Compilation Of Rebozo Techniques, Birthing Ball, Music Therapy Toward Reducing Pain During 1st Stage Active Phase In Childbrith

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Abstract. The progress of the first stage of labor in the active phase is the most tiring time. In this phase, most mothers feel severe pain because uterine contractions begin to become more active. Pain causes insufficiency so that the blood supply to the fetus is reduced . Pain also causes *hyperventilation* , increased blood pressure, and reduced intestinal motility and *vesicaurinaria* . Action lower painful labor with method rebozo , birthing ball and therapy music. This study to know The effect Compilation of *Rebozo, Birthing Ball, Music Therapy techniques* for reducing pain during the first active phase. Method study with pre experiment And design *One group pre-post test design* . Population Mother giving birth at PONED Japah Community Health Center, Blora Regency . The sampling method is purposive sampling, so big sample as many as 24 respondents . Instrument with the Numeric Rating Scale (NRS) checklist. Results study mean pain value before intervention is 7,62 And painful after intervention is 6,00. Analysis test *Wilcoxon* obtained p value 0.000. Conclusion obtained that The compilation of Rebozo techniques, Birthing Ball, Music Therapy has a significant effect on the pain scale during the first active phase . Recommended to officer health can facilitate Mother giving birth For do action Rebozo technique, Birthing Ball, Music Therapy as intervention non-pharmacological.

Key words: [Rebozo, Birthingball, Music, Pain, Childbirth]

INTRODUCTION

Childbirth is the process of expelling (birth) the products of conception that can live outside the uterus through the vagina to the outside world. Labor is a natural event that begins when the uterus contracts and changes in the cervix occur, namely the cervix opens and thins. The labor process ends with the complete birth of the placenta (Yulizawati et al. 2022). The stages of labor begin with the first stage, namely opening which takes place between zero dilatation to complete dilatation (10 cm) (Bobak 2018). Childbirth is influenced by *Passage* (birth canal), *Passenger* (baby and placenta), *position* (position and helper) and *Power* (mother's strength in labor) (Kurniarum 2020). The birth process causes factors that are not smooth, including *Passage* (birth canal), *Passanger* (baby) and *Power* (mother's strength) (Cunningham 2018).

Aspects of the birth canal, strength and condition of the baby are the main factors in complicating childbirth. (Varney 2019) Maternal force poses a risk to the fetus and mother, which is seen in cases of prolonged labor. The cause of prolonged labor is lengthening of the first stage of labor due to pain. (Manuaba 2019). Pain can affect the mother's condition, such as fatigue, fear, worry and can cause stress. Stress can cause weakening of uterine contractions and result in prolonged labor (Judha 2016). Labor pain and prolonged labor that are not resolved quickly can cause emergency conditions in the mother and lead to death (Simkin 2016). Maternal Mortality Rate (MMR) is an important indicator of health status and the success of health services. MMR reflects the risks faced by mothers during pregnancy until postpartum.

The progress of the first stage of labor in the active phase is the most tiring time. In this phase, most mothers feel severe pain because uterine contractions begin to become more active. In this phase, adequate contractions are needed to start labor. Weakening of uterine contractions is the most common cause of prolonged labor (Wiknjosastro 2018). The strength of the mother in normal labor has an impact on the difficulty of labor which can be interpreted from stage 1 of the active phase (Varney 2020). Labor pain is caused by uterine contractions and cervical dilatation. The longer the pain is felt, the stronger it will be, the peak of the pain occurs in the active phase, where complete opening is up to 10 cm (Manuaba 2019). The average rate of labor pain in Indonesia is 85-90% and 7-15% is not accompanied by pain

(Fitriawati, Kurniawati, and Juliningrum 2022). The intensity of pain during labor affects the psychological condition, the birth process, and the well-being of the fetus. (Kurniarum 2020) Labor pain also causes fear, resulting in anxiety and panic (Octariana 2020).

