use of a gymball is effective in accelerating complete opening, this mechanism may occur due to pelvic rocking movements that can stimulate the descent of the fetal head and stretching of the pelvic muscles.

CONCLUSION

There was a significant relationship between the gym ball group and the duration of 1 active phase. This is shown by a p value of $0.020 < 0.05$.

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