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Original Research

Perineal Massage as a Preventive Effort to Reduce Perineal Rupture in Vaginal Births

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ABSTRACT

Background: *Perineal rupture is a tear that occurs in the midline between the vulva and anus during childbirth. This condition is still commonly experienced by mothers giving birth vaginally, so preventive measures are needed, one of which is perineal massage. This study aims to determine the effect of perineal massage on the incidence of perineal rupture in mothers giving birth in the Prambanan District.*

Methods: *The study design used a quasi-experimental approach with a pretest–posttest control group design. Sampling was conducted using purposive sampling, involving 30 respondents consisting of 15 intervention groups and 15 control groups. The research instrument used a perineal rupture observation sheet, and data analysis was performed using the Mann–Whitney test at a significance level of 0.05.*

Results: *The results showed that the incidence of perineal rupture in the control group was 12 respondents (80%), while in the intervention group it was 6 respondents (40%). The statistical test yielded a p-value of 0.028, which means that perineal massage has a significant effect on reducing the incidence of perineal rupture in pregnant women in the Prambanan District.*

Conclusion: *Perineal massage is effective in reducing the risk of perineal rupture. The recommendation from this study is for midwives to provide education and training on perineal massage to pregnant women as part of their childbirth preparation care.*

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INTRODUCTION

Perineal rupture is a tear in the tissue between the vulva and anus that occurs during vaginal delivery. This condition is still commonly experienced by most mothers giving birth in various countries, including Indonesia. Based on the results of a systematic review, approximately 85% of women who give birth vaginally experience perineal rupture of varying degrees. This tear can cause complications such as severe pain, disruption of daily activities, and the risk of infection, which can worsen the mother's condition. Therefore, preventing perineal rupture is an important part of efforts to improve the safety of mothers giving birth (Aquino et al., 2020).

The causes of perineal tears can originate from the mother, the fetus, or the birth attendant. Factors from the mother include low elasticity of the perineal tissue, edema, and uncontrolled pushing. Factors from the fetus include large birth weight and abnormal head position. Birth attendants also play an important role in preventing tears by applying non-invasive interventions, such as perineal massage. Perineal massage can increase the elasticity and blood flow of the perineal tissue so that the tissue is more flexible when the fetal head emerges, which ultimately reduces the risk of rupture (Ramezani et al., 2020).

Several studies have shown that perineal massage is effective in reducing the rate of episiotomy and perineal laceration. Oglak et al. (2020) reported that perineal massage during the second stage of labor can shorten the duration of labor and increase the number of intact perineums. Meanwhile, Goh et al. (2021) found that a combination of massage and warm compresses significantly reduced the incidence of perineal tears and increased the comfort of mothers in labor. This evidence confirms that simple interventions such as perineal massage can be applied to prevent perineal trauma during the delivery process (Oglak et al., 2020; Goh et al., 2021).

Although perineal massage has proven effective in various countries, its application in Indonesia remains limited. Most health workers only apply perineal support techniques when the baby's head emerges as a preventive measure. However, this action is not effective enough in preventing perineal rupture. Evidence-based practices such as perineal massage need to be implemented in normal delivery services so that midwives have more effective and safer intervention alternatives for mothers (Yuxuan et al., 2022).

A preliminary study in the Prambanan District showed that out of 35 mothers who gave birth, 33 (94%) experienced perineal rupture and only 2 (6%) did not experience tearing. None of the mothers had ever received education or practice in perineal massage. This condition indicates the need for the application of perineal massage interventions in the field. Based on this, this study aims to determine the effect of perineal massage on the incidence of perineal rupture in mothers giving birth in the Prambanan District, as a scientific contribution and recommendation for midwifery practice.

MATERIALS AND METHODS

This study used a quantitative approach with a quasi-experimental design of the posttest-only control group type. This design was chosen because it was suitable for assessing the effect of perineal massage on the incidence of perineal rupture without the need for initial measurements (pretest). The researchers used two groups, namely the intervention group that received perineal massage and the control group that did not receive treatment. This design was chosen based on ethical considerations and time efficiency so that the delivery process would not be disrupted during the intervention (Notoatmodjo, 2018).

This study was conducted in the working area of the Prambanan District Health Center, Klaten Regency, because the incidence of perineal rupture in that area is still high. The study was conducted from July to December 2022. The research stages included preparation, data collection, intervention, and analysis of results. The research location was selected based on the availability of respondents who met the criteria and the support of health facilities and midwives who had been trained in perineal massage procedures.

