

Factors associated with caesarean section in women giving birth at RSUD dr. Abdul Rivai Berau

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received Mar 8, 2024 Revised Mar 10, 2024 Accepted Mar 13, 2024</p>	<p>Caesarean section deliveries can result in a variety of consequences, so they become alternative procedures for childbirth. However, there has been an increase in caesarean section deliveries in the last three months at Dr Abdul Rivai Hospital Berau. It is necessary to know causal factors such as severe pre-eclampsia to address the high rate of caesarean section deliveries, premature rupture of membranes and history of caesarean section deliveries so future pregnant women can prevent caesarean section deliveries by overcoming the problems that occur. This study aimed to determine the factors associated with caesarean section in women giving birth. This study used an analytical survey and a retrospective design. The population was data from women giving birth at Dr Abdul Rivai Hospital Berau from June 01, 2023 to August 31, 2023, numbered 567 people. The Slovin formula obtained a sample of 235 people. Data analysis used chi-square. This study showed that 21.3% of women in labor experienced severe pre-eclampsia, 19.6% had a history of previous caesarean section, 18.3% experienced premature rupture of membranes and 52.3% of caesarean section deliveries. There was a relationship between severe pre-eclampsia and caesarean section ($p = 0.001$). There was a relationship between previous history of caesarean section and caesarean section ($p = 0.006$). There was a relationship between premature rupture of membranes and caesarean section ($p = 0.043$). This indicates Severe pre-eclampsia, premature rupture of membranes and history of caesarean section as factors causing caesarean section. Hospitals expect to provide counseling about maintaining good pregnancies to avoid caesarean sections for pregnant women who have regular health checks.</p>
<p>Keywords:</p> <p>History of Sectio Caesaria Premature Rupture of Membranes Severe Pre-Eclampsia</p>	

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INTRODUCTION

Childbirth is a condition when a woman gives birth to a fetus which is marked by contractions in the uterus within approximately 12-14 hours until the baby comes out of the uterus accompanied

by the expulsion of the placenta and the membranes are released.(Astriana, 2017). Childbirth as a physiological process from the end of pregnancy(Aprilia & Ritchmond, 2011).

Childbirth can be carried out in two types, including vaginal delivery and through surgical operation or called *sectio caesarea* (SC) (Prawirohardjo, 2018) (Adnyanawati et al., 2023). The incision during caesarean section delivery causes an incision which must be taken into account as to the degree of healing of the wound because of the high risk of infection, uterine rupture and bleeding.(Wahyuningsih, 2019).

World Health Organization (WHO) data shows that the average caesarean section delivery is 5% -15% per 1000 births in the world, the incidence rate in government hospitals is an average of 11% while in private hospitals the average is more than 30%(Aspiani, 2014). Data WHO The number of caesarean section deliveries occurs in America at 39.3%, Europe at 25.7%, then occurrence in developing countries *caesarean section* increased rapidly, which in 2019 there were 85 million actions, in 2020 there were 68 million actions and in 2021 there were 373 million actions. The number of caesarean section deliveries in Asia is 23.1%. This number is predicted to increase every year until 2030(Organization, 2023).

Caesarean section deliveries in Indonesia increase every year, where data from the Republic of Indonesia Basic Health Research (Riskesdas), there has been an increase in Caesarean section procedures from 15.3% of 7,440 deliveries in 2013 to 17.6% of 78,736 deliveries in 2018(Ministry of Health, 2018).

In East Kalimantan Province the data is known giving birth with *caesarean section* based on the results of the RSUD medical record report. Abdul Wahab Sjahranie Samarinda recorded 32.03% in 2015, 27.79% in 2016, 34.28% in 2017. Data for January 2017 - January 2018 with a total of 152 deliveries, there were births *caesarean section* A total of 89 cases were carried out because of the following indications: 1 case of mild preeclampsia, 2 cases of moderate preeclampsia, 1 case of severe preeclampsia, 3 cases of CPD, 1 case of large baby, 4 cases of oligohydramnios, 24 cases of premature rupture of membranes, 10 cases of breech position, 10 cases of SC. other factors 41 cases (RSUD medical records. AWS, 2017)(Fauziah & Fitriana, 2018).

The cause of AKI in 2020 was severe pre-eclampsia in 5 people, bleeding in 2 people, hyperthyroidism in 1 person. In 2021, there were 3 people with severe pre-eclampsia, 1 person with infection, 1 person with heart disease, 2 people with lungs, 8 people with Covid, 1 person with hepatitis. In 2022, there will be 5 people with severe pre-eclampsia, 1 person with bleeding, 1 person with lungs, 1 person with HIV. The percentage of pregnant women with complications (pre-eclampsia, obesity, anemia, CED, bleeding, heart disease, infection) in 2022 is 92.7% and January-August 2023 is 8.7%(Lenau et al., 2023). These complications that occur in pregnant women can cause the mother to give birth with *caesarean section*.

