

THE ASSOCIATION BETWEEN BIRTH WEIGHT AND THE OCCURRENCE OF PERINEAL RUPTURE IN TALANG PUBLIC HEALTH CENTER, TEGAL DISTRICT

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Abstract

The weight of the newborn is a risk factor for perineal tearing when spontaneously delivered. This is because the perineum is not strong enough to withstand stretching of the baby's head when the baby weighs a considerable amount. According to the data obtained from Talang Public Health Center, in the number of births in January - October 2021, 28% of mothers experienced perineal rupture during vaginal delivery. This study aimed to determine the relationship between newborn weight and the incidence of perineal rupture. A quantitative with a correlational design was used in this research. The data was collected from January to May 2022 in Talang Public Health Center. The sample used in this research was 119 mothers who gave birth. We used secondary data and analyzed it using SPSS with the chi-square statistical test. Based on the research results, it can be concluded that there is no significant relationship between the birth weight of the baby and the incidence of perineal rupture in Talang Health Center with the value of $p = 0.650 > \alpha = 0.05$. This may be due to other factors such as maternal, fetal, birth, and birth assistance factors. Hopefully, this research will provide health workers and the community with knowledge so pregnant women can have regular ANC visits to monitor fetal development.

Keywords: Newborn Birth Weight, Perineal Rupture

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1. Introduction

The average birth weight is between 2,500 grams and 4,000 grams. The heavier the baby born, the greater the risk of perineal tearing. Birth weight is a risk factor for perineal tearing in spontaneously delivered babies weighing more than 4000 grams. However, some mothers give birth to babies weighing 2500-4000 grams, and perineal tears still occur. This is because the perineum is not strong enough to withstand the pressure of a large-birth-weight baby's head, which often causes the perineum to tear during the process of delivering a large-birth-

weight baby. Perineal rupture is a birth canal injury that occurs during vaginal delivery. It is caused by severe pressure and stretching on the perineum, leading to tears and varying degrees of vaginal tears.^[1]

The baby's birth weight is a significant risk factor for perineal rupture during childbirth, with larger babies posing a greater risk². This study aimed to establish the link between birth weight and perineal tearing. Data from Talang Community Health Center in Tegal Regency revealed 121 live births from Jan-Oct 2021, with 34 (28%) mothers

experiencing perineal rupture during vaginal deliveries. The number of pregnant women in the Talang sub-district ranks 4th in the Tegal Regency, following the Tarub, Margasari, and Adiwerna sub-districts. Talang District significantly contributes to maternal mortality in the Tegal Regency.

2. Method

The research conducted in this study was quantitative with a correlational research design. The research was conducted in Talang Community Health Center, Tegal Regency, from January to May 2022. The sample used in this research consisted of 119 birthing women who met the criteria to be included and excluded. The inclusion criteria in this study were all mothers who gave birth spontaneously in Talang Public Health Center, and the exclusion criteria in this

study were women who gave birth by cesarean section. We collect data through Talang Public Health Center medical records and analyze them with SPSS with a Chi-square statistical test.

3. Result and Discussion

Based on statistical tests, nine mothers gave birth to babies with birth weights <2500 grams and >4000 grams, while 110 mothers gave birth to babies with average birth weights (2500-4000 grams). Among the nine babies with extreme birth weights, six mothers experienced perineal rupture, while three did not. Meanwhile, of the 110 mothers who gave birth to babies with average birth weight, 81 mothers had an episiotomy, and 29 mothers did not have an episiotomy. The detailed statistical test results are shown in Table 1.^[13]

Table 1. Birth Weight and Incidence of Perineal Rupture Crosstabulation

			Incidence of Perineal Rupture		
			Without Perineal Rupture	With Perineal Rupture	Total
Berat Badan Lahir	Tidak Normal	Count	3	6	9
		% within Berat Badan Lahir	33.3	66.7	100.0
		% within Kejadian Ruptur Perineum	9.4	6.9	7.6
	Normal	% of Total	2.5	5.0	7.6
		Count	29	81	110
		% within Berat Badan Lahir	26.4	73.6	100.0
		% within Kejadian Ruptur Perineum	90.6	93.1	92.4
		% of Total	24.4	68.1	92.4
		Total	Count	32	87
% within Berat Badan Lahir	26.9		73.1	100	
% within Kejadian Ruptur Perineum	100		100	100	
% of Total	26.9		73.1	100	

