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The Effect of Health Education on Pregnant Women's Knowledge About Perineal Massage in Allang Village, West Leihitu District

Syahfitrah Umamity[1]✉, **Arindiah P Windari**[1]

[1]Nursing Science, STIKes Maluku Husada, Indonesia

✉Corresponding author: **Syahfitrah Umamity**; email: Syahfitrah.umamity@gmail.com

Abstract

Background: Perineal rupture is a common complication of vaginal delivery, especially among primigravida mothers, and can lead to maternal morbidity and discomfort. Limited knowledge among pregnant women regarding preventive measures, such as perineal massage, contributes to the high risk of perineal trauma during childbirth. Therefore, effective health education is needed to improve pregnant women's understanding of perineal massage as a non-pharmacological intervention to increase perineal elasticity. **Objective**: To emphasize the target of the research This study aimed to analyze the effect of health education on pregnant women's knowledge regarding perineal massage. **Method**: This study employed a quasi-experimental design with a one-group pretest–posttest approach involving eight pregnant women in Allang Village selected using total sampling. Data were collected using a 20-item knowledge checklist administered before and after the health education intervention. Data normality was tested using the Shapiro–Wilk test, and differences in knowledge scores were analyzed using the Paired Sample t-Test. Ethical principles, including informed consent and confidentiality, were applied throughout the study. **Results**: The results showed a significant increase in pregnant women's knowledge after the health education intervention, with mean knowledge scores rising from 6.88 to 17.00 (p = 0.000). **Discussion**: The increase in knowledge can be explained by learning theory, which suggests that structured health education improves understanding and retention of information. Health education enhances cognitive processes by providing clear information, demonstrations, and opportunities for discussion, thereby increasing awareness of perineal massage as a preventive strategy for perineal rupture. **Conclusion**: Health education significantly improves pregnant women's knowledge about perineal massage and can be applied as an effective educational strategy in antenatal care to support the prevention of perineal rupture during childbirth.

Keywords: health education, knowledge, perineal massage, pregnant women's

INTRODUCTION

Pregnancy is a crucial period that requires careful attention to the physical, emotional, and cognitive aspects of maternal health [1]. Optimal preparation during pregnancy plays an essential role in maintaining the well-being of both mother and fetus, ensuring a smooth labor process and supporting recovery after childbirth [2]. One important aspect that is often overlooked is the protection of the perineal area, the tissue located between the vagina and the anus, which is highly vulnerable to rupture during vaginal delivery [3]. Perineal rupture can lead to pain, bleeding, swelling, impaired breastfeeding, and may negatively affect the mother's quality of life postpartum [4].

Perineal rupture commonly occurs due to the pressure of the fetal head, episiotomy procedures, or inadequate elasticity of the perineal tissues. The risk is particularly higher among primigravida mothers, whose perineal tissues tend to be less flexible [5]. Other contributing factors include maternal age, fetal birth weight, delivery positions, and the skill of birth attendants. Therefore, interventions that increase perineal elasticity are essential for prevention [6]. One non-pharmacological method proven effective is perineal massage, a gentle massage technique applied to the perineum starting at 34–36 weeks of gestation. Perineal massage improves local blood flow, softens tissues, and prepares the mother's body for childbirth [7]. Various studies show that regular perineal massage reduces the risk of perineal rupture, particularly severe degrees of tearing.

Despite its proven benefits, the practice of perineal massage remains low, especially in regions with limited access to maternal health information. Lack of knowledge, limited health education from providers, and minimal community awareness become major barriers [8]. Health education is therefore essential to enhance maternal understanding and motivation to adopt preventive practices that significantly improve delivery outcomes [9].

Globally, the World Health Organization (WHO) reported 2.7 million cases of perineal trauma in 2020, with projections reaching 6.3 million by 2050—approximately half of which occur in Asia [10]. In Indonesia, the prevalence of perineal trauma during spontaneous vaginal delivery is 75%, with 57% linked to episiotomy and 29% due to spontaneous rupture [11]. In Central Java, 26.22% of 483,033 live births in 2022 involved perineal injury. Another study revealed that 83% of women delivering vaginally experienced perineal rupture, with 63% requiring suturing [12]. Factors such as parity, fetal birth weight, delivery technique, and episiotomy significantly influence the likelihood of perineal injury. Although perineal massage is recommended as an effective preventive intervention, its implementation remains suboptimal [13].

