



The Effect of Perineal Massage on Third Trimester Pregnant Women in Preventing Perineal Rupture

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Article Information			ABSTRACT
Received	:	27 November 2025	Perineal rupture is a common complication of vaginal delivery and can cause pain, bleeding, and impaired reproductive function that impacts the mother's quality of life after delivery. One non-pharmacological prevention effort that can be done is perineal massage in the third trimester of pregnancy to increase the elasticity of the perineal tissue. This study aims to determine the effect of perineal massage on the incidence of perineal rupture in pregnant women in the third trimester. Methods: The study used a quasi-experimental design with a pretest–posttest control group design model. The sample consisted of 30 pregnant women in the third trimester who were divided into an intervention group and a control group, each with 15 respondents. Control of confounding variables was carried out through inclusion criteria and the provision of the same initial education. Data analysis used the Mann–Whitney test. The results showed a p value = 0.021 (p <0.05), so Ho was rejected and H1 was accepted, so there was a significant effect of perineal massage on the incidence of perineal rupture in pregnant women in the third trimester. The conclusion is that perineal massage is effective in reducing the incidence of perineal rupture, so it is recommended as part of education classes for pregnant women with the assistance of health workers
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Introduction

Childbirth is a physiological process experienced by every pregnant woman, but in practice it can cause various complications that affect the health of the mother. One of the complications that occurs along with it is a rupture of the perinium, which is a tear in the tissue between the vagina and anus due to excessive stretching when the baby is born. Data from the World Health Organization (WHO) in 2022 recorded around 2.3 million cases of perinium rupture in maternal mothers worldwide. Meanwhile, in Indonesia, this condition is experienced by 2,183,219 mothers who give birth or about 57% of the total 3,830,209 vaginal spontaneous births (Ministry of Health of the Republic of Indonesia, 2023). Meanwhile, in East Java, there were 588,033 spontaneous births that experienced perinium rupture (Ministry of Health of the Republic of Indonesia, 2023). In Jombang Regency in 2023, there were 17,031 deliveries (Health Office, 2023). At the Tembelang Health Center in 2023, there were 97 deliveries, and there were 65 cases of perineal rupture. The causes that accompany the rupture of the perinium in childbirth at the Tembelang Health Center are the stiff perinium and the wrong way of pressing during the delivery process.

A less elastic perineum is not able to adapt optimally to stretching as the fetal head passes through the birth canal, increasing the risk of rupture, especially when accompanied by improper straining techniques such as straining too hard or without pause. Physiologically, perineal massage can improve tissue elasticity through increased local blood flow as well as the flexibility of collagen and elastin fibers, so that the tissues are better prepared to undergo gradual stretching during labor (Beckmann & Stock, 2013). Good elasticity of the perineum plays a role in controlling the rate of descent of the fetal head and reducing excess pressure on the perineal tissue. The effectiveness of perineal massage is also influenced by other factors, such as the correct delivery position and straining techniques, which can synergistically lower the risk of perineal rupture (Cunningham et al., 2018). Therefore, understanding the biological mechanisms of perineal massage and its interaction with other childbirth factors is important as the basis for efforts to prevent perineal tears.

Perinium rupture causes severe pain, bleeding, and can interfere with women's well-being leading to discomfort (Eika et al., 2023). In addition, the suture process performed to repair the rupture can cause pain and discomfort, as well as the risk of infection if the procedure is not performed with proper sterilization. Perineal rupture is a complication of childbirth that can cause pain, bleeding, and long-term impacts such as infections, hematoma, and fistulas that

affect the quality of life of the mother after childbirth (Eika et al., 2023). Efforts to prevent perineal rupture have been pursued since pregnancy through pregnant women's classes, including perineal massage education, kegel exercises, warm compresses, and selection of the right straining position (Valda et al., 2021). Based on the results of research conducted by Anggaini, Fitria Dewi and Yasi (2019) from 20 respondents divided into two groups consisting of 10 respondents of the treatment group (perineum massage) the results of almost all respondents did not have a perineal tear (80%), and from the 10 respondents of the control group most (60%) perineal tears occurred, the analysis with the Mann Whitney statistical test obtained a significance value $p = 0.001$ which means that H_0 is rejected which means there is an effect of massage perineum in the third trimester of pregnancy against the tearing of the perineum primigravida. Although perineal massage has been proven to be effective in reducing the risk of perineal tears and the need for episiotomy, its application in Indonesia is still not optimal. One of the main factors is the low understanding of pregnant women about the benefits and how to perform perineal massage correctly. Many pregnant women have not received comprehensive and applicable information, so perineal massage has not become part of the practice of self-care pregnancy in the final trimester. This condition causes pregnant women to lack confidence to perform perineal massage regularly and as recommended (Anggraini et al., 2020).

