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RELATIONSHIP BETWEEN BIRTH WEIGHT AND PERINEUM RUPTURE NORMAL DELIVERY AT GRACIA MAIN CLINIC KABANJAHE, KARO DISTRICT, 2024

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Abstract.
Background: Perineal rupture is one of the complications that often occurs in normal delivery. Factors that contribute to this incident include parity, tissue elasticity, and birth weight of the baby. Babies with a higher birth weight are at risk of causing greater pressure on the birth canal, increasing the possibility of perineal rupture.
Objective: This study aims to analyze the relationship between birth weight and the incidence of perineal rupture in normal delivery at the Gracia Main Clinic, Kabanjahe, Karo Regency, in 2024.
Methods: This study used an analytical method with a cross-sectional design. The study sample consisted of mothers who gave birth normally at the Gracia Main Clinic in 2024. Data were collected through medical records and analyzed using statistical tests to determine the relationship between infant birth weight and the incidence of perineal rupture.
Results: The results of the study showed a significant relationship between birth weight and the incidence of perineal rupture. Mothers who gave birth to babies with a birth weight of more than 3500 grams had a higher risk of experiencing perineal rupture compared to mothers who gave birth to babies with normal or low birth weight.
Conclusion: Birth weight is a factor that influences the incidence of perineal rupture in normal delivery. Therefore, monitoring fetal weight during pregnancy and optimal preparation for delivery are very important to minimize the risk of perineal rupture.

Keywords: Birth Weight, Perineal Rupture, Normal Delivery

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I. INTRODUCTION

Birth canal tears are the second cause of bleeding after uterine atony which occurs in almost all first deliveries and not infrequently in subsequent deliveries. Labor with perineal rupture if not handled effectively causes bleeding and infection to become more severe (Ilmiah, WS, 2015).

The impact of perineal rupture is postpartum hemorrhage. There are two dangers of postpartum hemorrhage, first anemia caused by the bleeding will weaken the patient's condition, reduce the patient's resistance and become a predisposing factor for postpartum infection. Second, if this blood loss is not stopped, the result is of course death. Postpartum hemorrhage is the main cause of 40% of maternal deaths in Indonesia (Elisa, 2017)

Worldwide in 2019 there were 2.7 million cases of perineal tears in women giving birth. This figure is estimated to reach 6.3 million in 2050, along with the increasing number of midwives who do not know midwifery care well. (Hilmy, 2020). In America, 26 million women in labor experience perineal tears, 40% of whom are due to midwife negligence. This will increase the cost of treatment to approximately 10 million dollars per year (Heimburger, 2019). In Asia, perineal tears are also a fairly common problem in society, 50% of perineal tears in the world occur in Asia (Campion, 2019).

Perineal rupture is the cause of postpartum hemorrhage postpartum maternal hemorrhage. Postpartum hemorrhage is the main cause of 40% of maternal deaths in Indonesia. In Indonesia, perineal lacerations are experienced by 75% of mothers giving birth vaginally. In 2017, it was found that out of a total of 1951 spontaneous vaginal births, 57% of mothers received perineal stitches (28% due to episiotomy and 29% due to spontaneous tears). (Indonesian Health Profile, 2017)

Postpartum hemorrhage is one of the important problems because it is related to maternal health which can cause death. Although maternal mortality rates have decreased from year to year with the presence of pregnancy examinations and care, delivery in hospitals and the availability of blood transfusion facilities, bleeding is still a major factor in maternal death. Even if a woman survives after experiencing postpartum hemorrhage, she will suffer from severe blood deficiency (severe anemia) and will experience prolonged health problems (Ministry of Health, 2015)

Perineal rupture is a tear that occurs during childbirth and is caused by several factors including the position of childbirth, the method of pushing, the leadership of childbirth, the weight of the newborn baby and the condition of the perineum (Wiknjosastro, 2008). The risk of complications that may occur if perineal rupture is not treated immediately are bleeding, fistula, hematoma and infection (Manuaba, 2012).

Newborns who are too large or have a birth weight of more than 4000 grams will increase the risk of the labor process, namely the possibility of the baby's shoulder getting stuck, the baby will be born with breathing problems and sometimes the baby is born with neck, shoulder and nerve trauma. This happens because the baby's weight is large so that it is difficult to pass through the pelvis and causes perineal rupture in the mother in labor (Wiknjosastro, 2018)

II. LITERATURE REVIEW

Rupture is the tearing or tearing of tissue by force. The perineum is a region and surrounding structures that occupy the lower entrance of the pelvis and are located below the pelvic diaphragm, anteriorly bounded by the pubic symphysis, anterolaterally by the ischiopubicus ramus and ischiadicum tuber, and posteriorly by the coccygeus bone (Wiknjosastro, 2011).

