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Factor Analysis of Caesarean Section at Panti Waluya Hospital, Malang

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Abstract

The incidence of caesarean section in Indonesia has increased every year. Caesarean section is an alternative to delivery when vaginal delivery cannot be done. The problems studied are the factors that influence the action of cesarean section delivery. The purpose of the study was to analyze the factors of delivery by caesarean section at Panti Waluya Hospital, Malang. The design of the study used cross sectional. The population in this study was all parturition mothers who were in the medical records of Panti Waluya Hospital Malang in January-May 2021. The sampling technique in this study used Simple Radom sampling, obtained 55 samples that met the inclusion criteria (ie data in the medical record). The study was carried out at the Panti Waluya Hospital in Malang in May 2021. The instrument used observation sheet. The data taken came from secondary data, namely the patient's medical record. The independent variables of the study were maternal age, gestational age, employment status, parity, disease history, income, insurance, education, delivery distance. The dependent variable of the study was caesarean section. The data analysis used Fisher exact test and logistic regression test. The results showed that history of disease and delivery interval had a significant correlation with delivery, and the variable that was the determinant of CS delivery was history of disease (p=0.012; OR=8.463). It is necessary to carry out routine ANC for pregnant women, in order to avoid risk factors for childbirth by caesarean section.

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INTRODUCTION

Caesarean section is a way of giving birth to a fetus by making an incision in the uterine wall through the front wall of the abdomen and vagina, or caesarean section is a hysterotomy to give birth to a fetus in the womb (Mochtar, 2012). Caesarean section is an artificial birth, in which the fetus is born through an incision in the abdominal wall and uterine wall with the condition that the uterus is intact and the fetal weight is above 500 grams (Prawirohardjo, 2007).

Delivery by caesarean section is intended for certain medical indications, which are divided into indications for the mother and indications for the baby. Sectio caesaria delivery or cesarean section must be understood as an alternative to childbirth when normal delivery is no longer possible (Patricia, 2005; Irwan, 2009; Lang, 2011). Even though 90% of deliveries are categorized as normal or uncomplicated delivery, if complications occur, the treatment always adheres to the priority of the safety of the mother and baby. Caesarean section operation is the last choice of delivery after considering how vaginal delivery is not feasible to do (Akhmad, 2008; Asamoah et.al., 2011).

Based on data from the World Health Organization (WHO, 2018), 10-15% of all deliveries are performed by cesarean section. The incidence of delivery by cesarean section without medical indications in each country reaches 2.10%. In Indonesia, births by cesarean section are quite high, namely 9.8% per year. The results from Riskesdas 2018 that births with Caesarean section are 17.6%. The highest percentage is in DKI Jakarta (31.1%) and the lowest is in Papua (6.7%). Normal delivery data were (81.5%) deliveries and deliveries by cesarean section (17.6%) from the total number of deliveries. The results of Riskesdas in 2018 in East Java province showed a tendency for the proportion of deliveries in health facilities to be 95.3%. In East Java Province, the number of deliveries by CS in 2019 was 124,586 out of 622,930 or about 20% of all deliveries (Pusdatin Kemenkes, 2019).