Perineal massage is a nonpharmacological intervention that aims to increase the elasticity of perineal tissue, improve local blood circulation, and reduce pelvic floor muscle tension before childbirth. The effectiveness of perineal massage is greatly influenced by the frequency, duration, and time of initiation of interventions during pregnancy. According to Aasheim 2017, perineal massage is most effective when it starts at 34 weeks of gestation, when the perineal tissue begins to undergo physiological changes in preparation for childbirth. Interventions that start in this period have been shown to reduce the risk of moderate to severe perineal tears, especially in primigravida mothers. Regular perineal massage 3–4 times per week with a duration of 5–10 minutes per session has a more significant effect in reducing the incidence of perineal tears and the need for episiotomy compared to irregular massage. In line with the research of Anggaini, Fitria Dewi and Yasi (2019) that there is an effect of perineal massage on perineal tears in primigravida mothers. The perineal massage performed on primigravida mothers included a frequency of perineal massage of 31–40 massages, the duration of perineal massage >5 minutes, and the depth of perineal massage <2.54 cm below the mouth of the vagina,

the results of almost all (80%) were not perineal tears. Consistent frequency and sufficient duration allow the perineal tissue to gradually adapt to stretching, thereby increasing flexibility during labor. Overall, the combination of regular massage frequency, adequate duration, and appropriate intervention start time plays an important role in increasing the effectiveness of perineal massage as an effort to prevent perineal trauma and reduce episiotomy. Several previous studies have shown that influencing factors include the frequency of massage, the length of massage and the depth of massage, in this study researchers added the factor of gestational age, starting to massage from the 3rd trimester of gestation, which is 36–38 weeks as a factor that affects the effectiveness of perineal massage. Regular perineal massage at 36–38 weeks of gestation provides optimal benefits in increasing the flexibility and readiness of the perineum, so that it is effective in reducing the incidence of perineal tears in childbirth, especially in primigravida mothers.

Based on initial observations and findings of previous research in Indonesia, the application of perineal massage in pregnant women in the third trimester is still not optimal. Many pregnant women have not fully understood the benefits and techniques of perineal massage, while education from health workers has not been carried out in a structured and continuous manner in antenatal services. This condition causes perineal massage to be used optimally as a strategy to prevent perineal rupture (Ministry of Health of the Republic of Indonesia, 2020). From these problems, the purpose of this study is to determine the effect of perineal massage in pregnant women in the third trimester on the incidence of perineal rupture. This research is expected to provide scientific evidence that supports the application of perineal massage as part of antenatal obstetric care, as well as the basis for strengthening the role of midwives in providing education and assistance of perineal massage to pregnant women. Thus, the results of this study can contribute to efforts to reduce the rate of perineal trauma, improve the comfort of childbirth, and improve the quality of life of mothers after childbirth.

Method

This study employed a quasi-experimental design using a pretest–posttest control group approach to evaluate the effect of perineal massage on the incidence of perineal rupture among third-trimester pregnant women. The study population consisted of pregnant women attending antenatal care (ANC) services at the Tembelang Health Center. A total of 30 participants were selected through purposive sampling based on predetermined inclusion and exclusion criteria

and were equally allocated into an intervention group ($n = 15$) and a control group ($n = 15$). The intervention group received perineal massage according to a standardized Standard Operating Procedure (SOP), performed more than three times per week for six weeks before delivery, while the control group received routine antenatal care. Data were collected using a respondent characteristic questionnaire and a partograph observation sheet. The degree of perineal rupture was assessed by certified midwives according to the World Health Organization (WHO) classification. The research instruments demonstrated good validity and reliability, with a Cronbach's alpha value greater than 0.80. Data were analyzed using the Mann–Whitney test with a significance level of $\alpha = 0.05$ to determine differences between the intervention and control group.