Dr. RSUD data. Abdul Rivai Berau known patient who gave birth with *caesarean section* In 2020 there were 819 births *caesarean section* (29.3%) Of the 2,790 births, in 2021 there will be 806 mothers giving birth *caesarean section* (35.8%) of 2,248 deliveries and in 2022 there will be 764 births *caesarean section* (31.3%) of 2,436 deliveries. Data for 2023 post caesarean section patients in In May there were 88 births *caesarean section* (36.1%) of 244 births, June there were 63 giving birth *caesarean section* (30.1%) of 206 births, July there were 81 giving birth *caesarean section* (34.9%) of 232 births And August there are 66 giving birth *caesarean section* (51.2%) of 129 deliveries (Data Dr. Hospital Abdul Rivai Berau, 2023). This data shows an increase in maternal births *caesarean section* within the last three months.

See the impact Caesarean section delivery is considered to be a choice for many pregnant women(Yuniwati, 2019).The act of giving birth by *Sectio Caesarea* is caused by pregnancy complications which is the main reason that delivery must be carried out by *Sectio Caesarea*(Ramandanty, 2019).Factors associated with caesarean section in women giving birth, such as severe pre-eclampsia and a history of previous caesarean section (former CS)(Esta, 2020). Factors that increase the risk of caesarean section include Premature Rupture of Membranes

(PROM).(Asta et al., 2023). Severe Pre-Eclampsia (PEB) is a special condition in pregnancy, which is characterized by an increase in blood pressure of 160/110 and proteinuria in pregnant women(Asta et al., 2023). The condition of PEB in pregnancy is an indication for pregnant women to undergo caesarean section delivery. If in an emergency a pregnant woman with PEB must deliver by caesarean section. Fetal distress is a condition where the fetus does not receive enough O₂ so that the fetus will experience hypoxia(Asta et al., 2023).

The impact of PEB on pregnant women includes:uteroplacental ischemia (IUGR, IUFD, Placental Abruptio), arteriolar spasm (cerebral hemorrhage, heart, kidney and liver failure, retinal abatio, thrombo embolism, blood clotting disorders), seizures and coma (cyanosis, saliva aspiration increases lung function disorders, pressure increased blood causes brain hemorrhage and sudden heart failure, the tongue can be bitten, falls from the place causing fractures and injuries, impaired kidney function, bleeding and retinal detachment, impaired liver function)(Octavianti, 2023).

Previous history of caesarean section includes factors related to caesarean section on women giving birth according to Manuaba (2019), stating that a woman who hadcaesarean section delivery, has a higher risk in subsequent pregnancies. In accordance with the results of previous research conducted(Iffah et al., 2020)shows that there is a significant relationship between historycaesarean section delivery with caesarean section delivery in mothers who gave birth at RSU Artha Medica Binjai. If a normal delivery does not go smoothly, the pregnant woman will be advised to undergo a caesarean section again and is at risk of experiencing complications during the operation, such as heavy bleeding and infection.(Princess, 2019). Premature rupture of membranes (KPD) is also related to caesarean section delivery in the form of an event where the membranes rupture before the birth process takes place. The impact of KPD can affect pregnancy and childbirth. The distance between the rupture of the membranes and the start of labor is called the latent period or the Lag Period. If the latent period is too long and the membranes have ruptured, infection can occur in the mother and baby(Aminatubillah et al., 2019).

Preliminary study at RSUD dr. Abdul Rivai BerauBased on medical record data, it is known that the patient gave birth withcaesarean sectionmonthJune 2023 available63 birthscaesarean sectionwith cases that occur including Severe Pre-Eclampsia(PEB) there were 20 cases (12.6%), previous history of Sectio Caesarea there were 16 cases (10.08%), andThere were 20 cases of premature rupture of membranes (12.6%).July 2023 there are 81laborcaesarean sectionwithcases that occurred included Severe Pre-Eclampsia (PEB), there were 26 cases (32.1%), a history of previous caesarean section, there were 24 cases (29.6%),There were 19 cases of premature rupture of membranes (23.5%). Whereasin August 2023 there are 66laborcaesarean sectionwithcases that occurred included a history of previous caesarean section, there were 21 cases (30.3%), Severe Pre-Eclampsia (PEB) there were 17 cases (25.8%), There were 16 cases of premature rupture of membranes (24.2%). This data shows that the most cases are related to childbirthcaesarean sectioncovershistory of caesarean section, Severe Pre-Eclampsia (PEB) andpremature rupture of membranes. Based on the phenomenon that has been explained, to reduce childbirth by caesarean section, it is necessary to know the factors related to caesarean section.