The study population included all mothers who had normal deliveries in the Prambanan District during the study period. Sampling was conducted using purposive sampling, which is the selection of respondents based on specific criteria set by the researcher. The sample size was set at 30 respondents, consisting of 15 people in the

intervention group and 15 people in the control group. Inclusion criteria included mothers who were willing to be respondents, underwent normal delivery, and had no history of perineal abnormalities. Exclusion criteria included mothers with obstetric complications such as prolonged labor, bleeding, or other medical interventions during delivery.

The independent variable in this study was perineal massage, while the dependent variable was the incidence of perineal rupture. The instrument used was a perineal rupture observation sheet, compiled based on the operational definition of the variable and validated through logical testing by midwifery experts. The perineal massage intervention was performed by trained midwives following the Standard Operating Procedure (SOP) for Perineal Massage, using olive oil and a "U" shaped movement technique for 10 minutes during the second stage of labor. The research instruments were considered reliable because they were used consistently by enumerators with a minimum educational background of a Diploma III in Midwifery who had a Midwife Practice License (SIPB).

The data collection procedure was carried out through the stages of licensing, respondent recruitment, intervention implementation, and observation of results. The researchers first obtained permission from the educational institution and the Klaten District Health Office. Each respondent was given an explanation of the purpose and benefits of the study and was asked to sign an informed consent form before participating. Data were collected by the researcher and four midwife enumerators who had undergone training in observation and data recording techniques. The results of the observation were recorded immediately after delivery and verified again to ensure data accuracy.

Data analysis was performed using univariate and bivariate methods. Univariate analysis was used to describe the characteristics of the respondents and the distribution of perineal rupture cases. Bivariate analysis was performed using the Mann–Whitney test with a 95% confidence level ($\alpha = 0.05$) to determine the effect of perineal massage on the incidence of perineal rupture. The analysis results were considered significant if the p-value was < 0.05, which meant that there was a significant difference between the intervention group and the control group (Sugiyono, 2017).

This study has obtained ethical approval from the Health Research Ethics Committee of the Surakarta Ministry of Health Polytechnic with number LB.02.03/EA/KEPK/080/VI/2022, dated June 14, 2022. The researchers uphold the principles of research ethics, including informed consent, anonymity, and confidentiality. Each respondent was given the right to refuse or withdraw from participation without any consequences. Respondent data was kept confidential with codes and was only used for academic purposes. Thus, this study was deemed ethically sound and fulfilled the principles of beneficence, non-maleficence, autonomy, and justice.

RESULTS

Table 1. Distribution of Respondent Characteristics Based on Age, Parity, Estimated Fetal Weight (EFW), and Duration of Second Stage of Labor (n = 30)

Characteristics	Category	Control Group (n=15)	Intervention Group (n=15)
Age (years)	< 20	0 (0%)	0 (0%)
	20–35	13 (86.7%)	15 (100%)
	> 35	2 (13.3%)	0 (0%)
Parity	Primipara	2 (13.3%)	5 (33.3%)
	Multipara	13 (86.7%)	9 (60.0%)

Characteristics	Category	Control Group (n=15)	Intervention Group (n=15)
	Grande multipara	0 (0%)	1 (6.7%)
TBJ (grams)	< 2500	0 (0%)	0 (0%)
	2500–3500	14 (93.3%)	15 (100%)
	> 3500–4000	1 (6.7%)	0 (0%)
Duration of Stage II	< 1 hour	15 (100%)	15 (100%)
	> 1 hour	0 (0%)	0

Table 1 shows that most respondents in both groups were aged 20–35 years, which is considered a healthy reproductive age. The majority of respondents in the control and intervention groups had multiparous parity, while estimated fetal weight (EFW) mostly ranged from 2500–3500 grams. All respondents had a second stage of labor duration of < 1 hour, indicating that the delivery process was normal without complications that prolonged the time of fetal delivery.