The active phase of the first stage of labor is the most tiring period. In this phase, the contractions are longer, stronger and more frequent and the pain intensity is stronger. Pain increases adrenaline secretion which makes blood vessels narrow so that the blood supply to the fetus is reduced. Blood insufficiency weakens uterine contractions and prolongs labor (prolonged labor) (Yulizawati et al. 2022). Labor pain also causes *hyperventilation* resulting in increased oxygen demand, increased blood pressure, and reduced intestinal motility and *vesicaurinaria*. Catecholamine secretion occurs which causes disruption of uterine contractions and *uterine inertia* (Jha et al. 2023). Labor pain treatment is provided using pharmacological or non-pharmacological methods. Pharmacological methods often cause side effects that are detrimental to the mother and fetus (Rejeki 2020). Pain management requires analgesia as well as actions that increase relaxation thereby blocking painful stimuli (Guo et al. 2022). Non-pharmacological methods can use compresses, deep breathing, back rubs, hypnotherapy, acupuncture, acupressure, *birthing ball* , aromatherapy, rebozo, music and others (Judha and Sudarti 2018).

A non-pharmacological effort to reduce labor pain is the *birthing ball technique* (Rasumawati, Oktya, and Prasetiawati 2023). *Pelvic rocking* exercise while sitting on a birthing ball recommended as a way to improve the progress of labor. Birth ball exercises (*gymball*) are believed to be able to strengthen the pelvic floor muscles, increase the diameter of the pelvis, help the fetus descend into the pelvis, thereby speeding up the labor process and reducing pain (Rakizah, Rahmawati, and Kadarsih 2023). The *birth ball* technique makes it easier for the mother to move freely, changing positions according to her wishes by following the rhythm of her contractions. Freedom of movement during this opening period, especially in the active phase as his body gets stronger, will provide a feeling of comfort and minimal trauma (Grenvik et al. 2019) .

Another method to reduce labor pain during the first active phase is the rebozo technique. Rebozo is a scarf used to support the abdominal *ligaments* , where the mother in labor kneels or supports on *a gym ball* . The rebozo *shifting technique* is useful for the *ligament muscles* in the uterine area, while *the apple tree shake* is more for the pelvic muscle ligaments. Rebozo technique to prevent long labor which can shorten the active phase of labor (Fitriyaningsih, Sinurat, and Simanihuruk 2023). The rebozo rocking technique has been proven to be effective in accelerating the descent of the fetal head in the 1st stage (Simanullang et al. 2023). The rebozo technique is effective in reducing the pain scale and shortening the duration of the first stage of labor (Widiatrilupi 2023).

The rebozo and *birthing ball* technique as an intervention to reduce labor pain is music therapy. Music can be applied to reduce labor pain, reduce anxiety and stress, improve sleep quality, and increase fetal movement, improve fetal heart rate, and acceleration. (Ji et al. 2024). Other research shows that music therapy provides benefits in increasing comfort during labor and reducing pain (Shimada et al. 2021). Music as a non-pharmacological intervention that can reduce pain and anxiety while offering various forms of psychological support to reduce stress and increase a sense of control for mothers in labor (McCaffrey et al. 2020). Music therapy can be used in combination with therapy to help the labor process by reducing pain symptoms, improving the mother's mental state and lowering blood pressure during the active phase of the 1st stage (Aisyah and Hardjanti 2019). Music therapy increases the mother's readiness during the labor process (Perkovic et al. 2021).

Actions to overcome prolonged labor and labor pain at the Jekulo Kudus Community Health Center include providing deep breathing techniques, giving the mother a comfortable position and rubbing the back, however these measures are still not effective, so several combinations of measures are needed to reduce labor pain. Based on this background, researchers are interested in researching "Compilation of *Rebozo, Birthing Ball, Music Therapy techniques* for reducing pain in the first active phase at PONED Japah Community Health Center, Blora Regency".

METHODS

This type of research is *pre-experimental research* with *One group pre-post test design* . Population study This is all mothers gave birth at PONED Japah Community Health Center, Blora Regency with the number of pregnant women in the third trimester . The sampling technique is purposive sampling,

so big sample based on calculation were 24 respondents . Instrument study using a checklist (*Numeric Rating Scale* ; NRS). Data analysis using test *Wilcoxon* .