RESEARCH METHOD

The population in this study was all data from mothers giving birth at RSUD dr. Abdul RivaiBerau in the period 01 June 2023- 31August 2023 there will be 567 people.Sample of this researchisdata on women giving birth at RSUD dr. Abdul RivaiBerautotaling 235 people, including PEB there are 50 cases,history of previous caesarean section there were 46 cases,There were 43 cases of premature rupture of membranes.The cases that were not studied but were found in these respondents included 2 people with failed induction, 5 people with anemia, 6 people with pre-eclampsia, 12 people with placenta previa, 1 person with cephalopelvic disproportion (CPD), 5 people with asthma, and oligohydramnios. there were 1 person, locus minoris resistance (LMR), 6 people with

obstructed labor, 7 people with gamely, and 10 people with breech position. The analysis of this research includes: Normality Test, Univariate Analysis, Bivariate Analysis

RESULTS AND DISCUSSIONS

Univariate Analysis

Respondent Characteristics

Characteristics respondents to mothers giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

Table 1. Frequency distribution characteristics of respondents in mothers giving birth at RSUD dr. Abdul Rivai Berau

Respondent Characteristics	F	Percentage (%)
Age		
<20 years	5	2.1
20-35 years	177	75.3
>35 years	53	22.6
Amount	235	100
Gestational Age		
37 weeks	58	24.7
38 weeks	59	25.1
39 weeks	47	20
40 weeks	71	30.2
Amount	235	100
Parity		
Primigravida	59	25.1
Multigravida	129	54.9
Grandmultigravida	47	20
Amount	235	100
Education		
elementary school	36	15.3
JUNIOR HIGH SCHOOL	23	9.8
SENIOR HIGH SCHOOL	129	54.9
College	47	20
Amount	235	100
Work		
IRT	164	69.8
Private sector employee	53	22.6
Trader/Entrepreneur	18	7.7
Amount	235	100

Source: Primary Data, 2024

Severe Pre-Eclampsia

Identification severe pre-eclampsia to mothers giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

Table 2. Frequency distribution of severe pre-eclampsia to mothers giving birth at RSUD dr. Abdul Rivai Berau

Severe Pre-Eclampsia	f	Percentage (%)
P.E.B	50	21.3
Not PEB	185	78.7
Amount	235	100

Source: Primary Data, 2024

History of Sectio Caesarea

Identification history of previous caesarean section in women giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

Table 3. Frequency distribution history of previous caesarean section in women giving birth at RSUD dr. Abdul Rivai Berau

Previous history of Sectio Caesarea	f	Percentage (%)
There is	46	19.6
There isn't any	189	80.4
Amount	235	100

Source: Primary Data, 2024

Premature rupture of membranes

Identification premature rupture of membranes to mothers giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

Table 4. Frequency distribution of premature rupture of membranes to mothers giving birth at RSUD dr. Abdul Rivai Berau

Premature rupture of membranes	f	Percentage (%)
Experiencing KPD	43	18.3
Not experiencing KPD	192	81.7
Amount	235	100

Source: Primary Data, 2024

Sectio Caesarea

Identification caesarean section procedure for mothers giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the following table:

Table 5. Frequency distribution caesarean section procedure for mothers giving birth at RSUD dr. Abdul Rivai Berau

Sectio Caesarea	f	Percentage (%)
Sectio Caesarea	123	52.3
Normal	112	47.7
Amount	235	100

Source: Primary Data, 2024

Bivariate Analysis

Relationship to severe pre-eclampsia with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau.

For analyze connection severe pre-eclampsia with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the table below:

Table 6. Relationship to severe pre-eclampsia with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau

No	Severe Pre-Eclampsia	Sectio Caesaria action				Total	%	p value
		Sectio Caesarea		Normal				
		n	%	n	%			
1	Severe Pre-Eclampsia	37	15.7	13	5.5	50	21.3	*0.001
2	No Severe Pre-Eclampsia	86	36.6	99	42.1	185	78.7	
	Amount	123	52.3	112	47.7	235	100	

Source: Primary Data, 2024

Connection previous history of caesarean section with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau.

For analyze relationship between previous history of caesarean section and caesarean section in women giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the table below:

Table 7. Connection history of previous caesarean section with caesarean section on women giving birth at RSUD dr. Abdul Rivai Berau

No	Previous history of Sectio Caesarea	Sectio Caesaria action				Total	%	p value
		Sectio Caesarea		Normal				
		n	%	n	%			
1	There is a history of caesarean section	33	14	13	5.5	46	19.6	*0.006
2	There isn't any history of caesarean section	90	38.3	99	42.1	189	80.4	
Amount		123	52.3	112	47.7	235	100	

Source: Primary Data, 2024

Premature rupture of membranes with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau.