Several risk factors in pregnancy that cause delivery through CS include maternal age, comorbidities, gestational age and history of CS (Prawirohardjo, 2010), as for other factors such as: employment status, parity status, and the last parturition distance (Prawihardjo, 2010). According to the Depkes RI (2010) at the age of the mother who is too young < 20, the condition of the uterus and pelvis has not developed properly, and vice versa for those aged > 35 years the health and condition of the uterus is not as good as when the mother is 20-35 years old. >35 years is a non-reproductive age or this age is included in the high risk of pregnancy (Depkes, 2010). Based on the results of Himapid's research in the working area of the Himalate Public Health Center Makassar in 2009 showed that antenatal care, maternal age < 20 years or > 35 years and with grand multipara were associated with increased implementation of SC action. Concomitant diseases or disorders of pregnancy include placenta previa which causes the placenta to block the birth canal, diabetes, hypertension, high myopia, heart disease, asthma, and fetal position abnormalities. Prawirohardjo (2010), work shows the level of welfare and the opportunity to use and receive health services. Some of the reasons that underlie the tendency to give birth by CS are increasing in working mothers, because they are very time bound and already have certain schedules such as when to work again (Role, 2005). By doing SC, working mothers can arrange a birth schedule that can be adapted to work (Pillitteri, 2002). Parity is one of the factors that affect cesarean delivery, regardless of whether the fetus is alive or dead at birth. Maternal mortality under the age of 20 years (young primily at risk) was 2 to 5 times higher for the occurrence of CS because it affects His causing an increase in CS due to the progress of failed labor and maternal mortality also increases at the age above 30 years (old primi at risk) because Old age experiences high pregnancy complications such as maternal mortality, preeclampsia, eclampsia, hypertension and perinatal morbidity and mortality. A woman after giving birth takes two to three years to recover her body and prepare herself for the next delivery and give the wound the opportunity to heal properly. 2000). This is because the shape and function of the reproductive organs have not returned to perfection so that their function will be disrupted in the event of pregnancy and rebirth. The distance between two deliveries that are too close causes an increase in anemia which can cause low birth weight, preterm birth, and stillbirth, which can lead to low birth weight. affect the labor process and infant factors (Kusumawati, 2010). Pregnancy spacing that is too far is associated with increasing maternal age. This will result in a degenerative process, weakening of the strength of the uterine and pelvic muscle functions which causes inadequate

strength so that there are many prolonged labors which result in the need for CS (Winkjosastro, 2005).

The results of research by Wulandari, et al (2018) at Elisabeth Hospital Semarang stated that there was a correlation between maternal age and caesarean section at St. Elisabeth Semarang where from 24 respondents who had a risky age of 21 people (87.5%) had a SC, this proves that the at-risk age (<25 years/>35 years) is very prone to SC action, this can be caused by age <20 years, the organs that are formed are not yet perfect and are not ready to give birth spontaneously, while at the age of >35 years, organs that help the normal delivery process are weak, and at that age may already have a disease/disorder, so it is very risky to give birth normally. Wulandari, et al (2018) also stated that there was a significant correlation between comorbidities and SC action where 80% of respondents who suffered from hypertension had a risk of pre-eclampsia which was an indication for SC. Meanwhile, the previous history of cesarean section with sc procedure had a significant correlation, where of the 16 respondents who had a history of sc entirely (100%) underwent cesarean section, this proves that mothers with a previous cesarean history have a high risk of normal delivery, previous cesarean history It is very influential on the current CS action because previous CS actions can cause uterine rupture if the mother gives birth normally which of course can endanger the mother and baby. low transverse uterine incision. Research by Sihombing, et al (2017) that cesarean delivery is greater for working mothers in the formal sector as private employees and living in cities. One of the reasons that underlie the tendency to choose delivery by caesarean section in big cities is because the majority of mothers have status as workers (Sihombing et al., 2017). A worker is bound by his working time so he wants to make the most of his time with his baby.

The initial survey was conducted by researchers at the Panti Waluya Hospital in Malang which facilitated delivery by caesarean section. Data from the medical records of the number of mothers giving birth in January to April 2021 were 55 people, 41 people (75%). Based on this phenomenon, the researchers are interested in conducting research with the title "Factor Analysis of Caesarean section at Panti Waluya Hospital Malang".

METHOD

The design of the study used cross sectional. The population in was all parturition mothers who were in the medical records of Panti Waluya Hospital Malang in January-May 2021. The sampling technique used Simple Radom sampling and obtained 55 samples. The study was carried out at the Panti Waluya Hospital in Malang in May 2021. The instrument used was an observation sheet. The data taken came from secondary data, namely the patient's medical record. The independent variables of this study were maternal age, gestational age, employment status, parity, disease history, income, insurance, education, delivery distance. The dependent variable of this study was caesarean section. After the data was collected, it was then tested with Fisher's exact test to determine whether there was a correlation between each independent and dependent variable. Data that has met the significant results of the Fisher exact test, then continued with the Logistics Regression test.