RESULTS AND DISCUSSION

1. Pain in the 1st Active Phase Before Procedure

Table 1. Distribution of Pain Scale in 1st Stage Active Phase Before Procedure Compilation of Rebozo techniques, Birthing Ball, Music Therapy

Mean	Median	Min	Max	elementary school
7.62	8.00	7	9	0.576

The results of research on the first stage of labor pain scale before the Compilation of the Rebozo, Birthing Ball, Music Therapy technique obtained an average of 7.62 (in the heavy category). Labor pain arises due to dilatation of the cervix and lower uterine segment, causing a reaction to the activity of the sympathetic nervous system. This pain is experienced both in first labor and in multiparous labor. This study obtained the lowest pain of 7 and the highest pain of 9. Labor pain is a physiological condition that begins to appear in the first stage of labor in the active phase and latent phase, in the latent phase there is dilatation of up to 3 cm. Primigravida 1st stage of labor lasts approximately 20 hours, multigravida approximately 14 hours. (Widiawati 2018)

Childbirth has implications for pain responses in the severe and very severe categories. (Fajria 2021) The pain scale before the procedure was found to be an average of 7.94 (Persari 2018) . The pain response is indicated by increased restlessness, increased pulse and difficulty in directing. (Angelia 2020) The pain response felt by respondents was indicated by anxiety and emotional stress and some of them could not even be directed. Respondents who experienced very severe pain were due to increasing cervical opening and increasingly adequate contractions, this caused the pain to become more severe and uncontrollable (Angelia 2020) .

The labor pain felt by the mother before the procedure was carried out was mostly in the severe pain category. (Kurniyawan 2016) The labor pain scale before the procedure was given was 7 and 8. The average estimated pain scale value was 6.17 to 7.10. (Nanur 2015) Labor pain affects the mother's condition, namely the mother becomes increasingly stressed, causing excessive hormones such as catecholamines and steroids. This hormone can cause smooth muscle tension and vasoconstriction of blood vessels. This can result in decreased uterine contractions, decreased uteroplacental circulation, reduced blood and oxygen flow to the uterus, and the emergence of uterine ischemia which makes pain impulses increase (Judha and Sudarti 2018) .

Telova research (2022) found that the average level of labor pain before being given *counterpressure treatment* with *a birth ball* was 7.940. (Telova 2022) The pain felt by respondents is influenced by respondent characteristics such as age and education. The parity factor also influences labor pain, namely *nulliparous mothers* feel more intense pain than multiparas, young mothers also show more severe pain than adult mothers. (Ayu 2017) Research shows that pain does not differ between mothers with higher and lower education. (Khoirunnisa 2017) Labor pain is not influenced by characteristics (age, education, occupation) because pain is subjective. (Maryuni 2020)

Labor pain occurs due to uterine contractions and cervical dilatation. The longer the pain is felt, the stronger it will be, the peak of the pain occurs in the active phase, where complete opening is up to 10 cm. (Andarmoyo 2016) Labor pain before surgery is in the severe category due to the process of cervical dilatation. The pain scale before the procedure averaged 8.27 and 8.00. (Mustafida 2020) Pain during childbirth arises from psychological responses and physical reflexes, where the pain felt by the mother is in the severe and very severe categories. Pain has an impact on increasing the activity of the sympathetic nervous system which can result in changes in blood pressure, pulse, breathing and skin color, nausea, vomiting, and also excessive sweating. Emotional tension can worsen the mother's perception of pain. (Wijayanti 2021) Pain causes fear, resulting in anxiety which ends in panic. (Kurniarum 2018)

Pain that occurs during labor is caused by uterine contractions, dilatation and effacement of the cervix, and fetal descent during labor. This results in an increase in blood pressure, pulse, breathing, sweat, pupil diameter, and muscle tension. (Judha 2016) Labor pain can cause uterine inertia which

results in prolonged labor. Prolonged labor is one of the complications that occurs during childbirth which can cause death in the mother. (Oktariana 2020) Pain is a condition that mothers in labor worry about. The choice of non-pharmacological methods is because they are cheap, easy, effective and do not cause side effects during labor. (Basuki 2018)

2. Pain during the 1st active phase after the procedure

Table 2. Distribution of Pain Scale in the 1st Active Phase After the Rebozo technique, Birthing Ball, Music Therapy