For analyze connection premature rupture of membranes with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau, can be seen in the table below:

Table 8. Premature rupture of membranes with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau

No	Premature rupture of membranes	Sectio Caesaria action				Total	%	p value
		Sectio Caesarea		Normal				
		n	%	n	%			
1	Experiencing Premature Rupture of Membranes	29	12.3	14	6	43	18.3	*0.043
2	Do not experience premature rupture of membranes	94	40	98	41.7	192	81.7	
Amount		123	52.3	112	47.7	235	100	

Source: Primary Data, 2024

Discussion

Respondent Characteristics

Age

Based on the research results, it is known that the age of mothers giving birth at RSUD dr. Abdul Rivai Berau is mostly between 20-35 years old with 177 respondents (75.3%), while at least < 20 years there were 5 respondents (2.1%).

The results of this study are in accordance with Suciawati's (2023) research showing that in this study the most at-risk ages were < 20 years and > 35 years at 52.2%. Where 92 respondents (100%) in the age group at risk category < 20 years and > 35 years have a relationship and have a 0.5 times chance of having a caesarean section decision for mothers giving birth. Likewise, in research conducted by Sari (2019), the age at risk of 58 respondents (67.4%) was higher than the age without risk (32.6%), which proves that maternal age is highly related to the incidence of caesarean section. Another study conducted by Regina et al., (2019) stated that there was a significant relationship between maternal age and delivery via SC and patients who were at a high risk for CS had a 4.617 times risk of giving birth via SC compared to patients who had low risk age for SC. Pregnancy over the age of 35 years causes a woman to be exposed to medical and obstetric complications, both during vaginal and abdominal delivery. (Komariah & Nugroho, 2020).

Researchers assume that age of mothers giving birth at RSUD dr. Abdul Rivai Most are between 20-35 years old, which is the safe age for pregnancy, however Pregnant women under 20 years of age easily experience an increase in blood pressure and cause seizures more quickly due to immature reproductive organs. Meanwhile, when pregnant women are over 35 years old, as they get older, they are susceptible to a decline in a person's bodily functions, which can lead to an increase in blood pressure.

Gestational Age

Based on the research results, it is known that the gestational age of women giving birth at RSUD dr. Abdul RivaiBerau mostly 40 weeks with 71 respondents (30.2%), while at least 39 weeks there were 47 respondents (20%). The results of this study are in accordance with Suciawati's (2023) research showing that the majority of mothers give birth at 40 weeks' gestation. Study (Kibe et al., 2022) shows that the majority of mothers give birth at 40 weeks' gestation. Meanwhile, Afriani's research (AFRIANI et al., 2021) shows that the majority of mothers give birth between 37-38 weeks of gestation. Researchers assume that the gestational age of women giving birth at RSUD dr. Abdul RivaiBerau mostly 40 weeks. Where a caesarean section can be carried out at a gestational age of between 37-38 weeks, possibly with the consideration that contractions do not occur first.

Parity

Based on the research results, it is known that parity among women giving birth at RSUD dr. Abdul RivaiBerau is mostly multigravida with 129 respondents (54.9%), while the least is grandmultigravida there were 47 respondents (20%). The results of this research are in accordance with research by Iffah (2023) showing that the majority of respondents are multigravida parity. Afriani's (2021) research shows that the majority of respondents are multigravida parity. The results of this study do not match the research (Suciawati et al., 2023) shows that in this study the highest number of primigravidas was 63%. Caesarean section decisions based on parity in the primigravida group tend to be higher in determining caesarean section delivery decisions compared to grand multigravida because the possibility of birth abnormalities in primigravidas is quite large in caesarean section decisions. (Suciawati et al., 2023). Researchers assume that parity in mothers giving birth at RSUD dr. Abdul RivaiBerau is mostly multigravida. This is because if the mother gives birth too often, the womb will become weaker so the risk of problems during labor is higher, including bleeding. Dangers that can occur are position abnormalities, latitude birth, uterine tearing in latitude abnormalities, prolonged labor, postpartum hemorrhage (Haryanti, 2020).

Education

Based on the research results, it is known that education for mothers giving birth at RSUD dr. Abdul RivaiBerau mostly graduated from high school with 129 respondents (54.9%), while at least they graduated from junior high school there were 23 respondents (9.8%). education for mothers giving birth at RSUD dr. Abdul RivaiBerau mostly graduated from high school with 129 respondents (54.9%), while at least they graduated from junior high school there were 23 respondents (9.8%).

The results of this research are in accordance with research by Iffah (2023) which shows that the majority of respondents' education has completed high school, which is classified as high. Sudarsih's research (2023) shows that the majority of respondents' education completed high school. Likewise, Suciawati's (2023) research shows that the majority of respondents' education has completed high school. Researchers assume that the majority of respondents in this study graduated from high school which is quite good. The better a person's education level, the more information they receive which can influence their knowledge in maintaining health during pregnancy.