RESULT

Table 1 Distribution of Respondents Characteristics

No	Characteristics	Frequency	%
1	Mothe rs's Age		
	No Risk	44	80
	At Risk	11	20
	Quantity	**55**	**100**
2	Gestational Age		
	Premature	13	24
	Aterm	42	76
	Quantity	**55**	**100**
3	Job Status		
	Work	43	78
	Jobless	12	22
	Quantity	**55**	**100**
4	Parity Status		
	Primipara	20	36
	Multipara	35	64
	Quantity	**55**	**100**
5	Disease History		
	Yes	26	47
	No	29	53
	Quantity	**55**	**100**

6	Income		
	< standard	13	24
	≥ standard	42	76
	Quantity	**55**	**100**
7	Insurance		
	Yes	46	84
	No	9	16
	Quantity	**55**	**100**
8	Education		
	Base	30	55
	Advance	25	45
	Quantity	**55**	**100**
9	Partus Distance		
	<5 years	14	39
	≥ 5 years	22	61
	Quantity	**36**	**100**

Souce: Primary Data

Based on Table 1. Almost all parturition mothers at Panti Waluya Sawahan Hospital Malang in 2021 in the category of non-risk labor (21-34 years) as many as 44 people (80%), almost all parturition mothers are included in the term category where the gestational age is 38-34. 42 weeks as many as 42 people (76%), almost all parturition mothers had the status as workers as many as 43 people (78%), most parturition mothers had multiparous parity status as many as 35 people (64%), most parturition mothers in the category had no history of disease as many as 29 people (53%), almost all parturition mothers have income > standard as many as 42 people (76%), almost all parturition mothers have insurance as many as 46 people (84%), most parturition mothers in the category of base education as many as 30 people (55%) and most of the parturition mothers had a partus distance >5 years.

Table 2 Results of Statistical Data

Variabel		Persalinan		***p***
		Spontan	**SC**	
Mothers's Age	No Risk	11	33	1,00
	At Risk	3	8	
Gestational Age	Premature	2	11	0,477
	Aterm	12	30	
Job Status	Work	10	33	0,448
	Jobless	4	7	
Parity Status	Primipara	7	13	0,219
	Multipara	7	28	
Disease History	Yes	2	24	0,004
	No	12	17	
Income	< Standard	5	8	0,218
	≥ Standard	9	33	
Insurance	Yes	10	36	0,210
	No	4	5	
Education	Base	7	23	0,692
	Advance	7	18	
Partus Distance	< 5 year	12	21	0,023
	≥ 5 year	2	20	

Souce: Primary Data

Based on Table 2. the results of the bivariate test between the independent and dependent variables showed that age, gestational age, job status, parity, income, insurance and education did not have a significant correlation with delivery (p> 0.200), so they were not included in the logistic regression analysis. Meanwhile, disease history and partus distance had a significant correlation with delivery (p≤0.200) and were eligible for logistic regression test.

Table 3 Results of Logistics Regression Test

Variabel	Koefisien	*p*	OR (CI)
Disease History	2,136	0,012	8,463 (1,590 - 45,054)
Partus Distance	-1,742	0,045	0,175 (0,032 - ,960)

Souce: Primary Data

Based on Table 3, it was found that disease history and partus distance had a significant correlation with delivery, and the variable that was the determinant of Caesarean sectionn was disease history (p = 0.012; OR = 8.463).

