

AGE AND PARITY IN THE INCIDENCE OF PRIMARY POST PARTUM HEMORRHAGE AT PANEMBAHAN SENOPATI HOSPITAL, BANTUL YOGYAKARTA

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Abstract:

Post partum hemorrhage is the main cause of 150,000 maternal deaths every year in the world and almost 4 out of 5 deaths due to postpartum hemorrhage occur within 4 hours after delivery. The direct causes of maternal death in Indonesia are bleeding 45.20%, eclampsia 12.90%, abortion complications 11.10%, postpartum sepsis 9.60%, prolonged labor 6.50%, anemia 1.60% and indirect causes of death. by 14, 10%. The purpose of this study was to determine the relationship between parity and age with the incidence of primary postpartum hemorrhage at Panembahan Senopati General Hospital. Analytical survey studies or case control surveys use a retrospective time approach. The sampling technique was purposive sampling with a ratio of the number of samples 1: 1, namely the case sample was 70 and the control sample was 70. The analysis technique was Chi Square. The results of Chi Square analysis showed that age and parity had a significant relationship with the incidence of primary postpartum hemorrhage, age (OR = 14.22 and p-value 0.000) while parity (OR 3.010 and p-value 9.643). It means that mothers with maternal age at risk (<20 and > 35 years) have a risk of 14.22 greater than the age not at risk (20-35 years). Mothers with parity at risk (1 and >3) had a 3.010 greater risk of primary postpartum hemorrhage than mothers with parity at no risk (2 and 3). This study concluded that there is a relationship between age and parity with the incidence of primary postpartum hemorrhage.

Keywords: Parity; Primary Postpartum Hemorrhage; Age

Introduction

Mortality and morbidity in pregnant women and childbirth is a substantial problem for developing countries. According to statistical data released by the World Health Organization (WHO) as the United Nations agency that handles health problems, the number of maternal deaths in pregnancy and childbirth in the world reaches 515,000 people every year. The highest incidence of maternal death was during childbirth at 50.09%, then followed by postpartum at 30.58%, and during pregnancy at 19.33% (Hidayat and Sujatini, 2017).¹

According to the Indonesian Demographic and Health Survey (IDHS) data, the Maternal Mortality Rate (MMR) in Indonesia increased from 228 per 100,000 live births in 2002-2007 to 359 per 100,000 live births in 2007-2012.² MMR decreased in 2012-2015 to 305 per 100,000 live births and the number of maternal deaths in Indonesia in 2019 was 4,221 cases (Kemenkes RI, 2019).³

One of the regencies in the DIY region that still has a fairly high MMR is Bantul Regency. Based on data obtained from the Bantul District Health Office, in 2018 MMR reached 14 cases, in 2019 MMR decreased to 13 cases, and in 2020 AKI cases increased by 20 cases.⁴

Post partum hemorrhage is the main cause of 150,000 maternal deaths every year in the world and almost 4 out of 5 deaths due to postpartum hemorrhage occur within 4 hours after delivery (Prawiharjo, 2020).⁵ Post partum hemorrhage is the main cause of 150,000 maternal deaths every year in the world and almost 4 out of 5 deaths due to postpartum hemorrhage occur within 4 hours after delivery (Prawiharjo, 2020).⁶ The direct causes of maternal death in Indonesia are hemorrhage 45.20%, eclampsia 12.90%, abortion complications 11.10%, postpartum sepsis 9.60%, prolonged labor 6.50%, anemia 1.60% and indirect causes of death by 14.10%.

