



THE RELATIONSHIP BETWEEN BIRTH DISTANCE AND PERINEAL RUPTURE INCIDENT

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ABSTRACT

Background: Perineal rupture was a quite serious problem. Factors that influence the incidence of perineal rupture were parity, birth spacing, fetal position, birth weight. Birth spacing of less than 2 years was considered high risk because it can cause complications during childbirth

Purpose: This research aimed to know the relationship between birth spacing and the incidence of perineal rupture

Method: The design of this research was a quantitative analytic retrospective. The population in this study was 268 medical records of mothers giving birth at Private Midwife Practice Place Sudjiati Frans Surabaya and the sample size was 160. The sampling technique used purposive sampling. The instrument used in this research was medical records at Midwife Practice Place Sudjiati Frans Surabaya for the period January – December 2022. Data were analyzed using Pearson correlation test.

Results: : Based on the results of pearson correlation with $\alpha = 0.05$, the value of $p = 0.001$ ($p < \alpha$) was obtained, which shows that there was a significant relationship between birth spacing and the incidence of perineal rupture in mothers giving birth.

Conclusion: Birth interval had a significant relationship with the incidence of perineal rupture at Private Midwife Practice Place Sudjiati Frans Surabaya.

INTRODUCTION

Childbirth is a natural process experienced by women by expelling the products of conception either normally or artificially (Nurathohiroh & Kurniawati, 2023) Childbirth often results in injury to the birth canal, injuries are usually minor but sometimes extensive and dangerous injuries occur. After delivery, the vulva and perineum must always be examined (Juliati, Riskina, & Riska, 2020). Perineal rupture is not uncommon as a complication in childbirth, especially in vaginal delivery (Lenden, Wardana, & Karmaya, 2020). Perineal rupture is a tear that occurs in the perineal area when a baby is born, either

spontaneously or using tools or procedures. Perineal tears generally occur in the midline and can become extensive if the fetal head is born too early.

WHO data states that 2.7 million cases of perineal rupture occurred in mothers giving birth. This figure is estimated to reach 6.3 million in 2050. In America, 26 million mothers in labor experience 40% perineal rupture. 50% of perineal rupture incidents in the world occur in Asia. The prevalence of pregnant women experiencing perineal rupture in Indonesia with the incidence of suture wound infection being 5% and bleeding being 7% and postpartum maternal mortality being 8%. Research conducted by Triyani et al., (2021) showed that the incidence of perineal rupture at Serui Regional Hospital from October to December 2019 reached 41.9%. In East Java, perineal rupture experienced by women giving birth results in 7% bleeding, and stitch wound infections account for 5% (WHO, 2020).

Based on a preliminary study at Private Midwife Practice Place Sudjiati Frans Surabaya in July 2023, data was obtained that the average number of mothers giving birth each month in 2022 is 15 - 30 mothers. The number of vaginal births from January to June 2023 was 149 mothers, most of whom were multigravida with birth intervals between 3 - 9 years. A total of 104 mothers who gave birth (69.79%) experienced perineal rupture either spontaneously or by episiotomy, while the number of mothers who did not experience perineal rupture was 45 women who gave birth (39.91%).

The results of Maudy's research in 2023, the factors that influence the incidence of perineal rupture are parity, birth spacing, fetal position, birth weight. Birth spacing of less than 2 years is considered high risk because it can cause complications during childbirth. A distance of 2-5 years is a safer distance for the mother and fetus. Likewise, the birth canal may experience a third or fourth degree perineal tear in the previous birth, so the recovery process is not complete and perineal tears can occur. In mothers who do not have birth spacing, meaning that they are primipara, more perineal rupture occurs because it is influenced by other accompanying factors such as feelings of fear of childbirth and flexibility of the birth canal which is caused by a lack of preparation for birth during pregnancy (Agustin, Hafshawaty, Zainul, & Probolinggo, 2023). With the correlation between perineal rupture, one of the factors being birth interval, the researcher aims to find a relationship between birth interval and the incidence of perineal rupture.

METHOD

The type of research used in this research is retrospective analytical quantitative to determine the relationship between one variable and another using past medical records. The approach used in this research is cross sectional. The sample for this study were mothers giving birth during January 2022 - December 2022 using purposive sampling technique. Sample for this research are 160 medical records of mothers giving birth at TPMB Sudjiati Frans Surabaya. The way to measure variables in this research is to use a dummy table which consists of the characteristics of the respondent, birth interval and perineal rupture. The research was conducted from September until November 2023.