Research Results

Table 1: Distribution frecakensi bebased on age

Age (years)	Intervensi (n=15)	%	Control (n=15)	%	Total (n=30)	%
< 20	3	20	2	13.3	5	16.6
20–35	7	46.6	6	40	13	43.3
> 35	5	33.3	7	46.6	12	40
Total	15	100	15	100	30	100

The distribution of fre cake nsi mei show that the proportion of responden berada in rentang productive age (20–35 years). Rentang age terenter kategori age reproduction sehat, where the physiological function of organs reproduction—termasuk eelasticity of the tissues perineum—is still somewhat at optimal condition. This study consists of a study by Yulinda & Utami (2023), who reported that ain Russia 20–35 years has a good physical and psychological preparation in her A copy RfC. Pregnant women berussia <20 years generally mehave a network perineum yang belum berkembang secara penuh, sementara mereka yang berussia >35 years meexperience decreased tissue elasticity due to physiological and hormonal changes (Hatijar et al., 2020). Oleh karena that, the age of the mother menso is one of the factors that can affect meme i affect efe massage activity perineum in meimprove elastiness Networking and Ireduce. my life.

Table 2: Distribution frequency of respondents based on age at pregnancy

Age (weeks)	Intervensi (n=15)	%	Control (n=15)	%	Total (n=30)	%
34-35	6	40	3	20	12	30
36-38	7	46.6	9	60	13	53.3
> 38	2	13.3	3	20	5	16.7
Total	15	100	15	100	30	100

The results showed that the proportion of respondents in the intervention group and control group. The age range of 34-38 weeks pregnant is a period that is recommended to start perineal massage. Beckmann & Garrett (2020) and Annisa et al. (2021) explain that perineal massage ideally starts at 34 weeks of pregnancy, when hormone levels increase and play a role in softening the pelvic floor muscle tissue. At the time of approaching childbirth, the perineum is also more responsive to massage stimulation, so that increasing elasticity can reach a maximum. Performing massage helps to prepare the perineum for delivery when the baby comes out.

Table 3: The level of compliance of respondents in perineal massage in the intervention group compared to the control group.

Frequency of Perineal Massage	Intervensi (n=15)	%	Control (n=15)	%	Total (n=30)	%
Compliance (18-24 times/week)	9	60	0	0	9	30
Moderately compliant (11-17 times/week)	4	26.7	0	0	4	13.3
Less adherence (3-10 times/week)	2	13.3	0	0	2	6.6
Not Compliant (Not Doing It)	0	0	15	100	15	50
Total	15	100	15	100	30	100

In the intervention group, the majority of respondents showed a good level of compliance in doing perineal massage (60%), while in the control group it was not able to do that. It is a very important factor in perineal massage. This finding is in line with the research by Prasetyorini &

Sukesni (2020), which reported that pregnant women who did perineal massage 3 times per week have a network perineum that is more flexible and tend to experience a rupture that is lighter than those that do not do it the routine way. Several factors that contribute to the level of obedience to these things among other things are knowing mother, supporting health, and internal motivation (Suliswati et al., 2023).

Tabel 4 distribution frekuensi derajat ruptur perineum

Derajat Ruptur	Intervensi (n=15)	%	Control (n=15)	%	Total (n=30)	%
Derajat 1	10	66.7	4	26.7	14	46.7
Derajat 2	5	33.3	11	73.3	16	53.3
Total	15	100	15	100	30	100

The results showed that there was a significant difference between the and the *control group* and ($\alpha = 0,05$). This result indicates that massage perineum may have a significant effect on the rate of perineal rupture in the mother.

Discussion

The results showed that most of the respondents in the intervention group experienced a first degree perineal rupture (66.7%), while in the control group the majority experienced a second degree perineal rupture (73.3%). These findings indicate that mothers who perform regular perineal massage from 36–38 weeks gestational age tend to experience milder perineal tears than mothers who do not perform perineal massage. Perineal massage plays a role in increasing the elasticity of the perineal tissue so that it is able to adapt to the strain when the head of the fetus is born. Good elasticity allows the perineum to open gradually and reduces excess pressure that can lead to moderate to severe perineum tearing. Thus, perineal massage is one of the effective nonpharmacological interventions in preventing the occurrence of higher degree perineal rupture. In line with the results of Prasetyorini and Sukesni's (2020) research which states that pregnant women who do perineal massage at least three times per week have a lower risk of experiencing severe perineal rupture compared to mothers who do not do perineal massage. This shows that the frequency and regularity of perineal massage have an effect on the severity of perineal tears during childbirth. Physiologically, perineal massage is known to

improve local blood flow, stimulate collagen production, and improve the flexibility of pelvic floor tissues and muscles. This condition makes the perineal tissue more flexible, relaxed, and not stiff when facing pressure during the second phase of labor (Fatimah & Lestari, 2022). This increased elasticity contributes to lowering the risk of heavier perineal tears. In addition, perineal massage can also reduce the stiffness of the perineal tissue so that the perineum can open more easily during the delivery process. The lack of perineal tears in mothers who receive perineal massage is caused by the condition of the tissues that are more elastic and relaxed, so that they are able to withstand strain during the birth process (Choirinissa, 2020).