Perineal rupture is a tear that occurs when a baby is born either spontaneously or with the use of tools or actions. Perineal tears generally occur in the midline and can be extensive if the

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baby's head is born too quickly. Childbirth often causes injury to the birth canal. The injuries that occur are usually minor but often extensive and dangerous injuries also occur, therefore after delivery, an examination of the vulva and perineum must be carried out. Tears in the birth canal are usually the result of medical procedures (episiotomy) and tears that occur spontaneously (Wiknjosastro, 2018).

Perineal tears occur in almost all first deliveries and are not uncommon in subsequent deliveries. (Wiknjosastro, 2011)

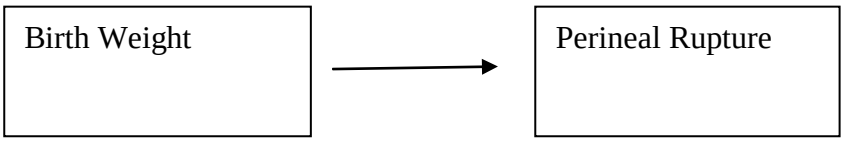
III. RESEARCH METHODS

3.1. Types of research

This research is an observational analytical research type with a Case Control research design which is used to find out the cause of the disease by investigating the relationship between risk factors and the occurrence of disease.

3.2. Conceptual Framework

Independent Variables **Variables Dependent**



3.3. Population and Sample

3.3.1. Population

Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics that are determined by researchers to be studied and then conclusions drawn. So the population is not only people, but also other natural objects. The population is also not just the number of objects/subjects being studied, but includes all the characteristics/properties possessed by the subjects/objects (Sugiyono, 2017) The population in this study was 30 mothers who gave birth.

3.3.2. Sample

Sample is a representative part of the entire population. The sampling method is carried out using the total sampling method, which meansis a sampling technique where all members of the population are used as samples.The sample in this study was all mothers giving birth at the Gracia Kabanjahe Main Clinic, Karo Regency, approximately 30 people.

The inclusion criteria for the study are:

1. Mother in normal labor
2. Mothers in labor who experience spontaneous perineal rupture
3. No Serious Complications
4. Age 17-35 years

Exclusion criteria are eliminating or removing subjects who meet the inclusion criteria from the study for various reasons (Sujarweni, 2014), including:

1. Mothers who have complications during childbirth
2. Mothers who are 24 hours postpartum.

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3.4. Location and Time of Research

3.4.1. Research Location

This research was conducted at the Independent Midwife PracticeIndependent Midwife Practice Sulastri, Kualuh Hulu District, North Labuhan Batu Regency in 2023

3.4.2. Research Time

This research was conducted from May to July 2024.

3.5. Research Variables, Operational Definitions and Methods of Measuring Variables.

3.5.1. Research Variables

1. Birth Weight
2. Perineal Rupture.

3.5.2 Operational Definition and Method of Measuring Variables

No.	Variables	Definition	Measuring instrument	Measurement results	Scale
1	Perineurial rupture	Injuries or tears that occur during childbirth, either spontaneously or through an episiotomy, are recorded on medical record	Observation	1. Degree I 2. Grade II 3. Grade III	Ordinal
2	Birth Weight	baby's birth weight recorded in the medical record	Observation Sheet	1. BBL At Risk >4000gr 2. BBL No Risk <4000grt	Ordinal

3.6. Data Collection Techniques and Procedures

Data collection was conducted at the Gracia Kabanjahe Main Clinic, Karo Regency. The data collection technique in this study was carried out with the following steps:

1. Submitting a permit application to the Midwifery Study Program, Undergraduate Program, Mitra Husada Health College, Medan. After that, submitting a request for a permit to carry out the research to the head of the Gracia Kabanjahe Main Clinic, Karo Regency. which is used as a place for data collection.
2. Researchers identify samples that meet the inclusion criteria to be used as respondents.
3. Researchers provide an explanation of the research process in families
4. After the prospective respondent understands and is willing to be a respondent, the respondent consent form is signed.
5. The provision of questionnaires and observation sheets to be filled in by families was assisted by researchers.