RESULT AND DISCUSSION

Some of the following tables are the results of studies conducted by researchers on the relationship with the incidence of perineal rupture at Private Midwife Practice Place Sudjiati Frans Surabaya.

Maternal Characteristics

The characteristics of respondents can be seen in distribution table below:

Table 1. Frequency distribution of characteristic mothers giving birth at TPMB Sudjiati Frans

Characteristics of responden	n	%
Age <20 years	10	6,3
20-35 Years	134	83,7
> 35 years	16	10
Distance to health facilities		
Near	53	33,1
Far	107	66,9
Education		
Low	2	5,7
Intermediate	17	48,6
Tall	16	45,7
Desired pregnancy		
Yes	11	31,4
No	24	68,6
Number of parities		
Primipara	32	20
Multipara	83	51,9
Grandemultipara	45	28,1
Newborn baby's weight		
<2500 gram	2	1,3
>2500 gram	158	98,7
Use of Contraception		
Yes	113	70,6
No	47	29,4
Birth Interval		
<2 years	28	29,8
2-5 years	52	55,3
>5years	14	14,9
Perineal Rupture Incident		
Rupture	105	65,6
No Rupture	55	34,4
Episiotomy		
Yes	41	25,6
No	119	74,4

Based on table 1, it is known that almost all respondents aged 20 - 35 years, most respondents have a long distance from home to health facilities, most respondents had a intermediate education level. The majority of respondents wanted a pregnancy, most of the respondents were multiparous and almost all respondents had Newborn baby weight > 2500 grams. The majority of respondents used contraception and had a birth interval > 2 years (multigravida). The majority of respondents experienced perineal rupture, respondents had perineal rupture at grade 2 and did not have episiotomy.

Relationship between Birth Distance and Perineal Rupture

The relationship between birth spacing and the incidence of perineal rupture needs to be known as a connecting factor or variable related to the research objectives. Based on the Pearson Correlation test, the results were obtained:

Table 2. Cross tabulation of birth interval with the incidence of perineal rupture

Birth interval	Incidence of perineal rupture				Total	p	
	Yes		No				
	N	%	N	%			
<2 years	20	21,2	8	8,5	28	29,7	-0,001
2-5 years	22	23,4	30	32	52	55,4	
>5 years	12	12,8	2	2,1	14	14,9	
Total	54	57,4	40	42,6	94	100	

Based on table above, it can be seen that 20 respondents with a birth interval of <2 years experienced perineal rupture (21.2%) and 22 respondents with a birth interval of 2-5 years experienced perineal rupture (23.4%). Meanwhile, 30 (32%) did not experience perineal rupture at a birth interval of 2-5 years.

Based on the results of the Pearson correlation statistical test using SPSS with $\alpha = 0.05$, the value of $p = 0.001$ ($p < \alpha$) was obtained, which shows that there is a significant relationship between birth spacing and the incidence of perineal rupture in mothers giving birth at TPMB Sudjiati Frans.

In this study there was a negative correlation test between birth interval and the incidence of perineal rupture. The closer birth spacing will increase the risk of perineal rupture in mothers giving birth. Meanwhile, a greater distance between births will minimize the risk of perineal rupture. The ideal birth interval to minimize the risk of perineal rupture is 2 – 5 years. The closeness of the relationship in this study reached 0.989, so it can be concluded that there is a very close relationship between birth interval and the incidence of perineal rupture. This proves that birth spacing is one of the factors that can influence the incidence of perineal rupture.

Maternal Characteristics

1. Age of Respondents

Based on the research results, data was obtained that almost all respondents were aged 20 - 35 years, namely 134 respondents (83.7%), very few of the respondents were < 20 years old, namely 10 respondents (6.3%). This is in line with research conducted by (Nasrun, Binekada, & Kusnan, 2023) that the majority of mothers giving birth were aged 20-35 years (68.7%). The characteristics of respondents based on age in this study stated that the respondents were not included in the category of mothers at high risk. age 20-35 years, where the mother is of healthy reproductive age, while the age above 35 years is the minimum age of the mother, which means that mothers who are pregnant and giving birth are in the safe zone, where the age of 20-35 years is the age that is considered physically and psychologically mature (Hukubun, Budiono, & Kurniawati, 2021) This theory is in accordance with the results of research from Candrayanti (2019) which states that mothers aged < 20 years and > 35 years are more likely to experience perineal rupture. The optimal productive age for healthy reproduction is between 20 - 35 years. The risk will increase at ages under 20 years and over 35 years (Sukma & Sari, 2020)

2. Distance to health facilities

The results of this study showed that the majority of respondents had a long distance from home to a health facility, namely 107 respondents (66.9%) and a small number of respondents had a short distance from home to a health facility, namely 53

respondents (33.1%). In line with research conducted by Irawan and Ainy (2018), where JKN participants who have homes with long distances still use health services because there are no other health service options. This is not in line with research conducted by Zafasia (2022), the research results show that respondents will use health services that are close to home. This is in accordance with the utility theory of health services which explains that a person's desire to utilize health services can be influenced by supporting factors, one of which is distance traveled.