Predisposing factors that contribute to the occurrence of primary postpartum hemorrhage include: age and parity. The age factor, namely the age of more than 35 years and the age of less than 20 years are at risk of complications in pregnancy and childbirth, which will cause hemorrhage. Another predisposing factor that supports is parity, because a uterus that has given birth to many children tends to work inefficiently in all stages of labor (Cunningham, 2018).⁷

Based on a preliminary study conducted by researchers, the total number of deliveries at Panembahan Senopati Hospital, Bantul Yogyakarta was 2681 with the incidence of postpartum hemorrhage in 70 cases. Factors that cause postpartum hemorrhage at Panembahan Senopati Hospital, Bantul Yogyakarta are retained placenta retention 28 cases (31,81%), uterine atony 30 cases (34,09%), retained placenta 18 cases (20,45 %), and 12 cases of birth canal laceration (13,63%). This study aims to determine the relationship between parity and age with the incidence of primary postpartum hemorrhage in Panembahan Senopati Hospital, Bantul Yogyakarta.

Research Method

This research is an analytical survey research or case control survey which concerns how risk factors are studied using a retrospective approach. The population in this study was data on all mothers giving birth at the Panembahan Senopati Hospital, Bantul, Yogyakarta, who experienced bleeding, amounting to 70 cases out of 2681 deliveries. The samples for the case group were mothers with primary postpartum hemorrhage, totaling 70 maternal data. and the control sample is mothers who do not have hemorrhage post partum totaling 70 maternal data.

Results

Respondent's characteristics

The distribution of respondent's characteristics are in Table 1.

Table 1. The distribution of respondent's characteristics

No	Characteristics of Respondents	Case (N=70)		Control (N=70)		N	%
		F	%	F	%		
1	Education						
	Elementary School	4	5.7	3	4.3	7	5
	Junior High School	2	2.9	6	8.6	8	5.7
	Senior High School	45	64.3	48	68.8	93	66.4
	College	19	27.1	13	18.6	32	22.8
2	Work						
	Civil Servant	8	57.1	7	10	15	10.7
	Private	16	22.9	19	27.1	35	25
	Labor/Farmers	6	8.6	9	12.9	15	10.7
	IRT	40	57.1	35	50	75	53.5
3	Age						
	Risky Age (< 20 And > 35 Yo)	64	91.4	30	42.9	94	67.1
	Non Risky Age (20 - 35 Yo)	6	8.6	40	57.1	46	32.8
4	Parity						
	Parity At Risk (1 And >3)	51	72.9	33	47.1	84	60
	No-Risk Parity (2 And 3)	19	27.1	37	51=2.9	56	40

Table 1 illustrates that most of the respondents in the research case group based on the education level category were with high school education level, 45 respondents (64.3%), occupation was as housewives as much as 40 (57.1%). In addition, the characteristics of the mother are also seen from the age and most of the mothers with the age at risk (<20 and >35 years) are 64 (91.4%), while the respondents with the risk parity category are 51 (72.9%).

In the control group, most of the respondents based on the education category, for High Schooler as many as 48

(68.6%), occupations were as housewives as many as 35 (50%). In addition, the characteristics of the mother are also seen from the age and most of the mothers with non-risky age as many as 40 (57.1%) and while parity is mothers with non risky parity as much as 37 (52.9%).

Age and Parity with the Incidence of Primary Postpartum Hemorrhage

The cross distribution of age and parity with the incidence of primary postpartum hemorrhage can be seen in table 2.

Table 2. The cross distribution of age and parity with the incidence of primary postpartum hemorrhage

No	Risk Factor	Primary postpartum haemorrhage		There is no primary post partum haemorrhage		χ^2 (p)	OR
		F(n=70)	%	F(n=70)	%		
1	Age						
	Risky Age	64	45.7	30	21.4		
	Non-Risky Age	6	4.3	40	28.6	37,428 (0.000)	14.22
2	Parity _						
	Risky parity	51	36.4	33	23.6	9,643 (0.002)	3.010
	Non-Risky Parity	19	13.6	37	26.4		

Table 2 shows the results of the test of the relationship between age and the incidence of primary postpartum hemorrhage. Based on the results of the calculation of the p value obtained $0.000 < 0.05$. It can be concluded that there is a significant relationship between age and the incidence of primary postpartum hemorrhage. Table 2 also shows the results of the test of the relationship between parity and the incidence of primary postpartum hemorrhage. Based on the results of the calculation of the p value obtained $0.002 < 0.05$. It can be concluded that there is a significant relationship with the incidence of primary postpartum hemorrhage.

