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RESEARCH ARTICLE

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The Relationship of Parity, Age And Fetal Weight Interpretation With A Rip of The Road of Birth in A Mom In Membership in Beteleme Puskesmas Morowali Regency

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Abstract

Introduction: In developing countries, the main causes of maternal death are direct obstetric factors, namely postpartum hemorrhage, infection, and eclampsia. Perineal rupture can lead to postpartum hemorrhage. **Objective**: The aim of this study was to determine the causes of birth canal tears during childbirth at the Beteleme Health Center. **Method**: This descriptive study employed a cross-sectional approach. The sample consisted of 30 mothers who experienced birth canal tears, selected using a total sampling technique. Data were collected using observation sheets, and the Chi-Square statistical test was used for analysis with a significance level of $\alpha = 0.05$. **Results**: Of the 30 respondents, the majority (80%) were in the age group of 20–33 years. Most of the respondents (83.3%) were primiparous (first-time mothers). Regarding fetal weight, 25 mothers (83.3%) delivered babies weighing less than 3800g, while 5 mothers (16.7%) delivered babies weighing over 3800g. Statistical analysis revealed that the Sig value for the age category was > 0.05, indicating no significant relationship between age and birth canal tears. However, the Sig values for parity and fetal weight were < 0.05, indicating a significant relationship between these factors and the incidence of birth canal tears. **Conclusion**: This study concluded that there is no relationship between age and the incidence of birth canal tears, but there is a significant relationship between parity and fetal weight with the incidence of birth canal tears in mothers giving birth at the Beteleme Health Center.

Keywords: Birth canal tear, Parity, Fetal weight, Postpartum hemorrhage, Maternal health, Beteleme Health Center

Introduction

The 2017 Indonesia Demographic and Health Survey (IDHS) reported an infant mortality rate (IMR) of 24 per 1,000 live births and an under-five mortality rate (U5MR) of 32 per 1,000 live births. While the U5MR has met the Sustainable Development Goals (SDGs) target of 25 per 1,000 live births by 2030, the number of under-five deaths in Indonesia remained high, with 28,158 deaths recorded in 2020. Of these, 71.97% (20,266 deaths) occurred during the neonatal period, 19.13% (5,386 deaths) during the post-neonatal period, and 8.9% (2,506 deaths) between 12–59 months. Pneumonia was the leading cause of death in the post-neonatal period (14.5%), followed by diarrhea (9.8%). Among children aged 12–59 months, parasitic infections were the leading cause of death (42.83%), followed by pneumonia (5.05%) and diarrhea (4.5%) (Ministry of Health, 2021).(1)

In 2021, the number of maternal deaths in the districts/cities of Central Sulawesi Province totaled 109 cases, with the highest number occurring in Donggala and Parigi Moutong regencies, each reporting 12 cases. In contrast, the lowest maternal mortality was recorded in Banggai Laut and Toli-Toli regencies, while Morowali placed third with 11 maternal deaths (Dinkes SULTENG 2021). In developing countries, the leading causes of maternal mortality are direct obstetric factors, such as postpartum hemorrhage, infection, and eclampsia. Perineal rupture can lead to postpartum hemorrhage, which remains a significant issue due to its direct impact on maternal health and its potential to cause death.

Perineal tears are influenced by several factors, including maternal, fetal, and obstetric assistance factors. Maternal factors include uncontrolled precipitate labor, inadequate management during delivery, and the patient's inability to stop pushing. When these factors are not properly managed, the risk of perineal rupture and subsequent hemorrhage increases (2). Hastily managed labor with excessive fundal pressure, edema, and fragility of the perineum, as well as vulvar varicosities, can weaken the perineal tissue. A narrow pubic arch and a constricted pelvic outlet can also exert pressure on the fetal head, directing it toward the posterior, which may necessitate an extended episiotomy. Fetal factors include large baby size, abnormal head positions (e.g., face presentation), breech delivery, difficult shoulder dystocia, and congenital anomalies such as hydrocephalus. Obstetric assistance factors include improper pushing positions during labor, which can contribute to perineal trauma and complications during delivery (Anggraini, 2017).