DISCUSSION

Analysis of Disease History Factors

History of disease is one of the factors that can affect the health of the mother before pregnancy or after giving birth, it can be categorized as a history of diseases that are often experienced during pregnancy and are not related to direct obstetric causes. The disease that is often experienced by the mother is not the cause of maternal death, in order to prevent maternal death due to diseases that are often suffered by parturition mothers during the delivery process, it is necessary to perform an CS delivery. The risk of mothers with a history of disease experiencing maternal death is 210.2 times higher than that of mothers without a history of disease (Simarmata, 2007).

Based on the results of the study, it was found that almost 24 people had a history of disease in parturition mothers. This number is more than the 17 respondents who did not have a history of the disease. This proves that the history of the disease is one of the factors that can affect the action of SC in parturition mothers. There are still many mothers during pregnancy and after giving birth who undergo cesarean section because they cannot be separated from an unhealthy lifestyle and do not make pregnancy visits to find out the condition of the fetus or history of comorbidities in the mother. The likelihood of cesarean delivery after an unsuccessful attempt at normal delivery increases in mothers with a history of chronic diseases such as heart disease, asthma, hypertension and diabetes (Nurarif and Hardhi, 2015).

Maternal morbidity and mortality with a history of chronic disease increases during pregnancy and childbirth. In relation to parturition mothers who suffer from diabetes, it is possible to have a large baby so that the risk of having to carry out a cesarean delivery and also increase mild heart disease and still be able to give birth vaginally, but mothers with severe heart disease cesarean section is an option because of mild hemodynamic disorders compared to childbirth. vaginally. Thus, CS delivery can be taken even though it is at high risk, so it is not possible for parturition mothers to have a normal delivery and it can be planned in advance to perform CS to save the condition of the mother and baby, as well as increase the mother's knowledge about childbirth as needed (Nanna et al, 2014).

Based on the results of the Bivariate Test, a history of disease with SC action was obtained, a p value of 0.004 which means that there is a correlation between history of disease and SC action. This is in line with research (Prihartanti and Ratna, 2018) which shows that there is a significant correlation between history of illness and delivery and also the results of Rini Wahyuni's research (2017), there is a correlation between history of illness and maternal caesarean sectionn in Pringsewu Hospital.

A history of illness is defined as a disease that the mother had suffered before pregnancy or childbirth or a disease that arose during pregnancy that was not related to direct obstetric causes, but was exacerbated by the physiological effects of pregnancy so that the mother's condition worsened. The results of Maysaroh's research (2016) showed that in the case group (mothers who gave birth by caesarean section) the diseases suffered by the mother included hypertension, obesity and diabetes. The most common disease is heart disease. This is because at 34-36 weeks of gestation there is an increase in heart rate and pulse an average of 88 beats per minute. In normal hearts it is not a problem, but in mothers with heart disease, it can cause decompensation cordis (Aeni, 2011). In mothers with diabetes, the fetus tends to be larger than normal babies, this situation can lead to difficulties in labor and delivery. Although these babies are large, their behavior resembles that of premature babies and

cannot withstand the burden of prolonged labor. Death during labor and postpartum is common. In addition, a number of babies die in the womb before reaching maturity. Because of the danger to the safety of the fetus and because of the high proportion of toxemia in pregnant women with diabetes, it is necessary to terminate the pregnancy prematurely. In primigravida and multipara with long and closed cervix or with poor obstetric history, (Oxorn, 2003). Mothers with high blood pressure (hypertension) in their condition are not direct factors that cause cesarean delivery, but pregnant women with hypertension have a risk of preeclampsia/eclampsia, where preeclampsia can harm both the mother and the fetus and can cause seizures in the mother and lead to death (Dharma et al. ,2005). Hypertension in pregnant women will affect the cardiovascular system and tend to narrow blood vessels so that blood flow to the fetus is disrupted, as a result the fetus will stimulate labor. In addition, hypertension will affect the uterus to contract which will cause the workload of labor for hours so it is necessary to do a cesarean delivery (Poedjiningsih, 2001).

