



## Analysis of Pregnancy Case with Termination of Caesarean Section at PKU Muhammadiyah Gombong Hospital

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### ABSTRACT

Caesarean section (C-section) is a surgical procedure to deliver a baby through incisions in the abdomen and uterus as spontaneous delivery cannot be carried out. C-sections have increased in number from time to time. Even, in Indonesia, C-section shows an increase with varied percentages among provinces. This study aims to identify the determinant factors of delivery with the termination of caesarean section. This study used retrospective data. It involved a total sample of 372 respondents determined with a total sampling method. Data were collected by observation and then the data were analyzed using the Chi-square test. Results: Based on the results of this study, the p-value reached 0.048 for gestational age, 0.014 for maternal age, 0.004 for comorbidities, and 0.003 for the history of C-Section. The results indicate that there was a relationship between gestational age, maternal age, comorbidities, and history of CS with C-Section delivery. Conclusion in this research was The determinant factors of termination of delivery with C-Section covered the mother's age, gestational age, comorbidities or complications during pregnancy, and history of C-Section.

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### ABSTRAK

Persalinan sectio caesarea (SC) merupakan persalinan buatan melalui dinding rahim untuk mengeluarkan janin karena kalau dilakukan persalinan secara spontan tidak bisa dilakukan, persalinan ini dari waktu ke waktu mengalami peningkatan jumlahnya. Dan saat ini operasi sesar di Indonesia menunjukkan peningkatan dan persentasenya bervariasi antar provinsi. Tujuan dari penelitian ini untuk mengidentifikasi determinan kehamilan dengan terminasi operasi sesar Metode : penelitian ini menggunakan retrospektif data. Totalsampel pada penelitian ini adalah 372 responden di ambil dengan metode total sampling. Data di ambil dari observasi dandi tes menggunakan chi-square test. Hasil : berdasarkan dari hasil penelitian ini di dapatkan bahwa p-value pada umur kehamilan sebesar 0.048, umur ibu 0.014, penyakit penyerta 0.004 dan riwayat SC 0.003. menyatakan bahwa terdapat hubungan antara umur kehamilan, umur ibu, penyakit penyerta dan riwayat SC dengan persalinan SC. Kesimpulan : Faktor pendorong terjadinya terminasi persalinan dengan section caesaria (SC) adalah karakteristik umur ibu, umur kehamilan, penyakit penyerta atau penyakit penyulit selama kehamilan dan ibu dengan riwayat SC memiliki peluang besar terhadap terjadinya persalinan dengan operasi sesar.

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## INTRODUCTION

Each woman wants her labor to go smoothly and born a perfect baby (Helmi & Rasyid, 2020). Labor can go normally, but sometimes the process faces obstacles requiring a surgical procedure (Sihombing et al., 2017). It means that the baby and mother are in an emergency so that a surgical procedure is needed to save both of them (Rahmadhani & Laohasiriwong, 2020). One of the emergency procedures is caesarean section (C-Section). Indeed, this procedure results in higher maternal morbidity and labor costs compared to normal delivery (Mangunsong, 2016). The increase in C-section delivery is due to medical and non-medical indications (Mulyawati et al., 2011). The non-medical indications were influenced by age, education, socio-culture, and socio-economic (Novyriana et al., 2016).

Vaginal delivery is considered a difficult labor process and tends to be dangerous for both mother and baby (Mulyawati et al., 2011). Thus, C-sections have higher preferences than normal/vaginal delivery (Mangunsong, 2016). In the past, C-section was a scary thing, but with the advanced development in the field of obstetrics, that view began to shift (Astiani et al., 2020). Now, C-section becomes a common choice of delivery. In China, the cesarean section rate increased dramatically from 3.4 percent in 2011 to 39.3 percent in 2015, and even, 2018 WHO Global Survey on Maternal and Perinatal Health data showed 46.2 percent (Organization, 2016). Although the cost of a C-section is three times higher than the normal delivery's, the number keeps increasing. Even, it reaches 64.1 percent of all births among urban women (WHO, 2016).

