

Pelvic Rocking Exercise on The Length of The First Stage of Labor

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Abstract:

In general, there are still many women in labor who experience a prolonged first stage. Prolonged labor is one of the causes of increased mortality and morbidity in the mother and fetus. There are various methods that can be used to speed up the progress of labor, one of which is using non-pharmacological methods, namely exercise pelvic rocking exercise. The aim of this research is to find out the differences pelvic rocking exercise on the length of the first stage of labor between the experimental group and the control group. Research methods quasi-experiment design. This uses a research design posttest only design with control groups. The population in this study were primigravidarum mothers. The sample in this study consisted of 30 respondents who were divided into 2 groups, namely 15 respondents in the experimental group and 15 respondents in the control group. Research results from independent t-test It is known that the significance value is $0.000 < 0.05$, so it can be concluded that H_0 is rejected and H_a is accepted, which means there is a difference in the length of labor between the experimental group and the control group. pelvic rocking exercise on the length of the first stage of labor. Conclusion there is influence pelvic rocking exercise on the duration of the first stage of labor at the Binuangeun Health Center UPT in 2023. It is hoped that health workers can apply the technique pelvic rocking exercise. This is for mothers giving birth so that mothers can give birth comfortably and in a quicker time compared to previous care.

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INTRODUCTION

In everyday terms, childbirth is often defined as a series of events where a full-term baby is expelled, followed by the expulsion of the placenta and fetal membranes from the mother's body through the birth canal or through other means, taking place with or without help (the mother's own strength). Prolonged labor causes increased mortality and morbidity in mothers and fetuses (Tri, 2022; Novelia et al., 2023; Başkurt & İldan, 2023). The factors that influence labor to be prolonged include presentation abnormalities, inadequate contractions, birth canal abnormalities, multiple pregnancies, and anemia. Prolonged labor is one of the causes of maternal death because prolonged labor causes sepsis, weakness, and dehydration in the mother; post-partum bleeding can occur, which is very dangerous for the mother's life (Widiastini, 2018). Factors that influence labor or determine the diagnosis of labor are passage (mother's pelvis), power (strength), including the strength of uterine contractions and the mother's pushing strength, passenger (fruit of pregnancy), psychology (a mother who is about to give birth) and helper. These factors must be taken into account because the incompatibility of one will have an impact on the others, especially birth attendants, who must pay attention to these five factors so that delivery can occur as expected, running smoothly without any complications (Sulfianti et al., 2020).

Various methods that can be used to speed up the progress of labor include using pharmacological and non-pharmacological methods, one of the non-pharmacological methods that can be used is pelvic rocking exercise which is a mobility exercise for the mother to keep the ligaments loose, relaxed, free from tension and have more space for the baby to descend into the pelvis so that the length of time during the first and second stages of labor can be shortened by doing gymnastics or physical exercise (Pertasari, 2022). Pelvic rocking exercise is one form of effective training and has several advantages. Pelvic rocking exercises can strengthen the abdominal and waist muscles. This exercise can reduce pressure on the waist by temporarily moving the fetus forward from the mother's waist. This exercise can also reduce blood pressure in the uterine area and reduce pressure on the mother's urinary bladder. Pelvic rocking exercise It also helps mothers to relax and improves the digestive process (DUWILA, (2023).

Based on district health profile data. Lebak in 2021 The number of maternal deaths reported throughout 2020 was 43 cases, an increase compared to the previous year which was 35 cases. The age class for maternal deaths that occurred in 2020 was mostly 20-34 years old with 29 cases, 11 cases aged more than 35 years old, and 3 cases less than 20 years old. Based on the time of death, there were 14 cases of maternal death during pregnancy, 16 cases during childbirth, and 3 cases during the postpartum period. (Dinkes Kabupaten Lebak, 2021). Meanwhile, based on the results of a survey conducted at the Binuangeun Lebak Banten Community Health Center, looking at birth data in November 2023, from 35 mothers giving birth, 9 of them experienced prolonged labor and were ultimately referred.