Baby birth weight can affect the second stage of labor. The average birth weight is typically between 2,500 and 4,000 grams. Larger babies increase the risk of perineal rupture. From the perspective of parity, perineal rupture is more common in primiparas, but it can also occur in multiparas. Common causes in mothers include precipitate labor, excessive pushing, edema, and fragility of the perineum, as well as the flexibility of the birth canal. Additionally, interventions during delivery, such as the use of forceps or assisted delivery, can further contribute to the likelihood of perineal rupture (Pemiliana,2019). Birth weight is the weight of the baby measured within the first 24 hours of birth. A larger birth weight increases the risk of perineal rupture. A large baby is defined as one weighing more than 4,000 grams at birth. Perineal tears are more likely to occur during the delivery of large babies. This happens because the perineum may not be strong enough to withstand the stretching caused by the baby's head, which is heavier in larger babies. As a result, the likelihood of perineal rupture increases during the birth process of larger babies (3).

The ideal spacing between pregnancies also impacts maternal health. A proper gap between pregnancies allows for optimal recovery of the mother's reproductive health. However, if the interval is too short, it may negatively affect health, and an excessively long gap can also be detrimental. Research shows that mothers with a gap of more than 5 years between children experience a higher incidence of perineal rupture. This is because the perineum becomes stiff and the muscles lose their elasticity, unlike in subsequent pregnancies where the tissues have been stretched (Sigalingging, 2018).

Primipara refers to a woman who has given birth to a live baby for the first time. Mothers with a parity of one (primiparas) are at greater risk of perineal rupture compared to those with higher parity. This is because the birth canal has not been stretched before, and the perineal muscles are less elastic, making them more prone to tearing during the first birth.

Methods

This study employs a descriptive approach with a cross-sectional design to describe the occurrence of perineal rupture in parturient women at Beteleme Health Center. The study population consists of 15 parturient women who experienced perineal rupture at Beteleme Health Center. The sampling technique used is total sampling, where all accessible cases that meet the criteria are included. This research utilizes two variables: the independent variable (causal factors) and the dependent variable (outcome influenced by the independent variable). The data used are quantitative, including both primary and secondary data. Data analysis is performed through data tabulation and statistical testing using Chi-Square with SPSS to determine the relationship between variables, with a significance level of $\alpha = 0.05$.

Results

Respondent characteristics

Tabel 5.1 Respondent characteristics

Age	n	%
< 20 Years	5	16.7
20 – 33 Years	24	80.0
>33 Years	1	3.3
Total	30	100
Parity	n	%
Primiparous	25	83.3
Multiparous	5	16.7
Total	30	100
Fetal Weight	n	%
≥3800 gram	5	16.7
<3800 gram	25	83.3
Total	30	100

Based on the table above, of the 30 respondents, the majority are in the age group of 20-33 years (80.0%), with 5 respondents (16.7%) in the age group under 20 years, and 1 respondent (3.3%) in the age group above 33 years. Regarding parity, the majority of respondents are primiparas, with 25 parturient women (83.3%) in this group, and 5 parturient women (16.7%) in the multipara group. In terms of estimated fetal weight, the majority of respondents had a fetal weight less than 3800g, with 25 parturient women (83.3%), while 5 parturient women (16.7%) had a fetal weight above 3800g.

Bivariate analysis

Tabel 5.2 Relationship of Age with Rip of The Road of Birth

Usia	Derajat I		Derajat II		*P-Value**
	f	%	f	%	
< 20 thn	1	3.3	4	13.3	0.307
20 – 33thn	10	33.3	14	46.7	
>33thn	1	3.3	0	0.0	
Jumlah	12	40.0	18	60.0	

**Chi-Square*

Based on the table above, it is known that out of 30 parturient women, 12 women (40%) experienced first-degree perineal tears, and 18 women (60%) experienced second-degree perineal tears, with a P-Value of 0.307.

Tabel 5.3 Relationship of Parity with Rip of The Road of Birth

Parity	Degree I		Degree II		*P-Value**
	f	%	f	%	
Primiparous	12	40.0	13	43.3	0.046
Multiparous	0	0.0	5	16.7	
Total	12	40.0	18	60.0	

**Chi-Square*

Based on the table above, it is known that out of 30 parturient women, 12 women (40%) experienced first-degree perineal tears, and 18 women (60%) experienced second-degree perineal tears. The majority of respondents in the primipara group, with 15 women (83.3%), experienced second-degree perineal tears, with a P-Value of 0.046.