Strength of the Relationship between Age and Parity with the Incidence of Primary Post Partum Hemorrhage

The strength of the relationship between age and parity with the incidence of primary post partum hemorrhage can be seen in Table 3.

Table 3 Strength of the relationship between Age and Parity with the Incidence of Primary Post Partum Bleeding

Variable	Exp (B)	p-value
Age	14,070	0.000
parity	2,948	0.009

Table 3 Results of Logistic Regression Analysis of the Relationship between Age and Parity with the incidence of Primary Post Partum Bleeding at Panembahan Senopati Hospital

Bantul. Based on table 3, age and parity variables have p value < 0.05 so it can be concluded that age and parity have a significant relationship with the incidence of primary postpartum hemorrhage. The age variable has a p value of 0.000 which can be concluded that age has a significant relationship with the incidence of primary postpartum hemorrhage. The parity variable has the lowest Exp (B) value, which is 2,948, while the highest Exp (B) value is in the age variable, which is 14,070. This can be interpreted that the mother with the risk factor of age the possibility of primary postpartum hemorrhage is 14,070 times greater than the mother with the risk factor of parity.

Discussion

Relationship of Age with Primary Post Partum Bleeding Incidence

Based on table 2, the relationship between age and the incidence of primary postpartum haemorrhage in the mother was obtained from the chi square test results obtained by the calculation of $X^2 = 37,428$. The value of X^2 table at 5% error character = 3,841. This shows that $X^2 \text{ count} > X^2 \text{ table}$ ($37.428 > 3.841$). It can be concluded that there is a relationship between age and the incidence of primary postpartum hemorrhage. This is influenced by several factors including age is not a direct factor that causes postpartum hemorrhage, the majority

of mothers in this study are at risk ages (<20 and >35 yo).

According to Elisabeth (2014), the development of a person's knowledge and skills goes with the age of education.⁸ The more old enough, the level of maturity and strength of a person will be more mature in thinking and working (Notoatmodjo, 2014).⁹

Based on table 1, the characteristics of respondents based on education level are mostly mothers with high school education level. High school education level is a continuation of basic education in the form of upper secondary education. The level of education plays a role in determining whether or not someone absorbs and understands the knowledge they gain, in general, the higher a person's education, the better his knowledge and behavior. (Herawati, 2011).¹⁰

Age is related to the unpreparedness of the mother in reproduction, women under 20 years of age are still in the growth and development stage so that the condition of being pregnant will make her have to share with the fetus being conceived to meet her nutritional needs. On the other hand, mothers who are more than 35 years old are starting to show the effects of the aging process, such as when diseases such as hypertension and diabetes mellitus appear which can inhibit the entry of fetal food through the placenta (Proverawati, 2010).¹¹

According to (Cunningham, 2018) at the age of <20 years is a high risk of pregnancy that threatens the safety of the mother and baby. This is because at a young age the reproductive organs and physiological functions are not optimal and psychologically, emotionally and psychologically not yet mature enough, so that it will affect the acceptance of pregnancy which will ultimately have an impact on the process of pregnancy, childbirth and the puerperium.¹²

According to Fadilah's research (2012) on the relationship between maternal age and the incidence of primary postpartum hemorrhage at the Jagir Health Center Surabaya, based on the results of the study,

the older or younger the mother's age, the higher the incidence of primary postpartum hemorrhage. The study stated that the 95% confidence level of maternal age under 20 years and above 35 years was significant as a risk factor affecting the incidence of postpartum hemorrhage.¹³