Work

Based on the research results, it is known that the work of mothers giving birth at RSUD dr. Abdul RivaiBerau mostly as housewives amounted to 164 respondents (69.8%), while at least as traders/entrepreneurs there were 18 respondents (7.7%). The results of this research are in accordance with research by Sudarsih (2023) which shows that the majority of respondents are housewives. Likewise, Afriani's (2021) research shows that the majority of respondents are housewives. Likewise, Iffah's (2023) research shows that the majority of respondents are housewives.

The majority of mothers who experience caesarean section at work are housewives. Therefore, the family's financial capacity is one of the considerations in making the decision to give birth by caesarean section (Syara, 2018). A person's job can have an impact on income factors (Anggarini & Andriani, 2022). Researchers assume that work for mothers giving birth at RSUD dr. Abdul Rivai Berau is mostly a housewife. This is because respondents are more focused on taking care of the household and husbands who have income cause respondents to prefer to be housewives. Housewives' income comes from their husbands, if their income is low it will affect their health status during pregnancy and childbirth.

Severe Pre-Eclampsia

Based on the research results, it is known that severe pre-eclampsia to mothers giving birth at RSUD dr. Abdul Rivai Berau did not have severe pre-eclampsia, amounting to 185 respondents (78.7%), while pre-eclampsia is severe there were 50 respondents (21.3%). The results of this study are in accordance with research by Asta (2023) showing that the majority of respondents who underwent caesarean section delivery experienced severe pre-eclampsia. Afriani's research (2021) shows that the majority of respondents who had caesarean section deliveries experienced severe pre-eclampsia. Meanwhile, Esta's research (2019) shows that the majority of respondents who had caesarean section deliveries did not experience severe pre-eclampsia. Researchers assume that Mother giving birth at RSUD Dr. Abdul Rivai Berau do not have severe pre-eclampsia. Where severe pre-eclampsia is caused by arteriolar vasospasm, including primigravida, multiple pregnancies, hydramnios, hydatidiform mole, multigravida, severe malnutrition, maternal age less than 20 years or more than 35 years and anemia.

Previous history of Sectio Caesarea

Based on the research results, it is known that a history of previous caesarean section in women giving birth at RSUD dr. Abdul Rivai Berau is largely absent previous history of caesarean section amounting to 189 respondents (80.4%), while there is previous history of caesarean section there were 46 respondents (19.6%). The results of this study are in accordance with research by Iffah (2023) showing that the majority of respondents who underwent caesarean section delivery were due to having a previous history of caesarean section. Study (Sudarsih et al., 2023) showed that the majority of respondents who underwent caesarean section delivery were due to having a previous history of caesarean section. Meanwhile, Esta's research (2019) shows that the majority of respondents who underwent caesarean section delivery were not due to having a previous history of caesarean section. Researchers assume that Mother giving birth at RSUD Dr. Abdul Rivai Berau is largely absent previous history of caesarean section. Where the mother gave birth Once caesarean section delivery, there is a higher risk of experiencing a tear in the uterus which can cause heavy bleeding and undergoing removal of the uterus.

Premature rupture of membranes

Based on the research results, it is known that premature rupture of membranes to mothers giving birth at RSUD dr. Abdul Rivai Berau mostly do not experience premature rupture of membranes amounting to 192 respondents (81.7%), while experiencing premature rupture of membranes there were 43 respondents (18.3%). The results of this study are in accordance with research by Asta (2023). Asta (2023) shows that the majority of respondents who underwent caesarean section delivery were due to premature rupture of membranes. Afriani's research (2021) shows that the majority of respondents who underwent caesarean section delivery were due to premature rupture of their membranes. Meanwhile, Esta's research (2019) shows that the majority of respondents who underwent caesarean section delivery were not due to premature rupture of membranes. Researchers assume that Mother giving birth at RSUD Dr. Abdul Rivai Berau mostly do not experience premature rupture of membranes. Where if it happens The latent period is too long and the amniotic fluid has broken, then infection can occur in the mother and baby.

Action *Sectio Caesarea*

Based on the research results, it is known that caesarean section was performed on women giving birth at RSUD dr. Abdul Rivai Berau most childbirth *sectio caesaria* amounting to 123 respondents (52.3%), while normal delivery there were 112 respondents (47.7%). The results of this research are in accordance with Asta's (2023) research showing that the majority of respondents did *Sectio Caesarea* delivery. Study (Nedberg et al., 2020) shows that the majority of respondents do *Sectio Caesarea* delivery. Meanwhile research (Giang et al., 2022) shows that the majority of respondents do normal delivery.