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6. The activity was carried out at the Gracia Kabanjahe Main Clinic, Karo Regency, which was selected by the researcher.

7. The researchers would like to thank the respondents for participating in the research.

3.7. Data Processing and Analysis Techniques

3.7.1. Data processing

The data that has been collected is then processed through the following stages (Notoadmodjo, 2012):

1. Editing

*Editing*used to check the list of questions that have been submitted by the data collectors.

2. Coding

*Coding*is to provide a code for each data that has been obtained into a number to make it easier for researchers to process the data.

3. Data Entry

After all the answers from each respondent in the form of codes (numbers or letters) are entered into the computer program or software. Then the data processing is done by entering data from the questionnaire into the SPSS program.

4. Cleaning

Cleaning is done to ensure that all data has been entered and there are no errors in entering the data so that it is ready for analysis.

5. Tabulation

*Tabulation*is an activity to summarize the data obtained into tables that have been prepared. The data obtained is then grouped and processed using a specific table. Data tabulation in this study uses a computer system.

This study was conducted at the Gracia Kabanjahe Main Clinic, Karo Regency and data collection was carried out from March to June 2024. The research design used by the researcher was a descriptive analytical research method with a cross-sectional approach to determine the relationship between birth weight and perineal rupture rates. The sample in this study was 150 respondents who met the inclusion criteria. There were 180 respondents who were excluded because the respondents had incomplete medical record data and the rupture occurred due to episiotomy.

4.1 Respondent Characteristics

a. Distribution of Respondents Based on Education

From Table 5.1 it shows that of the 150 respondents who were sampled in the study of respondent education, there were 16 people (10.7%) who had elementary school education, 30 people (20.0%) who had junior high school education, 90 people (61.3%) who had high school education, there were 12 people (8.0%) who had undergraduate education as can be seen in the following table.

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Table 5.1
Distribution and Frequency of Respondents Based on Education at the Gracia Kabanjahe Main Clinic, Karo Regency

Education	Frequency	%
SD	16	10.7
JUNIOR HIGH SCHOOL	30	20.0
SENIOR HIGH SCHOOL	90	61.3
S1	12	8.0
Total	150	100.0

Source: Secondary data, 2010

b. Distribution of Respondents Based on Occupation

From Table 5.2 it shows that of the 150 respondents who were sampled in the study of respondents' jobs, there were 16 people (10.7%) who had elementary school education, 30 people (20.0%) who had junior high school education, 90 people (61.3%) who had high school education, there were 12 people (8.0%) who had undergraduate education as can be seen in the following table.

Table 5.2
Distribution and Frequency of Respondents Based on Occupation at the Gracia Kabanjahe Main Clinic, Karo Regency

Work	Frequency	**%**
Housewife	134	89.3
Self-employed	9	6.0
civil servant	7	4.7
Total	150	100.0

Source: Secondary data 2010

c. Distribution of Respondents Based on Religion

From Table 5.3 it shows that of the 150 respondents who were sampled in the study of respondents' religion, there were 138 people (92.0%) who were Muslim, 8 people (8.0%) who were Muslim, as can be seen in the following table.

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Table 5.3
Distribution and Frequency of Respondents Based on Religion at the Gracia Kabanjahe Main Clinic, Karo Regency

Religion	Frequency	%
Islam	138	92.0
Christian	12	8.0
Total	150	100.0

Source: Secondary data 2010

d. Distribution of Respondents by Age

From Table 5.4 it shows that of the 150 respondents who were sampled in the study of respondent age, there were 18 people (12.0%) who were aged < 20 years, 123 people (82.0%) who were aged 20 - 35 years, 8 people (6.0%) who were aged > 35 years, as can be seen in the following table.

Table 5.4
Distribution and Frequency of Respondents Based on Age at the Gracia Kabanjahe Main Clinic, Karo Regency

Age (Years)	Frequency	%
< 20	18	12.0
20 – 35	123	82.0
> 35	8	6.0
Total	150	100.0

Source: Secondary data 2010

e. Distribution of Respondents Based on Parity

From Table 5.5 it shows that of the 150 respondents who were sampled in the respondent parity study, there were 79 people (52.7%) who had given birth once, 45 people (30%) who had given birth twice, 15 people (10%) who had given birth three times, 9 people (6%) who had given birth four times, 1 person (0.7%) who had given birth five times and 1 person (0.7%) who had given birth six times as can be seen in the following table.