Another study that is also in accordance with this study was carried out by Buntoro (2018), showing the results of the correlation analysis of the relationship between maternal age and postpartum hemorrhage. It was found that mothers aged between 20-35 years had a close relationship with the incidence of postpartum hemorrhage due to the rest of the placenta with a value of $p = 0.032$ ($p < 0.05$) where the correlation is 0.032 which indicates a weak correlation.¹⁴

A healthy reproductive age is between 20-25 years, because at the age of less than 20 years, the reproductive organs have not yet fully grown, so the nutrients needed for the growth of the reproductive organs are divided for the needs of the fetus during pregnancy. On the other hand, aged over 35 years, the mother's health condition begins to decline and tends to suffer from complications such as hypertension, diabetes mellitus and fatigue, it is risky if the mother is pregnant (Friyandini et al, 2015).¹⁵

This is different from Suryani's research entitled Relationship of Maternal and Antenatal Care with Postpartum Bleeding at Prindadi Hospital with the results of the chi square statistical test with a value of $X^2 = 1.212$ and a p value = 0.271 which shows a non-significant relationship between age and the incidence of postpartum hemorrhage.¹⁶

At the age of under 20 years, a woman's reproductive function has not fully developed, while at the age of 35 years it has decreased. At the age of <20 years, body growth is not optimal. Similarly, the growth of the reproductive organs, namely the uterus undergoes uterine hypoplasia and narrowing of the pelvis. Fragile perineum is usually found in grandemultipara and age > 35 years which

can trigger postpartum hemorrhage (Oxorn, 2010).¹⁷

In mothers of healthy reproductive age (20-35 years), primary postpartum hemorrhage can be caused by other predisposing factors. For example, the mother suffers from diabetes mellitus so that the fetus she contains tends to be large according to pregnancy, macrosomia so that the same stretch occurs can also be caused by hydramnios.¹⁸

The Relationship of Parity with the Incidence of Primary Post Partum Hemorrhage

Based on table 2, the relationship between parity and the incidence of primary postpartum hemorrhage in mothers showed that the chi square test results obtained the results of $X^2 = 9.643$. The price of the table X^2 at the error character $5\% = 3,841$. This shows that $X^2 \text{ count} > \text{table}$ ($9643 > 3.841$). It can be concluded that there is a significant relationship between parity and the incidence of primary postpartum hemorrhage. Although, based on this study, parity is not the main risk factor, its presence can distract health workers so that it can be reasonable if the incidence of primary postpartum hemorrhage occurs in both parity groups (risk and no risk). In the non-risk parity group, health workers may respond more calmly but less alertly to delivery. When there are other risk factors that can trigger primary postpartum hemorrhage and primary postpartum hemorrhage occurs, even though permanent procedures such as active management of the third stage have been carried out, the new officer immediately performs the management of primary postpartum hemorrhage. However, the most important thing is, even if a disease or case occurs, it can be overcome, and the level of pain is minimized and the client concerned avoids death.

Parity is one of the factors that influence the incidence of postpartum hemorrhage. Parity shows the number of previous pregnancies that have reached the limit of

viability and have been born regardless of the number of children. The birth of triplets is only counted as one parity (Manuaba, 2018).¹⁹ The results of univariate analysis on mothers who experienced bleeding showed parity at risk (1 and >3) was 84 (60%) and parity at risk (2-3) was 56 (40%). This shows that most of those who experience bleeding are at risk parity, namely parity 1 and parity >3 .

The lowest parity (parity 1) can cause the mother's unpreparedness in facing childbirth so that pregnant women are unable to deal with complications that occur during pregnancy, delivery and postpartum. Meanwhile, the more often women experience pregnancy and childbirth (parity more than 3), the weaker the uterus will be, so the risk of pregnancy complications is greater (Manuaba, 2018).²⁰ High parity is one of the risk factors for postpartum hemorrhage (Manuaba, 2012).²¹ This is because women with high parity who experience labor tend to have uterine atony.