Caesarean section (SC) namely the removal of the fetus through an incision made in the abdominal wall and uterus. This procedure is considered major abdominal surgery by opening the abdominal wall and uterine wall (Lestari, 2021). The act of giving birth by *Sectio Caesarea* is caused by pregnancy complications which is the main reason that delivery must be carried out by *Sectio Caesarea* (Rahmawati, 2011). Factors that increase the risk of caesarean section include Premature Rupture of Membranes (PROM) (Oxorn & Forte, 2010). Researchers assume that Mother giving birth at RSUD Dr. Abdul Rivai Berau most childbirth *sectio caesaria*. Where *Sectio Caesarea* delivery is caused by pregnancy complications such as: severe eclampsia and previous history of caesarean section (former SC) and PROM.

Relationship to severe pre-eclampsia with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau.

Based on the research results, it is known that highest proportion in childbirth *caesarean section* amounting to 37 respondents (15.7%), but there were normal delivery totaling 13 respondents (5.5%). Meanwhile, 185 respondents did not have severe pre-eclampsia, the highest proportion of normal births was 99 respondents (42.1%), but there were *caesarean section* totaling 86 respondents (36.6%). The results of the chi square statistical test showed that $p \text{ value} = 0.001 < \alpha : 0.05$ so that H_a was accepted, namely that there was a relationship with severe pre-eclampsia with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau.

The results of this study are in accordance with research by Asta (2023) showing that there is a relationship with severe pre-eclampsia with caesarean section delivery at RSIA Muhaya Pangkal Pinang. Afriani's research (2021) shows that there is a relationship between severe pre-eclampsia and the incidence of caesarean section in women giving birth at Arga Makmur Regional Hospital. Esta's research (2019) shows that there is a relationship with severe pre-eclampsia with caesarean section delivery at Rantauprapat Regional Hospital. Researchers assume that there is a connection with severe pre-eclampsia with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau. This is because if the diagnosis of severe pre-eclampsia has been confirmed, a caesarean section must be performed. Induction of labor to deliver the fetus vaginally is considered the best course of action for the mother, but several concerns arise, including an under-ripe cervix. So it would be better to have a caesarean section.

Connection previous history of caesarean section with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau.

Based on the research results, it is known that highest proportion in childbirth *caesarean section* amounting to 33 respondents (14%), but there are normal delivery totaling 13 respondents (5.5%). Meanwhile, 189 respondents did not previous history of caesarean section, the highest proportion of normal deliveries was 99 respondents (42.1%), but there were deliveries *caesarean section* amounting to 90 respondents (38.3%). The results of the chi square statistical test showed $p \text{ value} = 0.006 < \alpha : 0.05$ so that H_a was accepted, namely there was a relationship history of previous caesarean section with caesarean section on women giving birth at RSUD dr. Abdul Rivai Berau.

The results of this study are in accordance with research by Iffah (2023) showing that there is a relationship with a previous history of caesarean section with a caesarean section delivery at the

mother's delivery at RSU Artha Medica Binjai. Sudarsih's research (2023) shows that there is a relationship Birth history of caesarean section at Medika Stannia Sungailiat Hospital. Esta's research (2019) shows that there is a relationship with a previous history of caesarean section with caesarean section delivery at Rantauprapat Regional Hospital. Uterine surgery will cause scar tissue during caesarean section delivery because scar tissue can make the uterus tear easily during normal delivery. Pregnant women who have already given birth by caesarean section should have another caesarean section delivery to avoid uterine tearing. (Amrullah, 2020). Researchers assume that there is a connection between premature rupture of membranes with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau. This is because Uterine surgery will cause scar tissue during caesarean section delivery, where scar tissue can make the uterus tear easily during normal delivery.

Premature rupture of membranes with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau.

Based on the research results, it is known that of 43 respondents experienced premature rupture of membranes, the highest proportion during labor *caesarean section* amounting to 29 respondents (12.3%), but there were normal delivery totaling 14 respondents (6%). Meanwhile, 192 respondents did not experience premature rupture of membranes, the highest proportion of normal deliveries was 98 respondents (41.7%), but there were *caesarean section* totaling 94 respondents (40%). The results of the chi square statistical test showed that $p \text{ value} = 0.043 < \alpha : 0.05$ so that H_a was accepted, namely that there was a relationship between premature rupture of membranes with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau.