Analysis of Partus Distance Factors

Pregnancy interval is the time interval between two successive pregnancies of a woman. Short pregnancy intervals will directly have an effect on the health of women and the fetus they contain. After giving birth, women need 2 to 3 years to recover their bodies and prepare for the next pregnancy and childbirth (Rifdiani, 2017). If the distance between pregnancies is too close, it tends to cause damage to the female reproductive system, both physiologically and pathologically, thus giving the possibility of anemia in the mother and even causing death (Sawitri et al., 2014). pregnancy interval 2 years (Natturini, 2009).

The distance between pregnancies of children < 2 years, the uterus and health of the mother have not experienced optimal or perfect recovery. In this pregnancy, it is possible that accompanying disorders may occur. Mothers with birth spacing that are too close to the previous pregnancy have a very bad impact because the birth spacing is too close. too close will cause the reproductive organs that should have recovered from the previous delivery, will work extra for the next delivery. This will have a negative impact on the health condition of the mother and baby. A woman after giving birth takes 2 to 3 years to recover her body and prepare herself for the next delivery and give the wound a chance to heal properly. Short delivery intervals will increase the risk to mother and child (Marisi, 2009). Agudelo and Bellzan found that the distance between pregnancies or births was too close (<6 months) and too far (>5 years) with a history of poor pregnancy and childbirth before, such as vacuum extraction, forceps and cesarean section, such as third trimester bleeding, premature rupture of membranes, puerperal endometritis and anemia, (Aguelo & Bellzan, 2000).

From the results of the bivariate test, the delivery distance became one of the causes of the SC action. Based on the results of this study, a significant value of P = 0.0023 <0.200 was obtained, which means that there is a significant correlation between the distance between parturition and delivery. The results of the logistic regression analysis showed that delivery distance had a significant correlation with cesarean delivery with a significant value (P = 0.045; OR = 0.175). This happens because the mother's reproductive organs have not returned to perfection. Meanwhile, the birth distance that is > 5 years too far will also have a bad impact on the condition of the mother and fetus in the next delivery. This is in line with the theory put forward by Lubis (2013) that the distance between deliveries <2 years is a risk factor in the process of pregnancy and childbirth so that they have the opportunity to have a cesarean delivery.

According to Saifuddin et al (2006), states that the best distance between two pregnancies and birth is 2-4 years. The ideal birth interval is 2 years or more because the short birth spacing will cause a mother to not have enough time to recover her body after giving birth. After giving birth, a mother will experience a puerperium or postpartum period to return the internal reproductive organs to their original or normal state. Pregnancy spacing is a factor that affects a mother's fertility problems. Women who experience pregnancy again quickly after a previous pregnancy indicate a good fertility of a woman. Mothers who gave birth within two years of giving birth to their last one had a greater risk of giving birth to a child with poor survival and ending in death. Other studies have found the opposite where the risk of infant death can also occur in infants who have a short birth susceptibility (Awang, 2003).

Starting from 2005 WHO has been trying to make recommendations for the ideal birth spacing. The distance is in the vulnerable two years between births, this aims to prepare if you want to start a pregnancy while reducing the risks that might occur if you have a subsequent pregnancy. The distance between births of one year or two after giving birth can give mothers enough time to recover from the pregnancy and childbirth that has been carried out, and be able to optimize breastfeeding for the next child (Kabano, et.al., 2016).

Research conducted by Rasdiana Muhammad et al., 2014 found that the proportion of respondents according to gestational distance, the highest was 46 respondents (52.9%) with a gestational distance of more than 2 years and the lowest was 11 respondents (12.6%) who had a gestational distance of less than 2 years and the remaining 30 respondents (34.5%) had never been pregnant. The recommended pregnancy interval is 2-5 years from the last pregnancy. Keeping a distance between pregnancies will create a good potential for pregnancy because it gives the mother an opportunity to rest physically (Edyanti, 2010). 75 mothers (32.6%) of 215 mothers. In this study, it was shown that there was no correlation between gestational distance and cesarean delivery.