Research on Pelvic Rocking Exercise Many studies have been carried out, such as the results of research Surtiningsih (2022) stating that Pelvic Rocking Exercise very effective in shortening the time of the first stage of labor. This proves that Pelvic stocking exercise is an activity that is quite effective in helping speed up the process of opening the cervix so that the labor process runs quickly. Based on this background, to determine the length of the first stage of labor in women giving birth using non-pharmacological therapy, the author is interested in conducting research with the title "Effect Pelvic Rocking Exercise on Length of First Stage of Labor at the Binuangeun Lebak Banten Community Health Center in 2023".

METHOD

Design, Population, and Sample

The design of this research is a quasi-experimental research design, with the design used being a posttest-only design with control groups. This design was carried out to test the effect of pelvic rocking exercises regarding the length of the first stage of labor; the focus of the analysis will include the duration of the first stage of labor in primiparous mothers. This research formed two groups, an intervention group and a control group. The sample in this study was primiparous mothers. The total sample was 30 people with 15 people in each intervention group and control group. The intervention group will be accompanied by a midwife during labor to receive guidance and guidance regarding appropriate pelvic rocking exercise techniques. The control group will receive normal birth care, usually provided by a midwife.

The sampling technique used in this research is non-probability sampling, namely sampling that is not based on calculated possibilities, but solely based on practicality. The non-probability sampling technique used in this research is consecutive sampling, namely taking subjects who meet the research criteria to be included in the research for a certain period of time, so that the required sample size is met.

The inclusion criteria for the sample in this study are as follows: Mother giving birth in the Binuangeun Community Health Center area, Mother giving birth in primigravidarum, Single fetus, Can communicate well, Mother giving birth in first stage at Binuangeun Community Health Center, No history of complications during the prenatal period or illness. companions during pregnancy. Meanwhile, the exclusion criteria are mothers who are not willing to be research subjects, mothers who are uncooperative in labor.

Location and Time of Research

This research was conducted at the UPT Binuangeun Lebak Community Health Center, Banten Province from December to February 2023. The independent research variable in this study was pelvic rocking exercise. The dependent variable in this study is the length of the first stage of labor

Research Instruments

Data collection tools and materials used in this study are a partograph and observation sheet to determine the frequency of pelvic rocking exercise carried out in accordance with standard operating procedures and to see the length of the first stage of labor. Collection Procedures Data was obtained from direct observation. Data was obtained through stages, namely the researcher took a research location that supported the implementation of pelvic rocking exercise, the researcher gave informed consent to the mothers giving birth who would be used as research samples and the researcher monitored labor in the group of mothers who were given intervention and the group of mothers without pelvic rocking intervention.

Data Analysis

The research data obtained is then processed through the data process editing, verifying, coding, processing and cleaning. The analysis carried out in this research was univariate and bivariate analysis. Before carrying out the bivariate test, a normality test was carried out as a requirement for parametric statistics. The normality test in this study was used Shapiro Wilk because it has less than 50 subjects as respondents. The standard normal distribution is data that has been transformed into p form and is assumed to be normal. If the value is above 0.05 then the data distribution is declared to meet the assumption of normality, and if the value is below 0.05 then it is interpreted as not normal. If the data is normally distributed then a parametric test is used, an independent t-test, whereas for data that is not normally distributed the calculation uses a non-parametric test, namely uji Mann-Whitney, meanwhile to see if there is any influence pelvic rocking exercise regarding the length of labor in the active phase of the first stage, the test used is the test independent t-test.

RESULT

Univariate Analysis

Table 1. Length of First Stage of Labor in the Intervention Group and Control Group at the Binuangeun Lebak Banten Health Center in 2023

Length of Childbirth Period I	Mean	Std. Deviation	Min	Max
Intervention Group	362.40	65.836	258	480
Control Group	581.60	94.582	378	720

Based on Table 1, it can be seen the length of the first stage of labor in the intervention group (pelvic rocking exercise) obtained an average value of 362.40 minutes (6.04 hours) with a minimum value of 258 minutes (4.5 hours) and a maximum value of 480 minutes (8 hours). Meanwhile, the length of the first stage of labor in the control group (non pelvic rocking exercise) obtained an average value of 581.60 minutes (9.6 hours) with a minimum value of 378 minutes (5 hours) and a maximum value of 720 minutes (12 hours).