Caesarean Section (C-Section) is a surgical procedure to deliver a baby through incisions in the abdomen and uterus as with uterine nerves intact and weighing above 500 grams ("PROFIL SECTIO CAESAREA DI RUMAH SAKIT UMUM DAERAH DR. ZAINOEL ABIDIN BANDA ACEH TAHUN 2011," 2013). Caesarean sections have been part of human culture since ancient times. Some references to C-sections have existed in the ancient cultures of Hinduism, Egypt, Greece, Rome, and some folklore from Europe (Setyaningsih et al., 2013). In Indonesia, the number of C-sections continues to increase both in public and private hospitals (SDKI, 2017). Based on the Indonesian Demographic and Health Survey (IDHS) data, there was an increasing trend of cesarean sections in Indonesia from 1.3-6.8 percent from 1991 to 2017 (BPS et al., 2018). The number of C-sections in urban areas was higher than in rural areas, namely 11 percent compared to 3.9 percent (Kemeterian Kesehatan Republik Indonesia, 2018). The results of Riskesdas in 2013 showed births by C-section reached 9.8 percent of the total 49,603 births during 2010 to 2013 with the highest proportion in DKI Jakarta (19.9%) and the lowest proportion in Southeast Sulawesi (3.3%). In general, the pattern of C-section delivery by characteristics showed the highest proportion index quantile on highest ownership (18.9%), living in urban areas (13.8%), working as an employee (20.9%), and higher education/university graduates (5.1%) (Susenas, 2016).

Some previous studies concerning the importance of analyzing factors affecting the mother's choice for C-section delivery such as by RA Mendoza-Sassi in Brazil in 2010 showed the importance of analyzing risk factors for C-section delivery using special categories provided by the health service provider to anticipate the increasing ratio of C-section without medical indications. Another study conducted in China by XL Feng in 2012 showed the factors affecting the increase in the ratio of C-section delivery during 1988 to 2008 where an increase in the cost of C-section

delivery was aimed to reduce the occurrence of deliveries with this procedure but it did not decline the number of C-section cases. Based on the explanation above, it is necessary to study more about the factors affecting mother's preferences for C-section delivery in Indonesia. Therefore, this analysis aims to identify the determinant factors of C-section delivery.

## METHOD

This documentation analysis study used a retrospective approach of a longitudinal study to describe indications for C-section delivery. It was conducted at PKU Muhammadiyah Gombong Hospital from January to May 2021. The population was all women giving birth in PKU Muhammadiyah Gombong Hospital with a total of 372 women. The study used a total sampling method so that it involved 372 samples. The instrument of study was a question sheet or observation sheet containing questions related to research variables. Univariate analysis was performed to describe the frequency distribution. Bivariate analysis was to see the most dominant factor in the termination of caesarean section.

## RESULT OF STUDY

**Table 1.**  
**Frequency distribution of respondent characteristics (N=372)**

Characteristics	n	%
Gestational age		
Pre-term birth	19	5
Full-term birth	334	90
Post-term birth	19	5
Mother's age		
At risk	145	39
Not at risk	227	61
Comorbidities		
Yes	270	72.5
No	102	27.5
History of C-section		
Yes	130	35
No	242	65

Based on Table 1, concerning the gestational age, 19 respondents (5%) had preterm birth (<37 weeks), while 334 respondents (90%) had full-term birth (37-40 weeks) and 19 respondents (5%) had post-term birth (>40 weeks). Further, the study found that 145 respondents (39%) were at risk (aged <20 years and >35 years) and 227 respondents (61%) were not at risk (25-35 years). Besides, 270 respondents (72.5%) had comorbidities and 102 respondents (27.5%) did not have them. A total of 130 respondents (35%) had a previous SC history and 242 respondents (65%) did not have it.