Mean	Median	Min	Max	elementary school
6.08	6.00	5	7	0.654

Research result after the action Compilation of Rebozo techniques, *Birthing Ball, Music Therapy* get The average pain in the first stage of labor was 6.08. This research is in line with research conducted by Telova (2022) which found that pain decreased after the procedure (average 6.417). Actions with a birthing ball and *massage* in the form of strong pressure stimulation on the sacrum during the birthing process can have a relaxing effect thereby reducing the pain caused by uterine contractions that the mother in labor feels. This study obtained a scale as low as 5 and as high as 7. (Telova 2022) This was also proven by research using a combination of rebozo and birth ball after the action of lowering the pain scale in stage 1. (Angraini 2020)

Labor pain that is not treated adequately has dangerous effects apart from the discomfort it causes, the effects that arise will affect the birth process as well as worsening the condition of the mother and fetus. Reducing pain after administering acupressure will help the mother reduce the discomfort felt due to labor pain. (Basuki 2018) Labor pain can be controlled by providing *birthball procedures* . This action is one of the non-pharmacological pain management methods that can be applied to mothers giving birth. (Oktavia 2020) Another recommended action is using the rebozo technique accompanied by therapeutic music. (Raidanti and Mujianti 2019)

The feeling of pain during pregnancy is subjective, not only depending on the intensity of the injection but also depending on the mental state of the mother at the time of delivery. (Judha and Sudarti 2018) The pain felt by each individual during labor is different. (Cunningham 2018) The mother's mental state will make the mother stressed or vice versa. Stress during labor can cause extreme pain during labor because stress triggers the release of catecholamine and adrenaline hormones. (Setyowati 2018) The progress of labor during the first active phase is the most tiring, difficult time, and most mothers begin to feel pain. In this phase, most mothers feel intense pain because uterine contractions begin to become more active. Giving acupressure to women in labor will reduce the pain scale (Ozgoli et al. 2018) .

Research found that there was a difference in the pain scale after the Rebozo, *Birthing Ball, Music Therapy procedures* . This combination of interventions can make the mother more relaxed so that it closes the gate for pain messages that will be sent to *the spinal cord* and brain. Apart from that, the strong pressure given when performing the Rebozo, *Birthing Ball, Music Therapy technique* can activate endorphin compounds so that the transmission of pain messages can be inhibited, thereby inhibiting the transmission of pain messages. can cause a decrease in pain intensity. (Angraini 2020) Mothers who have difficulty adapting to labor pain will cause uncoordinated uterine contractions which can lead to prolongation of the first stage of labor and disrupted fetal well-being. (Rasumawati, Oktya, and Prasetiawati 2023) Providing appropriate therapy will help reduce pain (Herawaty, Armin, and Sriasih 2022) .

The use of a birth ball helps the progress of labor and can be used in a variety of positions that help the progress of labor by using gravity while increasing the release of endorphins as the elasticity and curvature of the ball stimulates the receptors in the pelvis that are responsible for secreting endorphins. (Irawati, Ayu, Susanti Susanti 2019) It is also explained that giving *the rebozo* and *birthball* techniques encourages the production of endorphins. (Octavia 2020) *The release of endorphins* triggers a calming and uplifting response and has a positive effect on emotions, thereby causing relaxation and normalization of body functions. 16

3. The Effect of Compilation of Rebozo, Birthing Ball, Music Therapy Techniques on Reducing Pain in the First Stage of the Active Phase

Table 3 Analysis of the Effect of Compilation of Rebozo, Birthing Ball, Music Therapy Techniques on Reducing Pain in the First Stage of the Active Phase

Active Phase 1 Stage Pain Scale	Mean	Negative Ranks	Positive Ranks	Ties	Mean Rank	Sig. (2 Tailed)
Pretest	7.62	23	0	1	12.00	0,000
Posttest	6.08				.00	

The research results showed that the compilation of the Rebozo technique, Birthing Ball, Music Therapy on reducing pain during the first active phase had a significant effect on the pain scale during the first active phase at PONED Japah Community Health Center, Blora Regency because the p value = 0.000 (< 0.05). This effect is shown by a decrease in the pain scale during the first stage of labor before the procedure, with an average value of 7.62 and after the procedure, an average value of 6.08 was obtained. These results indicate a decrease in the pain scale of 1.54. Giving a compilation of Rebozo techniques, Birthing Ball, Music Therapy makes the mother relax so she can release endorphins which function as pain relievers. (Hairunnisyah 2022)