Bivariate Analysis

1. Normality test

The normality test used is the testShalpiro Wilk. Data is said to be normal if the significant value is greater than 0.05 at ($P > 0.05$). Conversely, if the significant value is smaller than 0.05 at ($P < 0.05$), the data is considered abnormal. The normality test results are explained in table 4.2 below.

Table 2. Normality Test Result

Group	N	Length of Childbirth Period I			Std. Deviation	p-value
		The least	Maximum	Mean		
Intervention Group	15	258	480	362.40	65.836	0.497
Control Group	15	378	720	581.60	94.582	0.809

Based on table 2 shows that the normality test results use the test Saphiro-Wilk. In the intervention group, the p-value was 0.497, and in the control group, the p-value was 0.809; from these results, the data is normally distributed.

2. Uji Independent T Test

The Independent T Test is carried out to determine whether there are differences in the results of the intervention group and the control group. The calculation results can be seen from table 3 below.

Table 3. Differences in Pelvic Rocking Exercise on Length of First Stage of Labor at Binuangeun Lebak Banten Community Health Center in 2023

Length of First Stage of Labor in the Intervention and Control Groups	Mean	Std. Deviation	Mean Difference	Asymp. Sig
Intervention Group	362.40	65.836	219.200	0.000
Control Group	581.60	94.582		

Based on table 3, it shows the results of calculating the difference in value mean (average) in the length of the first stage of labor in the intervention group (pelvic rocking exercise) of 362.40 minutes (6.04 hours) and value mean (average) the duration of the first stage of labor in the control group was 581.60 minutes (9.6 hours). Hence, the difference in mean value was 219.2 minutes (3.6 hours). Test results independent t test It is known that the significance value is $0.000 < 0.05$, so it can be concluded that H_0 is rejected and H_a is accepted. Thus, it can be concluded that there is a difference in the length of labor between the experimental group and the control group. Pelvic rocking exercise on the duration of the first stage of labor at the Binuangeun Lebak Banten Community Health Center in 2023.

DISCUSSION

This research uses a quasi-experimental design with an experimental design and control group. This research was conducted from December to February with a sample of 30 pregnant women who gave birth at the Binuangeun Health Center Technical Implementation Unit, Lebak Regency, Banten Province, in 2023.

1. Univariate Analysis

1) Length of First Stage of Labor in the Intervention Group at the Binuangeun Lebak Banten Health Center in 2023

Based on the results of the research, it can be concluded that the duration of the first stage of labor in the intervention group (pelvic rocking exercise) obtained an average value of 362.40 minutes (6.04 hours) with a minimum value of 258 minutes (4.5 hours) and a maximum value of 480 minutes (8 hours). Based on these results, it can be seen that the length of the first stage of labor uses pelvic rocking exercises, and the process goes fast.

This is in line with research according to Andriani et al. (2022) based on test results Mann whitney states that the p-value is $0.000 < 0.05$. So it was concluded that there was a significant difference in the length of delivery between the groups that did pelvic rocking exercise with those who don't. Likewise with the results of research conducted by Widianingsih & Simanjuntak (2023), Pelvic Rocking Exercise show the Mean Rank or the average ranking of each group, namely in the experimental group the average ranking was 23.50, higher than the average of the control group, namely 17.50, so there is an effect of implementation PRE on the progress of labor in women giving birth during the first active phase at PMB Repelita Bekasi in 2022.