3. Education

Based on the research results, it was found that the majority of respondents had a secondary education level, namely 83 respondents (51.9%) and very few of the respondents had a primary education level, 32 respondents (20%). This is in line with research conducted by Suparti (2019), that the majority of respondents had a secondary education level. A person's level of education will influence a person's level of knowledge, where the higher a person's education, the higher their knowledge. So respondents with secondary education have an influence on knowledge of nutritious food for pregnant women. Pregnant women with adequate nutritional intake experience normal weight gain during pregnancy. This increase in weight has an impact on the weight of the baby being born (Nursaidah, 2017).

4. Desired pregnancy

The results of this study showed that the majority of respondents wanted a pregnancy, namely 106 respondents (66.3%) and a small percentage of respondents did not want a pregnancy, namely 54 respondents (33.7%). Desired pregnancy occurs in couples who really want children and at the right time. Unwanted pregnancies (KTD) consist of pregnancies that are not on time (mistimed pregnancies) and pregnancies that are not wanted at all (unwanted pregnancies). An untimely pregnancy occurs when a woman wants children in the future, but the pregnancy occurs sooner than planned. An unwanted pregnancy is a pregnancy that occurs in women who already have children and do not want them anymore (Febriana & Sari, 2021)

5. Number of parities

The results of this study stated that the majority of respondents were multipara, namely 87 respondents (54.4%) and very few respondents were grandemultipara, namely 4 respondents (2.5%). In line with research conducted by (Darmawati, Kesehatan Ummi Khasanah, & Istimewa Yogyakarta, 2023), that of the 115 respondents, the highest percentage was in high parity (multigravida) as many as 81 respondents (70.4%) and in low parity (primigravida) as many as 34 respondents (29.6%). Research results This is in accordance with previous literature which states that primiparous mothers have a higher risk of rupture because they have never had experience in the birth process. In this condition, the perineal tissue is still relatively stiff so that damage to the perineum and pelvic floor in general becomes more severe (Elisa Ulfiana, Siti Nur Endah, 2016). With each delivery, the soft tissue of the birth canal and surrounding structures will be damaged during each delivery. Damage is usually more pronounced in primiparous women because the tissue in primiparas is denser and more resistant than in multiparous women.

6. Newborn baby's weight

Based on the research results, it was found that almost all respondents had newborn baby weights >2500 grams, namely 158 respondents (98.7%) and very few of the respondents had newborn baby weights, namely 2 respondents (1.3%). This is in line with research conducted by Rachmawati (2022) which explains that the majority of mothers who gave birth experienced grade I lacerations with sufficient birth weight

(between 2500-4000 grams) as many as 40 people (48.8%), while at least 40 mothers 1 person (1.2%).

Fetal factors include birth weight, abnormal head position, difficult forceps extraction, shoulder dystocia, and congenital abnormalities such as hydrocephalus. This happens because the baby's large weight makes it difficult to pass through the pelvis and causes perineal tears in the mother who gives birth. In babies with a large birth weight, spontaneous perineal rupture can occur when the head and shoulders are born. When passing through the birth canal, the baby's weight influences the amount of pressure on the muscles around the perineum so that the perineum bulges and stretches until the baby's head and all parts of the body are born. The greater the pressure on the perineum, the greater the risk of perineal rupture (Wulandari, 2016).

7. Using Contraception

Based on the research results, it was found that the majority of respondents used contraception, namely 113 respondents (70.6%), a small number of respondents did not use contraception, namely 47 respondents (29.4%). This is in line with the results of Akbar's (2018) research that respondents who used contraceptives had normal parity of 42 respondents and high parity of 31 respondents.

Most contraceptive methods are effective if used appropriately. Contraceptive failure can be caused by various factors, namely incorrect use, missed or irregular use, or because the method chosen is less effective (Widyawati, 2020).

In this study, the majority of respondents used contraception but still experienced pregnancy. This is because the respondent stopped using (dropped out) an incident that occurred when he stopped being an acceptor for a couple of childbearing age who had previously been a family planning acceptor.