The results of this study are in accordance with Asta's (2023) research. Asta (2023) shows that there is a relationship between premature rupture of membranes with caesarean section delivery at RSIA Muhaya Pangkal Pinang. Afriani's research (2021) shows that there is a relationship between premature rupture of membranes and the incidence of caesarean section in women giving birth at Arga Makmur Regional Hospital. Esta's research (2019) shows that there is a relationship between premature rupture of membranes with caesarean section delivery at Rantauprapat Regional Hospital. Researchers assume that there is a connection between premature rupture of membranes with a caesarean section on the mother giving birth at RSUD dr. Abdul Rivai Berau. Based on the discussion, it is known that severe pre-eclampsia is the most dominant factor associated with caesarean section in women giving birth at RSUD dr. Abdul Rivai Berau because the $p \text{ value} = 0.001$ is the strongest compared to the $p \text{ value}$ of previous caesarean section history ($p \text{ value} = 0.006$) and premature rupture of membranes ($p \text{ value} = 0.043$). This is because the main treatment for pre-eclampsia is termination of pregnancy.

CONCLUSION

From the results of research and discussion regarding factors related to caesarean section procedures for women giving birth at RSUD dr. Abdul Rivai Berau, it was concluded that: the characteristics of the respondents were mostly 20-35 years old, gestation age 40 weeks, multigravida parity, completed high school education and work as a housewife, the mother gave birth at RSUD dr. Abdul Rivai Berau, who experienced severe pre-eclampsia of 21.3%, the mother gave birth at RSUD dr. Abdul Rivai Berau who had a previous history of caesarean section was 19.6%, mothers gave birth at RSUD dr. Abdul Rivai Berau, who experienced premature rupture of membranes at 18.3%, the mother gave birth at RSUD dr. Abdul Rivai Berau with caesarean section delivery was 52.3%, severe pre-eclampsia was associated with caesarean section delivery in women giving birth at RSUD dr. Abdul Rivai Berau, where patients who experienced severe pre-eclampsia mostly underwent caesarean section procedures, a previous history of caesarean section was related to caesarean section procedures on mothers giving birth at RSUD dr. Abdul Rivai Berau, where patients who had a previous history of caesarean section mostly underwent caesarean

section, premature rupture of membranes was associated with caesarean section in women giving birth at RSUD dr. Abdul Rivai Berau, where patients who experienced premature rupture of membranes mostly underwent caesarean section. The weaknesses and difficulties of the research are that at the time of this study the data taken based on the simple random sampling technique is a random sampling of the population without regard to the strata in the population and each member of the population has the same opportunity to be sampled. Further research is recommended to use a more accurate sampling technique so that the data used meets the specified criteria.

References

- Adnyanawati, NNS, Rosmiyati, R., & Iqmy, LO (2023). The Effect Of Hypno-Breastfeeding And Oxytocin Massage On Breast Milk Production In Postpartum Mothers. *JKM (Malayayati Midwifery Journal)*, 9(4), 657-663.
- AFRIANI, S., Andriani, L., Mizawati, A., Nugraheni, DE, & Widiyanti, D. (2021). Factors Associated with the Occurrence of Sectio Caesarea in Mothers Giving Birth at Argamakmur Regional Hospital in 2019. Health Polytechnic, Ministry of Health, Bengkulu.
- Aminatubillah, VT, Widjajanegara, H., & Yuniarti, Y. (2019). The Relationship Between Maternal Age and Parity and the Incidence of Premature Rupture of Membranes at the Cingambul Poned Health Center, Majalengka Regency, 2016-2017.
- Amrullah, HM (2020). Living Value Education for Children Based on the Koran. PTIQ Institute Jakarta.
- Anggarini, IA, & Andriani, R. (2022). THE INFLUENCE OF ANXIETY ABOUT THE COVID-19 PANDEMIC ON POST PARTUM MOTHER'S MILK EXPLOSION. *Pomegranate Hope Journal*, 9(2), 95-100.
- Aprilia, Y.R., & Ritchmond, B. (2011). *Gentle Birth Gives Birth Without Pain*. Jakarta: Gramedia Widiasarana Indonesia.
- Aspiani, RY (2014). *Textbook of Nursing Care for Clients with Cardiovascular Disorders NIC & NOC Application*. Jakarta: EGC.
- Asta, A., Aisyah, S., & Silaban, TDS (2023). ANALYSIS OF FACTORS ASSOCIATED WITH SECTIO CAEARIA DELIVERY. *Aisyiyah Medika Journal*, 8(1).
- Astriana, W. (2017). The incidence of anemia in pregnant women is seen from parity and age. *Aisyah Journal: Journal of Health Sciences*, 2(2), 123-130.
- Esta, F.A. (2020). Factors Associated with the Occurrence of Sectio Caesarea Birth at Rantauprapat Regional Hospital in 2017.
- Fauziah, F., & Fitriana, F. (2018). Relationship between Early Mobilization Post Sectio Caesarea (Sc) and the Healing Process of Surgical Wounds in the Obstetrics Room at Regional Hospital. *Abdul Wahab Sjahranie Samarinda 2018. Bunda Edu-Midwifery Journal (BEMJ)*, 1(1), 23-27.
- Giang, HTN, Duy, DTT, Hieu, LTM, Vuong, NL, Ngoc, NTT, Phuong, MT, & Huy, NT (2022). Factors associated with the very high caesarean section rate in urban areas of Vietnam. *Plos one*, 17(8), e0273847.
- Haryanti, Y. (2020). THE INFLUENCE OF MOTHER'S PARITY ON THE INCIDENT OF PLACENTA RETENTION. *SCIENTIFIC JOURNAL OF PUBLIC HEALTH*, 1(1), 52-58.
- Iffah, U., Marbun, RR, & Sinaga, SP (2020). FACTORS RELATED TO CAESAREA SECTIO DELIVERY AT RSU ARTHA MEDICA BINJAI. *Lentera' Aisyiyah Health Journal*, 3(1), 263-267.
- Ministry of Health, RI (2018). *Basic Health Research (Risksdas) Health Research and Development Agency of the Ministry of the Republic of Indonesia in 2018*.
- Kibe, P.M., Mbuthia, G.W., Shikuku, D.N., Akoth, C., Oguta, J.O., Ng'ang'a, L., & Gatimu, S.M. (2022). Prevalence and factors associated with caesarean section in Rwanda: a trend analysis of Rwanda demographic and health survey 2000 to 2019-20. *BMC pregnancy and childbirth*, 22(1), 1-13.
- Komariah, S., & Nugroho, H. (2020). The relationship between knowledge, age and parity with the incidence of pregnancy complications in third trimester pregnant women at the Aisyiyah Saminda Mother and Child Hospital. *UWIGAMA HEALTH: Journal of Public Health*, 5(2), 83.
- Lenau, M., Hardiningsih, E.F., Hartati, D., & Sulistyorini, C. (2023). THE RELATIONSHIP OF ANEMIA IN PREGNANCY WITH POSTPARENT BLEEDING AND LBW AT RSUD dr. ABDUL RIVALI. *Humantech: Indonesian Multidisciplinary Scientific Journal*, 2(5), 861-878.
- Lestari, RT (2021). Informed Choice and Informed Consent in Family Planning Services in Independent