According to research by Wulandari & Wahyuni (2019), Pelvic Rocking is a form of exercise by shaking the pelvis and waist from the front, back, left, and right sides, which aims to train the muscles of the stomach, waist, and hips. This movement effectively reduces the discomfort that arises during the birth process due to contractions that become more frequent over time. As the birth process progresses, the duration and number of contractions become more frequent and the uterus presses on the pelvic area, which can trigger the mother to urinate frequently (Suwanti & Marlana, 2021).

Based on observations made by researchers at the Binuangeun Lebak Banten Community Health Center, more and more pregnant women in the third trimester and women giving birth are familiar with and diligent in taking action pelvic rocking exercises as an effort to prevent the risk of prolonged labor and relaxation techniques, the higher the chance of undergoing labor without the risk of prolonged labor. Pelvic rocking exercise helps reduce lower back pain by loosening the lower back muscles, helps stimulate digestion, helps reduce constipation, and helps the fetus to be in the best position for labor by widening and opening the pelvis and loosening pelvic congestion with the help of gravitational pressure. Pelvic rocking exercises affect the pressure on the cervix, so pelvic rocking exercises are effective in speeding up the length of the first stage during the labor process.

Therefore, it is necessary to provide IEC with a comprehensive approach to pregnant women, especially those entering the third trimester, regarding how to introduce the pelvic rocking exercise and how to do this to prevent the risk of prolonged labor during delivery so that pregnant women are interested in practicing new knowledge, namely pelvic rocking exercise to reduce the risk of prolonged labor during delivery in both primigravida and multigravida pregnancies.

2) Length of First Stage of Labor in the Control Group at the Binuangeun Lebak Banten Health Center in 2023

Based on the research results, it is known that the length of the first stage of labor in the control group (non-pelvic rocking exercise) obtained an average value of 581.60 minutes (9.6 hours) with a minimum value of 378 minutes (5 hours) and a maximum value of 720 minutes (12 hours). Based on these results, it can be seen that the length of the first stage of labor uses nonpelvic rocking exercises. The process did not go as fast as the intervention group. Long parturition is labor lasting more than 24 hours in primi and more than 18 hours in multi. So, it can cause symptoms of dehydration, infection, maternal fatigue, as well as asphyxia, and fetal death in the womb (Qonitil & Fadilah, 2019)

In research by Wulandari & Wahyuni (2019), factors that influence labor to be prolonged are presentation abnormalities, inadequate contractions, birth canal abnormalities, multiple pregnancies, and anemia. Prolonged labor is one of the causes of increased mortality and morbidity in the mother and fetus. Mothers with prolonged labor are at greater risk of bleeding due to uterine atony, laceration of the birth canal, infection, fatigue and shock. At the same time, in fetuses, there is an increased risk of severe asphyxia, cerebral trauma, infection, and injury due to procedures (Pauziah et al., 2022). In primiparas, the duration of labor in the first stage is longer than in multiparas. However, not all natural births will end according to the normal time (Wahyuni et al., 2021). The first stage in primigravida mothers lasts around 13 hours, while in multigravida mothers, it lasts around 7 hours. The first stage is complete when the cervix is completely dilated. The intensity of uterine contractions increases until the first stage, and the frequency becomes 2 to 4 contractions in 5 to 10 minutes. Also the length of the contractions increases starting from 20 seconds at the beginning of the mother's labor to reaching 60 to 90 seconds in the first stage (Nuraeni, 2021).

Syamtari & Farida (2023) state that the length of the first stage of labor for the control group was 753 minutes (12.6 hours), while for the intervention group the average value of the first stage of labor was (Mean) amounting to 478 minutes (8 hours), it was explained that if you only use the delivery method it is not effective in speeding up the length of the first stage of labor, so using pelvic rocking exercise effective for the duration of the first stage of labor.