8. Birth Interval

The results of this study showed that the majority of respondents had a birth interval of > 2 years (multigravida) as many as 94 respondents (58.7%) and a small number of respondents had birth intervals of no distance (primigravida) as many as 66 respondents (41.3%). This research is not in line with Fatimah (2019) that the majority of respondents had a birth interval < 2 years. From these results it can be seen that a birth interval of ≤ 2 years is more at risk of perineal rupture than a birth interval of > 2 years. The higher incidence of perineal rupture occurs the closer the mother's birth distance is, this is because the birth interval is ≤ 2 years, the perineal muscles and scar tissue from the rupture have not recovered to their original state, thereby increasing the risk of perineal rupture. Meanwhile, when the birth interval is > 2 years, the perineal muscles and reproductive organs have returned to their original condition (Lenden et al., 2020)

9. Perineal Rupture Incident

Based on the research results, data was obtained that the majority of respondents experienced perineal rupture, namely 105 respondents (65.6%) and a small number of respondents did not experience perineal rupture, namely 55 respondents (34.4%). This is in line with research conducted by Riyanti (2023) that the majority of respondents experienced perineal rupture, 138 respondents. Perineal rupture occurs in almost all first deliveries and is not uncommon in subsequent deliveries. Perineal tears generally occur in the midline and become extensive if the fetal head is born too early, the angle of the pubic arch is smaller than normal, the fetal head passes through the lower pelvic inlet with a size greater than the suboccipitobregmatic circumference or the child is born by vaginal surgery.

10. Episiotomy

Based on the research results, it was found that the majority of respondents did not have an episiotomy, 119 respondents (74.4%) and a small number of respondents had an episiotomy, 41 respondents (25.6%). This is in accordance with research conducted by (Rahmaniah, 2018) which states that postpartum mothers experience more spontaneous ruptures compared to ruptures due to episiotomy. One way to reduce irregular and wide tears in the vagina and perineum is to perform an episiotomy. An episiotomy can make the wound or tear parallel and regular, making the wound easier to stitch up.

In line with this research is research conducted by (Radnia et al., 2022) which states that there is no significant relationship between episiotomy and the incidence of perineal rupture. Apart from that, in this study, measurements of the perineum were carried out which can provide information on whether an episiotomy will be performed. Women have anatomically different perineum sizes. Differences in perineal size in primipara women may be related to episiotomy. This study also stated that episiotomy significantly reduced the rate of grade 1 and 2 perineal tears.

11. Relationship between Birth Distance and Perineal Rupture

Based on the research results, 20 respondents with a birth interval of <2 years experienced perineal rupture (21.2%) and 22 respondents with a birth interval of 2-5 years experienced perineal rupture (23.4%). Meanwhile, 30 (32%) did not experience perineal rupture at a birth interval of 2-5 years.

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The results of this study are in line with research conducted by (Nurhayati, 2023) that 43 mothers who gave birth with a high risk birth interval (< 2 years) mostly experienced perineal rupture, namely 26 people (60.5%), while the opposite was true for 65 mothers who gave birth. with a low risk birth interval (> 2 years), the majority did not experience perineal rupture, namely 46 people (70.8%). The results of the statistical test above obtained p value = 0.002, which is smaller than the alpha value (0.05). This means that there is a significant relationship between birth distance and the incidence of perineal rupture in the working area of the Sobang District Health Center, Lebak Regency in 2022.

Birth interval is the time span between the birth of the current child and the birth of the previous child. A birth spacing of less than 2 years is classified as high risk because it can cause complications during delivery. A birth spacing of 2-3 years is a safer distance for the mother and fetus. The condition of the birth canal may be that during the previous birth the perineum was torn, so that recovery was not complete and perineal rupture could occur (Shinta, 2019).

Setting the ideal pregnancy spacing will also have an impact on the mother's health. The mother's reproductive health will experience optimal recovery if the pregnancies are not too close together. However, if the distance is too far or too long, it

is not good for the mother's health. This can be seen from the research results that mothers with children >5 years apart are more likely to experience perineal rupture. This happens because the perineum is stiff and the muscles are not as elastic as in the second or third pregnancy (Sigalingging & Sikumbang, 2018).

CONCLUSION

Birth interval has a significant relationship with the incidence of perineal rupture at TPMB Sudjiati Frans Surabaya. Health workers can monitor risk factors for perineal rupture as a preventive measure. So it can reduce the incidence of perineal rupture in mothers giving birth and provide education and motivate mothers to regulate birth spacing. It is hoped that future researchers can carry out research related to the history of previous births and include other risk factors that have not been studied by current researchers.

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