A woman after giving birth takes 2 to 3 years to recover her body and prepare herself for the next delivery, and can give the birth wound a chance to heal. Short delivery intervals will increase the risk to mother and child (Mochtar, 2012). Pregnancy with a distance of 2 years or more in mothers often experience complications in childbirth, the possibility that can occur in mothers with arak during delivery will cause bleeding, babies born not enough months before 37 weeks of gestation and babies at low risk of birth <2500 grams.

Disease History Becomes a Determining Factor of Caesarean sectionn

Maternal morbidity and mortality with a history of chronic disease increases during pregnancy and childbirth. For example, a diabetic mother may have a large baby, so the risk of having a cesarean delivery also increases. Mothers with mild heart disease are still possible to give birth vaginally, but in patients with severe heart disease cesarean section is an option because hemodynamic disorders are lighter than vaginal delivery (Nanna et al, 2014).

According to the 2014 World Health Organization (WHO) report, the maternal mortality rate (MMR) in the world is still high at 289,000 people. The high AKI occurs due to a history of complications during and after pregnancy and childbirth. The main complications that cause almost 75% of all maternal deaths are: postpartum hemorrhage, infection (usually after delivery), high blood pressure during pregnancy (pre-eclampsia and eclampsia), complications from childbirth, unsafe abortion, the rest are caused by or related with diseases such as malaria, and AIDS during pregnancy (WHO, 2016).

The results of the study are in line with the opinion expressed by Aprina (2013), namely the cause of delivery by cesarean section can be due to problems on the part of the mother and baby. First, the decision of a previously diagnosed caesarean section. The causes include CPD, severe pregnancy poisoning, severe preeclampsia or eclampsia, abnormalities in the position of the baby (breech, latitude), some cases of the cervix being covered by the placenta (placenta previa), twins, pregnancy in elderly mothers, history of caesarean section in previous pregnancies. Pregnancy complications are associated with the incidence of cesarean delivery in Indonesia. Mothers with pregnancy complications are more likely to give birth by cesarean section than mothers without pregnancy complications. A history of illness in pregnant women is very high risk for the safety of the mother and fetus compared to other determinants or non-medical indications. Mothers who have a history of diseases such as severe pre-eclampsia, heart disease, asthma and diabetes should immediately undergo caesarean section, if no caesarean section is performed, maternal and fetal death can occur. Caesarean section is generally performed when normal vaginal delivery is not possible or due to medical indications. Medical action is only carried out if there are problems in the birth process that can threaten the life of the mother and fetus (Judhita, 2009).

The history of the disease is very high risk for the safety of the mother and fetus as the results of this study are in accordance with the research of Sadiman et al (2009) which states that there is a significant correlation between the history of diseases such as pre-eclampsia and caesarean section delivery. Severe pre-eclampsia and eclampsia can cause complications of maternal and fetal death.

To prevent this, the effort taken is to immediately terminate the pregnancy. To ensure the safety of the mother and fetus, induction and/or through cesarean section are indications for maternal prophylaxis to terminate the pregnancy. From the results of research at Dr. Hospital. Moewardi Surakarta is known that the maternal mortality rate due to caesarean section delivery is 34%, the cause is a history of maternal disease, namely severe pre-eclampsia as much as 54%. Therefore, mothers who give birth with a history of complicated childbirth, pregnancy complications and delivery complications, have a greater chance of having a cesarean section (SC) delivery compared to other determinants of women giving birth.

CONCLUSION

In 2021 deliveries by caesarean section at the Panti Waluya Sawahan Hospital, Malang, amounted to seventy-five percent, higher than the national caesarean section rate. Factors that influence the action of caesarean section at the Panti Waluya Hospital in Malang are the history of the disease and the spacing of parturition.

SUGGESTION

Routine antenatal care and family planning care are needed, as well as early detection of pregnant women to minimize the possibility of complications during childbirth.

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