In Maluku, a study reported that 78.1% of 64 parturient women experienced perineal rupture, with a higher prevalence observed among primiparous mothers (90.4%) compared to multiparous mothers (68.8%) [14]. These findings underscore that perineal rupture constitutes a significant maternal health concern, thereby necessitating more comprehensive and targeted preventive interventions [15].

In Allang Village, Leihitu Barat District, the incidence of perineal rupture remains high. Data from the Allang Health Center showed that in 2023, 18 out of 42 pregnant women (42.86%) experienced perineal rupture. In 2024, there were 47 pregnant women with 15 rupture cases (31.91%). Between January and April 2025, 7 of 13 pregnant women (53.85%) experienced perineal rupture, indicating an increasing proportion of cases despite a decrease in the number of deliveries. An interview with the local midwife revealed that ruptures most often occurred in primigravida mothers with risk factors such as narrow birth canals and large fetal size. These conditions indicate that the level of knowledge among pregnant women regarding perineal rupture prevention—including perineal massage—is still low in Allang Village. Health education becomes an essential

intervention to improve mothers' understanding and foster positive behaviors in preparation for safer childbirth with minimal trauma. Based on this background, the present study aims to analyze the effect of health education on the knowledge of pregnant women regarding perineal massage in Allang Village, Leihitu Barat District.

METHOD

This study used a quasi-experimental one-group pretest–posttest design to evaluate the effect of health education on pregnant women's knowledge of perineal massage [16]. The study was conducted from May to June 2025 in Allang Village, within the working area of Allang Public Health Center. The population consisted of third-trimester pregnant women, with a sample of 8 participants selected through purposive sampling based on inclusion criteria: healthy pregnancy, ability to read and write, and willingness to participate.

Data were collected using a standardized health education procedure and a validated 20-item knowledge checklist administered before and after the intervention. Data analysis included univariate analysis, normality testing using the Shapiro–Wilk test, and bivariate analysis using the Paired Sample t-test with a significance level of $p < 0.05$ [17]. Ethical principles were applied throughout the study, including informed consent, voluntary participation, confidentiality, and the right to withdraw at any time [18].

RESULTS AND DISCUSSION

The demographic and obstetric characteristics of the eight respondents. All were within the healthy reproductive age (20–35 years), indicating an optimal age range for pregnancy. In terms of education, most respondents had completed senior high school (62.5%), followed by bachelor's degree holders (25%) and one university student (12.5%). Regarding parity, 75% were multiparous women, meaning they had prior childbirth experience, while 25% were primiparous. Gestational ages ranged from 36 to 40 weeks, with the highest distribution at 36 and 37 weeks (25% each). All respondents were in the third trimester and approaching labor.

Most respondents were expected to deliver in September (87.5%), with the remainder projected to give birth in August. This information is essential in planning timely interventions prior to delivery.study results showed that the total number of respondents used was 57 elderly individuals, most of whom were categorized as elderly, with 41 individuals (71.9%), followed by middle-aged individuals, with 11 individuals (19.3%). Based on gender, the majority of respondents were female, with 38 individuals (66.7%), and male, with 19 individuals (33.3%). In terms of educational level, most respondents had a high school education, with 23 individuals (40.4%), followed by those with junior high school education, with 20 individuals (35.1%). Respondents had good knowledge about Osteoarthritis, with 26 respondents (45.6%) having good knowledge and 31 respondents (54.4%) having poor knowledge. Respondents who experienced Osteoarthritis complaints based on the Lequesne index with mild severity amounted to 12 respondents (21.1%), moderate severity amounted to 9 respondents (15.8%), severe severity amounted to 6

respondents (10.5%), very severe amounted to 6 respondents (10.5%), and the most common was extremely severe severity amounting to 20 respondents (35.1%) (Table 1).