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Table 5.5
Distribution and Frequency of Respondents Based on Age at the Gracia Kabanjahe Main Clinic, Karo Regency

Parity	Frequency	%
1 time giving birth	79	52.7
2 times giving birth	45	30.0
3 times giving birth	15	10
4 times giving birth	9	6.0
5 times giving birth	1	0.7
6 times giving birth	1	0.7
Total	150	100.0

Source: Secondary data 2010

2. Variables studied

a. Distribution of Respondents Based on Baby Birth Weight

Table 5.6 shows that of the 150 respondents who were sampled in the study of respondents' infant birth weight, there were 22 people (14.7%) who had low birth weight, 124 people (82.2%) who had normal birth weight, 4 people (2.7%) who had macrosomic birth weight as can be seen in the following table.

Table 5.6
Distribution of Respondents Based on Birth Weight of Babies at the Gracia Kabanjahe Main Clinic, Karo Regency

Baby Birth Weight	Frequency	Percentage (%)
Low birth weight	22	14.7
Normal birth weight	124	82.2
Macrosomic birth weight	4	2.7
Total	150	100.0

Source: Secondary data 2010

b. Distribution of Respondents Based on Perineal Rupture Level

Table 5.7 shows that of the 150 respondents who were sampled in the study of the level of perineal rupture of respondents, there were 46 people (30.7%) who experienced grade I perineal rupture, 99 people (66.0%) who experienced grade II perineal rupture, 3 people (2.0%) who experienced grade III perineal rupture, 2 people (1.3%) who experienced grade IV perineal rupture as can be seen in the following table.

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Table 5.7
Frequency Distribution of Respondents Based on Perineal Rupture Level at Gracia Kabanjahe Main Clinic, Karo Regency

Perineal Rupture Rate	Frequency	Percentage (%)
Level I	46	30.7
Level II	99	66.0
Level III	3	2.0

4. Relationship between the variables studied

After conducting research, it was found that in babies with low birth weight, 5 people (22.7%) experienced grade I perineal rupture, 17 people (77.3%) experienced grade II perineal rupture and none experienced grade III perineal rupture.

IV. In normal birth weight, 41 people (33.1%) experienced first degree perineal rupture, 82 people (66.1%) experienced second degree perineal rupture, 1 person (0.8%) experienced third degree perineal rupture and none experienced fourth degree perineal rupture. In macrosomic birth weight, no one experienced first and second degree perineal rupture, 3 people (2.0%) experienced third degree perineal rupture and 1 person (1.3%) experienced fourth degree perineal rupture.

Based on the results of the analysis that has been done using the chi-square statistical test, from 150 respondents obtained a value of p = 0.000 smaller than the value of p = 0.05. Thus, Ho is rejected and Ha is accepted meaning there is a relationship between the baby's birth weight and the incidence of perineal rupture as in the following table.

4.2. Discussion

The results of the study that have been seen that out of 22 respondents with low birth weight, 5 people (22.7%) experienced grade I perineal rupture and 17 people (77.3%) experienced grade II perineal rupture. In normal birth weight with a total of 124 respondents, 41 people (33.1%) experienced grade I perineal rupture, 82 people (66.1%) experienced grade II perineal rupture and 1 person (0.8%) experienced grade III perineal rupture. In macrosomia birth weight with a total of 4 respondents, 2 people (50%) experienced grade III perineal rupture and 2 people (50%) experienced grade IV perineal rupture.

Based on these results, it can be interpreted that based on the birth weight of babies from 150 respondents, the p value = 0.000 is smaller than the p value = 0.05. Thus, Ho is rejected and Ha is accepted, meaning there is a relationship between the birth weight of babies and the incidence of perineal rupture.

The results of the study are in accordance with the theory that states that a large fetal head and a large fetus can cause a larger perineal rupture. (Sarwono Prawirohardjo, 2006)

The fetal head is the most important part in labor. The fetal head will affect the stretching of the perineum when the head is at the base of the pelvis and opens the door with a diameter of 5-6 cm and there will be thinning of the perineum, so that the perineum is easily ruptured by a larger perineum. (Bonny Danuatmaja and Mila Meiliasari, 2001)

This is also in accordance with the research conducted by Andrew V, et al from the Department of Obstetrics and Gynecology, Croydon, Syria (June, 2008) on the relationship

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between birth weight and perineal rupture rates at the Mergangsan Health Center. The results of the study showed that it occurred in BBLN (>2500-4000g) which was 36 (80%) of 45 cases of perineal rupture and in BBLR (1500-2500g) which was 9 (20%) of 45 cases of perineal rupture. The majority of LBW deliveries experienced first-degree perineal rupture, which was 7 (77.78%) of 9 cases of BBLR with perineal rupture and only 2 (22.22%) of 9 experienced second-degree perineal rupture. In labor with BBLN, there were 17 (47.22%) grade I perineal ruptures, 14 (38.89%) of 36 grade II ruptures and 5 (13.89%) of 36 grade III ruptures.