In the researchers' opinion, these results are thought to be caused by risk factors for prolonged labor, for example, pelvic abnormalities, fetal position, incorrect delivery, large fetus, congenital abnormalities, hanging abdominal primi-, grande-multipara, and premature rupture of membranes. Apart from that, in terms of abnormalities, it can also influence pregnant women, women giving birth, and health workers themselves, especially midwives, who can do this. pelvic rocking exercise during the third trimester of pregnancy until the time of delivery to be able to help uterine contractions be more effective in carrying the baby through the pelvis if the birthing mother's position is upright and can lean forward because if it is not like that, long labor is more at risk of bleeding due to uterine atony, laceration of the birth canal, infection, fatigue and shock, while in the fetus it can increase the risk of severe asphyxia, cerebral trauma, infection and injury due to procedures.

2. Bivariate Analysis: Difference in length of the first stage of labor between intervention and control groups

Based on the results of different tests using the independent t-test it is known that the significance value is $0.000 < 0.05$, then it can be concluded that H_0 is rejected, and H_a is accepted. Thus, it can be concluded that there is a difference in pelvic rocking exercise between

the experimental group and the control group regarding the length of the first stage of labor at the Binuangeun Lebak Banten Community Health Center in 2023.

Pelvic rocking is an effective way to relax the lower body, especially the pelvic area. This technique is often recommended during labor. To increase relaxation and allow gravity to help the baby travel through the birth canal. This allows the labor process to progress faster. When a mother gives birth and feels uncomfortable at the location, especially the back area, it feels hot and painful, but many mothers at the beginning of labor still want to do several activities, such as walking or other light movements such as moving the pelvis; or pelvic rocking. However, some mothers use tools such as balls because they can do several exercise movements. Utilization of dirtball. This can be done by shaking your hips, sitting on the ball, and slowly swinging your hips back and forth, right, left, and in circles (Raidanti & Mujianti 2021).

In accordance with the results of research conducted by Taher & Azis (2022), in the Bissappu Community Health Center working area regarding the continuity of labor, there were 13 people (86.7%) who experienced accelerated labor during the first active phase, and 2 people (13.3%) experienced a slowdown in the progress of labor. In the first phase, the active phase in the group carried out pelvic rocking exercises. Meanwhile, in the group that did not undergo pelvic rocking exercise, 4 people (26.7%) experienced accelerated labor during the first active phase and 11 people (73.3%) experienced a slowdown in labor progress during the first active phase. So, pelvic rocking exercises are very effective in shortening the length of labor during the first active phase. Performing pelvic rocking can speed up the labor process, especially during the first stage and help the mother experience a normal first stage of labor.

Sitting on a ball while pushing like a swing or making pelvic rotation movements can help the process of fetal descent. The ball supports the perineum without much pressure and helps keep the fetus aligned in the pelvis. The position of sitting on the ball is assumed to be similar to squatting, opening the pelvis, thereby helping speed up the birthing process (Raidanti & Mujianti, 2021).

Based on observations made by researchers at the Binuangeun Lebak Banten Community Health Center, pelvic rocking exercises are Rarely used for training for third-trimester pregnant women or women giving birth. As for the risk factors in maternal labor, namely those who experience prolonged labor, the risk factors occur because, in fact, every woman who gives birth always has a risk. In this case, the risk is prolonged labor; therefore, at the time of delivery, there must be good cooperation between the patient and the midwife so that things happen. Things like the above can be conditioned. Parity factors and health workers' birth assistance are also very influential. The younger the age of a pregnant mother with early parity or primigravida, the slower the cervical dilatation can occur, so using pelvic rocking exercise as training material it will cause cervical dilatation to occur more quickly because the pressure from the baby's head on the cervix remains constant when the mother gives birth in an upright position. As a health worker, there are many ways to educate the public so that these undesirable things do not happen. Therefore, it is a good idea for the public to receive health education that health workers deliver well.

CONCLUSION

Pelvic rocking exercises have an influence on the duration of the first stage of labor at the Binuangeun Health Center UPT. It is hoped that health workers can apply the technique of pelvic rocking exercise. This is for mothers giving birth so that mothers can give birth comfortably and quicker than previous care.

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CONFLICT OF INTEREST

There is no conflict of interest in conducting this study.

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