Table 1. Characteristic of respondents

Category	Frequency	Percentage (%)	Category
Reproductive Age			
Healthy (20–35 years)	8	100	Healthy (20–35 years)
At-risk (<20 or >35 years)	0	0	At-risk (<20 or >35 years)
Educational Level			
Senior High School	5	62.5	Senior High School
University Student	1	12.5	University Student
Bachelor's Degree	2	25	Bachelor's Degree
Parity			
Primipara	2	25	Primipara
Multipara	6	75	Multipara
Gestational Age			
36 weeks	2	25	36 weeks
37 weeks	2	25	37 weeks
38 weeks	2	25	38 weeks

Table 2. Increase in knowledge scores after education

Respondent Number	Score		Score Increasing	
	Pre-test	Post-test	Point	Percentage (%)
1	5	15	10	200,00
2	6	15	9	150,00
3	6	16	10	166,67
4	7	17	10	142,86
5	7	18	11	157,14
6	7	18	11	157,14
7	8	18	10	125,00
8	9	19	10	111,11
Mean	**6,875**	**17**	**10,125**	**151,24**

The results indicate that the most frequent pretest score was 7 (37.5%). A score of 6 was reported by two respondents (25%), while scores of 5, 8, and 9 were each obtained by one respondent (12.5%). This distribution suggests that, prior to receiving health education, respondents' knowledge levels were generally moderate. Only one respondent achieved the highest pretest score (9), and one respondent the lowest (5), indicating that overall understanding of perineal massage remained suboptimal.

Following the intervention, the most frequently observed score was 18 (37.5%), followed by 15 (25%). Scores of 16, 17, and 19 were each recorded in 12.5% of respondents. These findings demonstrate a marked improvement in knowledge scores, reflecting the effectiveness of the educational intervention. The majority of respondents attained moderate-to-high post-test scores.

Bivariate analysis was conducted to determine the effect of health education on pregnant women's knowledge about perineal massage before and after the intervention [19]. Since the sample consisted of only eight participants and the data were paired (pre-post testing) with ratio scale measurements, a normality test was first performed using the Shapiro–Wilk test [20, 21]. The Shapiro–Wilk test shows that the significance values for both pre-education (0.792) and post-education (0.239) exceed the threshold of 0.05. This indicates that both datasets are normally distributed. Because the assumption of normality was met, parametric analysis using the paired t-test was considered appropriate.

The paired samples t-test reveals a mean difference of –10.125 between pretest and post-test scores, with a standard deviation of 1.727 and a standard error of 0.611. The 95% confidence interval (–11.569 to –8.681) does not include zero, confirming a statistically significant difference. The t-value of –16.583 (df= 7) and the significance value of 0.000 ($p < 0.05$) demonstrate that the intervention had a highly significant effect. Thus, the health education provided was proven to effectively increase the participants' knowledge. The results of this study indicate a significant improvement in pregnant women's knowledge of perineal massage after receiving health education. The low pretest score reflects limited initial understanding, which may be influenced by restricted access to maternal health information in rural areas [22, 23]. After the intervention, knowledge scores increased substantially, indicating effective absorption of the educational material [23]. This finding is consistent with cognitive learning theory, which emphasizes that clear and structured education enhances knowledge acquisition. Statistical analysis confirmed a significant difference between pretest and posttest scores (p= 0.000), supporting the effectiveness of the intervention. Increased knowledge may also encourage preventive health behaviors, as explained by the Health Belief Model [24]. Overall, tailored health education is an effective strategy to improve maternal health literacy and promote safer childbirth practices, particularly in rural settings.

CONCLUSION

The knowledge of pregnant women regarding perineal massage prior to receiving health education was categorized as moderate, indicating limited initial understanding of the topic. Following the health education intervention, there was a significant increase in knowledge among all participants. Statistical analysis further confirmed that the health education provided had a meaningful and significant effect on improving the knowledge of pregnant women in Allang Village, Leihitu Barat District. Therefore, health education can be considered an effective strategy for enhancing maternal health literacy and supporting safer childbirth preparation.

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