According to the researcher's assumption, there are many factors that cause perineal laceration, one of which is parity, maternal age and childbirth position, so even though the results of the bivariate test were obtained that perineal massage results affect perineal laceration, but when viewed from the distribution of laceration frequencies in the intervention group, there are still many 1st degree perineal lacerations. Although perineal massage has been shown to reduce the severity of perineal rupture, this intervention does not completely eliminate the risk of rupture. This suggests that perineal rupture is multifactorial and is influenced by various other factors besides the elasticity of the perineal tissue.

The results of the research on factors that play a role in uterine rupture are age, where the age of the respondents >35 years as much as 33% of the respondents, this shows that not all respondents have optimal tissue conditions. At the age of >35 years, tissue elasticity tends to decrease due to degenerative processes and reduced connective tissue flexibility, so the risk of perineal rupture remains even after perineal massage. This condition may explain the persistence of perineal rupture in the intervention group, although it is mostly mild. Thus, the age of the mother is an important factor that affects the output of the perineal massage. Perineal massage has been shown to help reduce the degree of perineal rupture, but optimal results are more likely to be achieved in mothers of healthy reproductive age (Yulinda, A., & Utami, 2023). These findings confirm that the success of perineal massage is not only determined by the intervention itself, but is also influenced by maternal characteristics, in particular the age of the mother.

Other obstetric factors that contribute to perineal rupture are the position of delivery and the act of labor helpers. Certain birthing positions, such as lithotomies, are reported to have a higher risk of perineal rupture than physiological positions such as lateral or semi-seated. In addition, auxiliary techniques in controlling the discharge of the fetal head (perineal support)

greatly determine the degree of tearing that occurs (Aasheim et al., 2017). Thus, perineal massage should be understood as one of the effective preventive efforts to reduce the severity of perineal rupture, but optimal results can only be achieved if supported by other factors such as proper delivery techniques, control of the second period of labor, and the skills of labor assistants in protecting the perineum.

Non-pharmacological interventions that are effective, easy to implement, safe, and cost-effective can support childbirth preparation, especially for primigravida mothers. These interventions can be incorporated into routine education for pregnant women to improve their physical preparation as well as their understanding of the childbirth process. This also highlights the importance of midwives and health workers in providing education and guidance so that mothers can understand the benefits of perineal massage and practice it correctly. Performing perineal massage regularly has been shown to lower the risk of perineal rupture, improve comfort during childbirth, accelerate tissue healing, and reduce the risk of postpartum complications such as pain, infection, and sexual dysfunction..

Conclusion

This study aimed to evaluate the effect of perineal massage on the incidence of perineal rupture among women in the third trimester of pregnancy using a quasi-experimental design with a post-test-only control group approach. A total of 30 participants were divided into two groups: 15 pregnant women in the intervention group who performed perineal massage and 15 in the control group who received routine antenatal care without perineal massage. Data were analyzed using the Mann–Whitney test because the outcome variable was ordinal and did not meet the assumption of normal distribution. The results demonstrated that perineal massage had a significant effect on reducing the incidence of perineal rupture ($p = 0.021$; $p < 0.05$). Women who performed perineal massage were more likely to experience milder degrees of perineal rupture or no rupture at all compared with those in the control group. These findings indicate that perineal massage is an effective non-pharmacological intervention for improving perineal tissue elasticity and reducing the risk of birth-related perineal trauma during spontaneous vaginal delivery. The effectiveness of the intervention was also influenced by participants' adherence and the frequency of massage, with regular practice producing more favorable outcomes. In addition, maternal age and gestational age contributed to perineal tissue elasticity and the risk of rupture. Therefore, perineal massage is recommended as part of routine antenatal

care and pregnancy education classes to prevent perineal rupture and promote safer, more comfortable, and higher-quality vaginal births.

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