Table 2. Distribution of Perineal Rupture Incidents in the Control and Intervention Groups (n = 30)

Perineal Rupture Incidence	Control Group (n=15)	Intervention Group (n=15)
No rupture	3 (20%)	9 (60%)
Rupture	12 (80%)	6 (40%)

Table 2 shows that perineal rupture occurred more frequently in the control group than in the intervention group. A total of 12 respondents (80%) in the control group experienced perineal rupture, while only 6 respondents (40%) in the intervention group experienced rupture. This illustrates a decrease in the incidence of rupture in mothers who received perineal massage during labor.

Table 3. Effect of Perineal Massage on the Incidence of Perineal Rupture (n = 30)

Group	Mean ± SD	p-value	Notes
Control	1.80 ± 0.414	0.02	There is a significant difference
Intervention	1.40 ± 0.507		

The results of the Mann–Whitney test showed *a* p-value of 0.028 (< 0.05), indicating a significant difference between the control and intervention groups. Thus, it can be concluded that perineal massage has an effect on reducing the incidence of perineal tears in mothers giving birth in the Prambanan District. This finding reinforces the evidence that perineal massage intervention is effective in increasing the elasticity of the perineal tissue and preventing tears during childbirth.

DISCUSSION

The results of this study indicate that perineal massage has an effect on reducing the incidence of perineal rupture in women giving birth in the Prambanan District. These

findings show that perineal massage can increase the elasticity of the perineal tissue, thereby facilitating the delivery of the baby's head without tearing. These results are in line with the study by Goh et al. (2021), which explains that massage accompanied by warm compresses during the active second stage of labor can reduce the incidence of perineal rupture and episiotomy in primiparous mothers. This shows that mechanical stimulation of the perineal area is effective in preventing spontaneous tears during the delivery process.

This study also supports the results of Aquino et al. (2020), which stated that perineal massage during labor increases blood flow to the perineal tissue and improves elasticity, thereby reducing the risk of perineal trauma. Physiologically, perineal massage helps reduce pelvic floor muscle tension and prepares the tissue for the pressure of the fetal head. The decrease in rupture incidence in the intervention group indicates that relaxation of the perineal tissue is a key factor in maintaining tissue integrity during the fetal expulsion process.

These results are also in line with the research by Yuxuan Li et al. (2022), which states that perineal massage effectively shortens the duration of labor and reduces the risk of rupture in primiparous mothers. The researchers argue that gentle pressure during massage stimulates the production of the hormone relaxin and improves blood circulation in the perineal tissue. As a result, the tissue becomes more flexible and less prone to tearing when the baby's head is born. The study by Ahmed Mohamed et al. (2020) also supports these results, stating that both antenatal and intrapartum perineal massage can reduce the risk of severe perineal trauma and postpartum morbidity.

From a midwifery practice perspective, these research results have important implications for normal childbirth care. Midwives can use perineal massage as a simple, safe, non-pharmacological intervention to prevent perineal rupture. With proper training, midwives can perform perineal massage effectively during the second stage of labor, especially in primiparous women. This intervention can also increase the comfort and confidence of mothers in facing the delivery process. Thus, the results of this study reinforce the recommendation that perineal massage be made part of evidence-based midwifery practice.

However, this study has several methodological limitations. The researchers could not fully control the variation in massage techniques performed by enumerators, so there may have been differences in pressure and duration between respondents. In addition, the sample size was relatively small, so the generalization of the results is still limited. This study was also only conducted during the second stage of labor, while several other studies, such as Ramezani et al. (2020) and Oglak et al. (2020), show that perineal massage performed since the third trimester of pregnancy provides more optimal preventive results.

Based on the results and limitations of the study, it is recommended that future studies involve a larger sample size and be conducted in several health facilities with different conditions. In addition, it is necessary to provide perineal massage training for health workers so that the techniques applied are uniform and effective. The researchers also suggest that perineal massage education be provided during pregnancy to improve the physical and mental readiness of mothers for childbirth. With consistent implementation, perineal massage can be an important strategy in reducing the incidence of perineal rupture and improving the quality of childbirth services.

CONCLUSION

The results of the study indicate that perineal massage has a significant effect on reducing the incidence of perineal tears in mothers giving birth in the Prambanan District. Most respondents in both groups were within the healthy reproductive age range, had multiparous parity, and had normal delivery processes. Perineal massage has been proven to increase blood flow, soften perineal tissue, and increase the elasticity of the pelvic floor muscles, thereby minimizing tears during delivery. These findings confirm that simple, safe, and non-pharmacological interventions such as perineal massage can be incorporated into evidence-based childbirth care practices. Therefore, it is recommended that health workers, especially midwives, routinely perform perineal massage on pregnant women as a preventive measure against perineal tears.