Research that is in line with the results of this research is that according to Irawati, based on the results of bivariate analysis, it shows that the p value is 0.001, which shows that there is an influence of the *birthball technique* on the labor pain scale. (Irawati, Ayu, Susanti Susanti 2019) *Birth ball exercise* intervention during the first stage of labor can reduce pain during labor because the patient feels comfortable, so the body's response will release *endorphin hormones* which cause feelings of pleasure and decrease pain. (Wijayanti 2021) Research states that the combination of *rebozo* and *birthball* has a significant effect on reducing labor pain in the active phase of the first stage (p 0.000 < 0.05). (Angraini 2020) This is because this action makes the mother relaxed, calm and comfortable during labor so that pain is also reduced. (Telova 2022)

This research found that from 24 respondents who experienced a decrease in the pain scale (*negative ranks*), 23 respondents had a *mean rank value* of 12.00, there was no increase in the scale (*positive rank*) 0 and 1 respondent had the same scale (*ties*). This shows that 1 respondent with the same pain scale before and after the procedure was caused by the mother's condition being very anxious and stressed so that the intervention given did not show a decrease in the pain scale. Previous research found that interventions did not have an effect on mothers experiencing anxiety. This anxiety occurs in the first birth due to lack of experience and the mother having a history of risky pregnancies. As a result of increased anxiety, the stimulus for labor pain will increase. (Mustafida 2020)

The rebozo action helps the mother relax more and makes the fetus descend more quickly. The relaxed condition when doing exercises accompanied by deep breathing techniques and music causes the *gelatinous substance* to block pain messages so that the brain does not register the pain messages and the intensity of pain is limited. (Shanty Natalia et al. 2023) Apart from that, *the birthball action* makes the mother relax and helps open the pelvic floor so that the intensity of pain decreases. (Octavia 2020) The *birthball* combination action provides stimulation to reduce the pain scale. (Yuliawati 2019) *Gate control* theory explains that stimuli or impulses can be adjusted or regulated, even inhibited by defense mechanisms in the central nervous system. This theory explains that there is a *gate mechanism* that opens at the nerve endings in the spinal column so that it can increase or decrease the flow of nerve impulses, namely from the peripheral nervous system to the central nervous system.24

The use of *a birthball* which supports the implementation of *rebozo* for mothers in labor by kneeling and hugging the ball during contractions makes the mother more relaxed and helps the progress of labor by utilizing the force of gravity. (Oktavia 2020) This action stimulates the Ad fibers which enter the dorsal part of the spinal cord. This causes segmental inhibition of pain stimuli transmitted by C fibers which travel more slowly, and through connections in the midbrain, causes inhibition of pain stimuli in C fibers in other parts of the spinal cord.24 The resulting message will stimulate mechanoreceptors, if input The dominant ones come from delta A fibers and C fibers, so they can open this defense and the client perceives the sensation of pain. Even if pain impulses are sent to the brain, there are higher cortical centers in the brain that modify pain. (Today 2018)

Previous research found that there was an influence *of rebozo, music* and *birthball* on reducing the scale of labor pain. The average pain level before treatment was 8.20 and the average after treatment was 6.23, with a decrease in labor pain level of 1.97 and obtained significant results of 0.000 > 5%. (Yuliza 2022) *Birthball* is a physical therapy ball that helps mothers in the first stage of labor get into a kneeling position and leaning on the birthball can reduce pain so that the mother is more comfortable, by utilizing gravity it can help lower and rotate the baby's head and make it easier to do *the rebozo* . When a mother in labor moves, adjusts her position, is able to control her anxiety and has a birth companion who can help her divert her mind from the perception of pain, the pain will decrease. (Rachmawati 2020)

CONCLUSION

Research results showed that the average pain in the first stage of labor before the procedure was 7.62 And The average pain in the first stage of labor after the procedure was 6.08 . The compilation of Rebozo, Birthing Ball, Music Therapy techniques has a significant effect on the pain scale during the first active phase at PONED Japah Community Health Center, Blora Regency because the p value = 0.000 (< 0.05) at a significance level of 5%

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