Based on the results of the study, the gestational age with SC action got a p-value of 0.048 ( $p < 0.05$ ). The age of the mother with C-Section delivery obtained a p-value of 0.014 ( $p < 0.05$ ). The comorbidities with C-section obtained a p-value of 0.004 ( $p < 0.05$ ). Then, the history of the C-section and C-section procedure had a p-value of 0.003 ( $p < 0.05$ ) meaning that there is a relationship between the variable and C-section.

**Table 2.**  
 Bivariate analysis between gestational age and C-section procedure

Variable	C-section delivery		Total	p-value
	Yes	No		
Gestational age				
Pre-term birth	11 (3%)	8 (2%)	19 (5%)	0.048
Full-term birth	245 (66%)	89 (24%)	334 (90%)	
Post-term birth	0 (0%)	19 (5%)	19 (5%)	
Mother's age				
At risk	126 (34%)	19 (5%)	145 (39%)	0.014
Not at risk	130 (35%)	97(26%)	227 (61%)	
Comorbidities				
Yes	241 (65%)	29 (8%)	270 (73%)	0.004
No	53 (14%)	49 (13%)	102( 27%)	
History of C-section				
Yes	97 (26%)	33 (9%)	130 (35%)	0.003
No	167(45%)	72 (20%)	242 (65%)	

## DISCUSSION

The results of the study showed that 19 respondents (5%) had a pre-term birth (<37 weeks) and 334 respondents (90%) had a full-term birth (37-40 weeks) and 19 respondents (5%) had post-term birth (>40 weeks). It is in line with a previous study by Muhammad (2013) entitled "Analysis of Indications for C-Section Delivery at Dr. RSUP. Soeradji Tirtonegoro Klaten" in which 57 respondents (95%) out of 60 respondents had a full-term birth.

Further, this study found that 145 respondents (39%) were at risk, while 227 respondents (61%) were not at risk. It is in accordance with a study by Rupdi (2011) entitled "Description of knowledge about the indications for C-section delivery in pregnant women at the UPTD Puskesmas Cikampek Utara, Kota Baru sub-district, West Java" in which 29 (80.6%) out of 36 respondents were not at risk. Further, a study by Sri (2013) entitled "Age and Occupational Profile of Women having C-Section with History of C-Section" found that 130 (85.5%) out of 152 respondents were not at risk(- & P, 2019).

A total of 270 respondents (72.5%) have comorbidities, while the rest of 102 respondents (27.5%) do not. It is in line with a previous study by Muhammad (2013) entitled "Analysis of Indications for C-Section Delivery at Dr. RSUP. Soeradji Tirtonegoro Klaten" in which 50 (83.3%) out of 60 respondents had comorbidities(Salfariani M & Nasution, 2012).

A total of 130 respondents (35%) had a history of C-sections, while the rest of 242 respondents (65%) do not. Dewi Andriani (2012) conducted a study at the Dompu District Hospital which and found a significant relationship between childbirth and history of C-section with C-Section incidence. In this study, 43 respondents (69%) underwent C-section, while the rest of 19 respondents (31%) do not. It is in line with a study by Isti, et al (2010) entitled "Factors affecting C-Section Delivery" in which 47 (78.3%) out of 60 respondents had C-sections(Ahsan et al., 2017).

A total of 334 respondents (90%) with a full-term birth underwent C-section. It was caused by 2 factors, the mother and baby. If the mother or baby experiences disturbances during pregnancy, it could lead to a C-section as vaginal delivery cannot be performed. Furthermore, 3 respondents with full-term birth did not have C-Section as the mother could give birth normally with the help of induction. Then, 11 (65%) of the 19 respondents with pre-term birth