Tabel 5.4 Relationship of Foetal Weight with Rip of The Road of Birth

Parity	Degree I		Degree II		*P-Value*
	f	%	f	%	
≥3800gr	12	40.0	13	43.3	0.046
<3800gr	0	0.0	5	16.7	
Total	12	40.0	18	60.0	

Based on the table above, it is known that out of 30 parturient women, 12 women (40%) experienced first-degree perineal tears, and 18 women (60%) experienced second-degree perineal tears. The majority of respondents in the group with a birth weight of less than 3800 grams, with 15 women (83.3%), experienced second-degree perineal tears, with a P-Value of 0.046.

Discussion

Based on the data analysis, the P-Value between age and perineal tear occurrence in parturient women was 0.307 (Sig > 0.05), indicating that there is no significant relationship between age and perineal tear occurrence. However, the analysis of parity and fetal birth weight (TBJ) with perineal tear occurrence yielded P-Values of 0.046 (Sig < 0.05) for both, indicating that there is a significant relationship between parity and TBJ with the occurrence of perineal tears in parturient women at Puskesmas Beteleme.

This study aligns with research conducted by [4], where univariate analysis showed that 48 mothers (50%) experienced perineal tears. Of these, 9 respondents (9.4%) were at risk due to age (< 20 years and ≥ 35 years), 47 respondents (49%) were primigravida, 22 respondents (22.9%) had high-risk pregnancy intervals, and 23 respondents (24%) had abnormal birth weights. Based on bivariate analysis, no significant relationships were found between age and perineal tear (p value 0.726), parity and perineal tear (p value 0.256), pregnancy interval and perineal tear (p value 1.00), or birth weight and perineal tear (p value 0.632).

Previous research conducted by (4) showed that the chi-square test resulted in a p-value of 0.022 < α (0.05), indicating a significant relationship between parity and perineal rupture. Similarly, a study by (5) concluded, based on chi-square calculations, that parity has a significant relationship with perineal laceration, with a p-value of 0.000. The highest incidence was found in the multipara group, accounting for 32.9%, with an odds ratio (OR) of 0.76.

This study does not align with the research conducted by [7], which concluded, based on chi-square calculations, that maternal age has a significant relationship with the occurrence of perineal laceration, with a p-value of 0.000. Another study, based on chi-square testing, obtained a p-value of 0.038 < 0.05, indicating a significant relationship between age and perineal rupture. (4)

Perineal laceration is a common occurrence in women who deliver vaginally, and the degree of laceration can vary between individuals. The term "degree" refers to the level or extent of the tear, while the "perineum" is the area between the vulva and anus, which plays a crucial role in vaginal delivery. A second-degree perineal rupture involves a tear extending into the vaginal mucosa, posterior commissure, perineal skin, and perineal muscles. Some researchers believe that most women experience second-degree perineal rupture, which represents the level of tissue tearing in the perineum during normal childbirth. (Sarwono 2009 dalam Doni, 2017).

In this study, nearly all respondents were within the age range of 20-33 years, which is considered a lower-risk age group. For women under 20 years old, reproductive organs are not fully matured, which increases the likelihood of complications during pregnancy and childbirth. Additionally, the strength of the perineal muscles and abdominal muscles is not yet optimal, which often leads to prolonged or obstructed labor, requiring medical intervention.

The majority of the participants in this study were primipara, and one of the risk factors for perineal rupture is primigravida. This is supported by the theory that parity has a significant impact on the occurrence of perineal rupture during labor. This happens because the perineum is generally elastic, but it can be found to be rigid, especially in women experiencing their first pregnancy (primigravida).

According to the results of this study, parity and birth weight (TBJ) have a significant relationship with perineal rupture. This is because in primipara, the soft tissues of the perineum and the birth canal structure will experience damage during the first childbirth. The perineal muscles will stretch, and since this is the mother's first delivery, she has no previous experience with childbirth, making it more prone to injury.

Conclusion

This study found no significant relationship between age and perineal tear occurrence, but it did find a significant association between parity and fetal birth weight (TBJ) with perineal tears. Women with higher parity and larger birth weight infants were at greater risk. These findings align with previous studies highlighting the role of parity in perineal lacerations, while age did not show a significant impact. The study suggests that focusing on parity and birth weight may help healthcare professionals better manage the risk of perineal tears during childbirth. Further research is needed to explore additional factors like pregnancy spacing and delivery techniques.

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Conflict of Interest

The authors declare that there's no conflict of interest regarding this article.

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