After conducting a statistical analysis of Kendall's tau to find the relationship between the birth weight of babies and the degree of perineal rupture, the calculated tau result was 0.483 or sig 0.000<0.01, which means that there is a relationship between the birth weight of newborn babies and the degree of perineal rupture at the Mergangsan Health Center in 2008.

The author assumes that the birth weight of the baby is related to the level of perineal rupture because if the fetus is large and the fetal head is large, it will affect the stretching of the perineum which can increase perineal injury.

In low birth weight with a total of 22 respondents. The majority of respondents experienced a second-degree perineal rupture rather than a first-degree perineal rupture, namely 17 people (77.3%) and 5 people (22.7%) who experienced a first-degree perineal rupture. This is not in accordance with Sarwono Prawirohardjo's theory which states that a large fetal head and a large fetus can cause a larger perineal rupture. This is because of the 17 respondents who experienced a second-degree rupture, 14 were primiparous mothers. In primiparas, signs of an intact perineum, closed vulva, perforated hymen, and narrow vagina were found. During labor, there will be pressure on the soft birth canal by the fetal head. With an intact perineum in primigravidas, perineal tears will easily occur. In addition, primiparas have no previous experience of giving birth so they do not know how to push properly so that the possibility of a large perineal rupture and the level of rupture can be greater.

V. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusion

1. There is no relationship between low birth weight and perineal rupture rates at the Gracia Kabanjahe Main Clinic, Karo Regency.
2. There is a relationship between normal birth weight and the rate of perineal rupture at the Gracia Kabanjahe Main Clinic, Karo Regency.
3. There is a relationship between macrosomic birth weight and the level of perineal rupture at the Gracia Kabanjahe Main Clinic, Karo Regency.

5.2 Suggestions

Based on the conclusions from the results of this study, several suggestions that can be given include:

1. It is necessary for health service personnel to pay attention to cooperation with mothers giving birth and the use of appropriate manual tools so that they can regulate the speed of the baby's birth and prevent lacerations and reduce the level of perineal rupture which can cause complications of childbirth such as postpartum hemorrhage.
2. There is a need to increase education for pregnant women about the factors that influence perineal rupture so that during childbirth the incidence of perineal rupture can be reduced and the rate of perineal rupture can be minimized.

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3. For further researchers, it is better to use primary data for better results.
4. For further researchers who are interested in the same theme as this study, it is hoped that they will consider other variables that can influence the level of perineal rupture.

BIBLIOGRAPHY

Elisa, Siti NE & Sri Y. (2017) „The Relationship between Parity and the Occurrence of Spontaneous Perineal Tears in Normal Childbirth", Midwife Journal 2 number 02

Scientific, WS (2015) Textbook of Normal Delivery Care. Yogyakarta: Nuha Medika

Hutomo, CS (2018) „The Relationship Between Parity and the Incidence of Spontaneous Perineal Rupture at Surakarta City Hospital", Midwife Journal, 4 number 2

Indonesian Health Profile (2017) Data and Information on the Indonesian Health Profile in 2017. Availableat:http://www.depkes.go.id/resources/download/pusdatin/profile-healthindonesia/Profile-Health-Indonesia-2016.pdf.

Manuaba, IBG (2012) Obstetrics, Gynecology and Family Planning. Jakarta: EGC

Oxorn, H. and Forte, WR (2015) Obstetrics Pathology & Physiology of Labor. Yogyakarta: Essentia Medica Foundation (Yem)

Saifuddin. (2012) „The Relationship between Birth Weight (BBL) and the Degree of Perineal Rupture in Primiparous Mothers in Mothers Who Have Normal Birth", Jurnal Ilmiah Bidan, 1 number 3

Wiknjosastro. (2018) „Birth Weight Against Perineal Rupture Incidence Rate in Primigravida Normal Birth Mothers", Genta Midwifery Journal, 4 number 2:52–55