underwent a C-section procedure due to the mother's comorbidities so that the doctor suggested pre-term birth to maintain the safety of both the mother and baby. The statistical tests using the Chi-Square Test obtained a p-value of 0.027 (p <0.05). It means that there is a relationship between gestational age and C-section(Kakuhese & Rambli, 2019). Of the 145 respondents who are at risk, 21 respondents (87.5%) underwent a C-section procedure. It indicates that women at risky ages (> 35 years) are very prone to C-section procedures and not ready to give birth spontaneously. Furthermore, at the age of >35 years, the organs that help the normal birth process are already weakened and there is a possibility that women at this age have a disease so that it is very risky to have a normal delivery. Then, 22 (57%) of the 48 respondents who were not at risk underwent C-sections due to an abnormality or disorder, either the mother or the baby in order to save both the mother and baby. The results of the statistical test using the Chi-Square Test obtained a p-value of 0.014 (p > 0.05) which means there is a relationship between maternal age and C-section. Based on a study by Lelly, et al (2014), women aged 21 -35 years are two times at risk of C-sections. This study is also in line with Isti, et al (2011) in which maternal age is one of the factors that have a significant relationship with C-section procedure(Ashar & Kusriani, 2020).

270 respondents who had comorbidities, 241 respondents (88%) underwent C-sections. It proves that comorbidities are one of the factors affecting C-sections. Indeed, C-section is performed as the safety of the mother and baby is a priority(Rahmadhani, 2020). Of the 17 respondents who did not have comorbidities, 9 respondents (53%) had C-sections because the respondent had a previous history of CS in which high-risk mothers were not allowed to give birth normally. The results of statistical tests using the Chi-Square Test obtained a p-value of 0.02 (p <0.05) which means that "There is a relationship between a history of disease and C-section at St. Hospital. Elisabeth Semarang". Yaeni (2013) found that there is a significant relationship between comorbidities and C-section in which 80% of respondents who suffer from hypertension have a risk of pre-eclampsia which is an indication for C-section. A study by Lelly Andayasaru, et al (2014) in public and private hospitals found that comorbidities were one of the factors for performing C-sections. Further, mothers with fetal distress had a 12 times greater risk, premature rupture of membranes had 4 times greater risks, and hypertension had

7 times greater risks for C-section delivery (Räsänen et al., 2014).

130 respondents who had a history of C-sections, all of them (100%) underwent C-sections. It proves that mothers with a history of previous C-sections have a high risk of normal delivery. Previous C-section history is very influential on current C-section as previous CS can cause rupture uterus if the mother gives birth normally which can endanger the mother and baby. But in some cases, the mother can still give birth normally even though she previously had a history of C-sections if the mother has been monitored and examined by the doctor. Manuaba (2010) stated that vaginal delivery after C-section history can be performed safely for women who have previously undergone a low transverse uterine incision. Some reports of permitted trial deliveries in women with a history of more than one C-section procedure have good results and minimal complications. The general treatment is to determine the type of section beforehand. The results of statistical tests using the Chi-Square Test obtained a p-value of 0.003 ( $p < 0.05$ ). It means that there is a relationship between the previous history of C-sections and C-sections (Mangunsong, 2016).

## CONCLUSION AND SUGGESTION

Variables of maternal and fetal health status, gestational age of older than 42 weeks (post-term), pregnancy with twins, maternal age > 35 years old, maternal height < 145cm have a greater chance of C-section delivery in Indonesia. Mothers with diseases disturbing delivery, complications of pregnancy, and childbirth have a greater chance of having a C-section procedure.

The health service providers, both public and private hospitals, are expected to increase socialization about the dangers of C-section procedures that are not in accordance with medical indications, especially for adult women, mothers, and prospective mothers to better understand normal vaginal delivery which has a lower risk in mothers with no history of complications of childbirth and pregnancy. Previous studies are expected to identify the impact of C-section delivery that is not in accordance with medical indications in Indonesia as an evidence-based for specific local policies in the era of the National Health Insurance.

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## Conflict Of Interest

Authors declared there is no conflict of interest in this research

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