- Practice Midwives. *SOEPRA*, 7(1), 88-106.
- Nedberg, I.H., Rylander, C., Skjeldestad, F.E., Blix, E., Ugulava, T., & Anda, E.E. (2020). Factors associated with cesarean section among primiparous women in Georgia: a registry-based study. *Journal of Epidemiology and Global Health*, 10(4), 337.
- Oktavianti, E. (2023). COMPREHENSIVE MIDWIFERY CARE IN NY. R AT HASTARINI MAIN CLINIC, WEST KOTAWARINGIN DISTRICT. BORNEO CENDEKIA MEDIKA PANGKALAN BUN HEALTH SCIENCE HIGH SCHOOL.
- Organization, W.H. (2023). Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division: executive summary.
- Oxorn, H., & Forte, W.R. (2010). *Obstetrics: pathology and physiology of childbirth*. Andi Publisher.
- Prawirohardjo, S. (2018). *Gynecology 4th edition*. Jakarta: PT bina library.
- Putri, EM (2019). The effect of giving abdominal breathing relaxation therapy on post caesarean section pain with spinal anesthesia in PKU Muhammadiyah Gamping. Yogyakarta Ministry of Health Polytechnic.
- Rahmawati, EN (2011). Practical knowledge of midwifery. Surabaya: Victory Inti Cipta, 229-231.
- Ramandanty, PF (2019). Nursing Care for Mothers Post Sectio Caesarea Surgery in the Mawar Room at AW Sjahranie Hospital, Samarinda.
- Suciawati, A., Carolin, BT, & Pertiwi, N. (2023). Factors Associated with the Decision to Sectio Caesarea in Birthing Women. *Journal of Professional Nursing Research*, 5(1), 59-68.
- Sudarsih, I., Agustin, A., & Ardiansyah, A. (2023). The Relationship between Pregnancy Complications and Childbirth History on Sectio Caesarea Procedures. *Journal of Professional Nursing Research*, 5(4), 1567-1576.
- Syara, AM (2018). The Effect of Chewing Gum on Intestinal Peristalsis in Post Appendectomy Patients. *Journal of Medical Nursing Research*, 1(1), 15-19.
- Wahyuningsih, S. (2019). *Maternity Nursing Textbook*.
- Yuniwati, C. (2019). Effectiveness of Respiratory Relaxation Techniques and Foot and Hand Massage Techniques in Post-Caesarean Section (SC) Patients at Langsa Regional Hospital, Aceh. *Indonesian Journal for Health Sciences*, 3(1), 32-36.