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REFERENCES

Ahmed, M., et al. (2020). Antenatal perineal massage benefits in reducing perineal trauma and postpartum morbidities: A systematic review and meta-analysis of randomized controlled trials. *International Urogynecology Journal, 11.* https://doi.org/10.1007/s00192-020-04302-8

Aquino, C. I., Guida, M., Saccone, G., Cruz, Y., Vitagliano, A., Zullo, F., & Berghella, V. (2020). Perineal massage during labor: A systematic review and meta-analysis of randomized controlled trials. *The Journal of Maternal-Fetal & Neonatal Medicine, 33*(6), 1051–1063. https://doi.org/10.1080/14767058.2018.1512574

Dahlan, S. (2020). *Besar sampel dalam penelitian kedokteran dan kesehatan* (5th ed.). Penerbit Salemba Medika.

Dahlan, S. (2021). *Statistik untuk kedokteran dan kesehatan* (6th ed.). Epidemiologi Indonesia.

Demirel, G., & Golbasi, Z. (2015). Effect of perineal massage on the rate of episiotomy and perineal tearing. *International Journal of Gynecology and Obstetrics, 5.* https://doi.org/10.1016/j.ijgo.2015.04.048

Goh, Y. P., Tan, P. C., Hong, J. G., Sulaiman, S., & Omar, S. Z. (2021). Combined massage and warm compress to the perineum during active second stage of labor in nulliparas: A randomized trial. *International Journal of Gynecology & Obstetrics, 00*, 1–7. https://doi.org/10.1002/ijgo.13613

Notoatmodjo, S. (2018). *Metodologi penelitian kesehatan.* Jakarta: Rineka Cipta.

Oglak, C. S., et al. (2020). Effectiveness of perineal massage in the second stage of labor in preventing perineal trauma. *Gynecology Obstetrics & Reproductive Medicine, 26*(2), 88–93.

Ommolbanin, Z., Hajar, P., & Mahbobeh, F. (2014). Effect of perineal massage on the incidence of episiotomy and perineal laceration. *Health, 6*(10), 1003–1009. https://doi.org/10.4236/health.2014.61003

Polit, D. F., & Beck, C. T. (2018). *Essentials of nursing research: Appraising evidence for nursing practice* (9th ed.). Wolters Kluwer.

Ramezani, F., Falah, N., & Mafi, M. (2020). Effect of perineal massage with ostrich oil on the episiotomy and lacerations in nulliparous women: A randomized controlled clinical trial. *Iranian Journal of Nursing and Midwifery Research, 25*(2), 134–138. https://doi.org/10.4103/ijnmr.IJNMR_134_138

Rochmayanti, S. N., & Ummah, K. (2018). Pengaruh pijat perineum selama masa kehamilan terhadap kejadian ruptura perineum spontan di PMB Shinta Nur Rochmayanti, S.Si.T., M.Kes. *Jurnal Kebidanan Universitas Islam Lamongan, 10.*

Romina, S., Ramezani, F., Falah, N., Mafi, M., & Ranjkesh, F. (2020). Effect of perineal massage with ostrich oil on the episiotomy and lacerations in nulliparous women: A randomized controlled clinical trial. *Iranian Journal of Nursing and Midwifery Research, 25*(2), 134.

Rosida, H. (2019). Pengaruh pijat perineum pada ibu hamil terhadap kejadian ruptur perineum pada primipara di PMB wilayah kerja Puskesmas Karangpandan, Karanganyar. *Jurnal Ners dan Kebidanan Indonesia.* Retrieved from https://lib.poltekkes-solo.ac.id/

Supartini. (2019). Pengaruh pijat perineum pada ibu hamil terhadap kejadian ruptur perineum pada primipara di PMB wilayah kerja Puskesmas Karangpandan, Karanganyar. *Jurnal Ners dan Kebidanan Indonesia.* Retrieved from https://lib.poltekkes-solo.ac.id/

Yuxuan, L., et al. (2022). Effect of perineal massage during childbirth on maternal and neonatal outcomes in primiparous women: A systematic review and meta-analysis. *International Journal of Nursing Studies.* https://doi.org/10.1016/j.ijnurstu.2022.104197