Table 2. Chi-Square Tests Birth Weight and Incidence of Perineal Rupture

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.206 ^a	1	.650		
Continuity Correction ^b	.004	1	.950		
Likelihood Ratio	.197	1	.657		
Fisher's Exact Test				.700	.454

Linear-by-Linear Association	.204	1	.652
N of Valid Cases	119		

a. 1 cells (25,0%) have expected count less than 5. The minimum expected count is 2,42.

b. Computed only for a 2x2 table

The findings of the Safitri study showed that there were 71 cases of perineal rupture (32.9%) consisting of 46 mothers who gave birth with birth weight >3200 grams (64.8%) and 25 mothers who gave birth with birth weight <3200 grams (35.2%). Based on the results of this study, it can be concluded that there is a significant relationship between the weight of newborns and the incidence of perineal rupture. In this study, the results of the chi-squared statistical test with continuity correction were obtained, namely the value of $p = 0.650 > \alpha = 0.05$, so it can be concluded that there is no significant relationship between the birth weight and the incidence of perineal rupture in Talang Public Health Center. Normal newborns are born at 37 to 42 weeks gestational age and 2500 to 4000 grams birth weight.

Factors that may contribute to perineal rupture include maternal factors such as age, birth interval, parity, and delivery method; fetal factors such as presentation, weight, shoulder dystocia, and hydrocephalus; and labor factors such as vacuum extraction, embryotomy, and precipitous birth. The latter is caused by factors that aid in childbirth.^[4,12]

Research conducted by Heny found a relationship between the birth weight of the baby and the incidence of perineal rupture ($p = 0.021$). The study showed that in primiparous mothers, a higher birth weight of the baby was associated with a higher rate of perineal rupture. This means that a significant birth weight of the baby can increase the risk of perineal rupture. The reason for this is that the perineum may not be strong enough to withstand the strain of the baby's head with a larger baby. Therefore, during the birth process of a baby with a significant birth weight, perineal rupture is more likely to occur.^[5]

Perineal rupture happens naturally in the perineal area during childbirth. It can occur due to stiff perineum, precipitate birth, improper delivery management, lack of good cooperation with the mother during delivery, the mother's previous childbirth experiences, the newborn's weight, and the use of vacuum or forceps during delivery.^[6,16]

According to the research conducted at the Talang Public Health Center, there were 119 incidents of perineal rupture. However, the study found no significant relationship between the weight of newborn babies and the incidence of perineal rupture. Other factors, like a stiff perineum, can contribute to this condition. A stiff perineum can hinder the second stage of labor, posing a risk to the baby and causing extensive damage to the birth canal.^[7]

In addition, various factors can contribute to perineal tearing, as indicated by Nurulicha. These factors include gestational spacing (p -value 0.038/OR 1.023), birth weight (p -value 0.028/OR 1.14), and the mother's age at childbirth (p -value 0.034/OR 1.141). Interestingly, the number of deliveries did not seem to impact the occurrence of perineal rupture (p -value 0.058).^[8,10]

Perineal rupture can be caused by two main factors: maternal and fetal. Maternal factors include age, number of previous births, fast labor, inability to control pushing, rushed delivery, swelling, weak perineum, varicose veins, narrow pubic arch, and narrow episiotomy. Fetal factors include a larger baby, abnormal positioning, breech birth, and shoulder dystocia.^[9,14,15]

While birth weight is a contributing factor to perineal rupture, several other factors can also lead to this condition, including presentation abnormalities, precipitate birth, maternal inability to control

pushing, perineal fragility, narrow pubic arches, and edema. To mitigate the risk of perineal rupture, regular antenatal care (ANC) visits, at least six times during pregnancy, are recommended. These visits can help monitor fetal development and maternal health, thereby reducing the likelihood of complications during the birthing process.

4. Conclusion

The sample included 119 mothers who gave birth. The results indicated that six out of nine mothers with babies of abnormal birth weight experienced perineal rupture, while 81 out of 110 mothers with babies of average birth weight experienced perineal rupture.

The results of the Chi-square statistical test with continuity correction showed that the value of $p = 0.650 > \alpha = 0.05$. Therefore, it can be concluded that there is no significant relationship between the birth weight of the baby and the incidence of perineal rupture at the Talang Public Health Center, Tegal Regency.

Perineal rupture can result from factors such as abnormal fetal presentation, rapid labor, maternal inability to control pushing, weak perineum, narrow pubic arches, and swelling. To prevent this, regular antenatal care is advised to monitor fetal development, and expectant mothers should receive education on preparing for childbirth and facilitating the delivery process.

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