The results of this study are in line with those found by Buntoro (2018), who found that mothers who have parity 1 tend to have a relationship with postpartum hemorrhage due to retained placenta. This result is also in accordance with Aisyah's research (2017) showing a parity relationship with postpartum hemorrhage with $p \text{ value} = 0.000$ and $OR = 4.264$.²²

This is different from Sari's (2011) research. The relationship between parity and the incidence of primary postpartum haemorrhage in women giving birth at the Mergangsan Public Health Center, Yogyakarta. The results showed a $p\text{-value}$ of -0.288 with an error rate of 5% with a $p > 0.05$, which means that there is no relationship between parity and primary postpartum hemorrhage at Mergangsan Public Health Center Yogyakarta.²³

Physiologically, the uterus in nulliparas still does not work efficiently. Contractions tend to be discoordinated or hypotonic. The average length of the first stage of labor in nulliparas was significantly slower than in

multiparas (usually due to cervical dilatation). The duration of labor is expected to be slower and if it lasts too long, it is necessary to get augmentation so that it becomes a labor with action. What is interesting is that grandemultiparas experience a longer latent phase of labor than nulliparous or multiparous mothers. However, cervical dilatation then occurs more rapidly. After a six-centimeter dilatation, the partogram shows a continuous spike in labor progress in multiparity and grandemultiparity.²⁴

In mothers with relatively safe parity (P2-3), primary postpartum hemorrhage can be caused by other predisposing factors such as the length of the third stage > 30 minutes and retained placenta. Anemia due to malnutrition and non-adherence to taking blood supplement tablets can also open opportunities in causing primary postpartum hemorrhage.²⁵

The risk of primary postpartum hemorrhage is related to age and parity

Judging from the Odds Ratio (OR) value for age, namely 14.22 and parity OR = 3.010, it can be concluded that age is a factor in the occurrence of primary postpartum hemorrhage. The risk parity (1 and >3) had a 3.010 greater risk of primary postpartum hemorrhage than the non-risk parity (2 and 3). Age is a risk factor for primary postpartum hemorrhage. Similarly, mothers with risky age (<20 years and >35 years) have a 14.22 higher probability of primary postpartum hemorrhage than mothers with no risk age (20-25 years).

There are several factors that influence the occurrence of primary postpartum hemorrhage, one of which is maternal factors, namely age and parity. Mothers aged < 20 years are still in the stage of growth and development so that being pregnant will make them have to share with the fetus that is being conceived to meet their nutritional needs. On the other hand, mothers who are more than 35 years old begin to show the effects of the aging process, such as frequent

occurrence of diseases such as hypertension and diabetes mellitus which can inhibit the entry of fetal food through the placenta.²⁶

The healthy reproductive age for a woman to give birth is between the ages of 20-35 years. This situation is due to the fact that at the age of less than 20 years, women in general are physically immature to receive the products of conception and from a psychological point of view, women who are too young are not mature enough to become a mother (Prawirihardjo, 2020).²⁷ Women who are 35 years of age or older are prone to high blood pressure, preeclampsia and eclampsia, antepartum bleeding (placenta previa, placental abruption), diabetes or fibroids in the uterus and are more susceptible to labor disorders so that preterm labor is easy to occur (Prawirohardjo, 2020).²⁸

In addition to maternal age, parity also greatly affects the incidence of primary postpartum hemorrhage. Parity 1 and > 3 are risk factors for primary postpartum hemorrhage because at low parity (parity 1) it causes the mother's unpreparedness in dealing with childbirth so that pregnant women are unable to handle complications that occur during pregnancy, childbirth and the puerperium. At high parity (more than 3), reproductive function decreases, the uterine muscles are too stretched and cannot contract properly so that the possibility of postpartum bleeding becomes greater (Manuaba, 2012).²⁹

Relationship between Age and Parity with the Incidence of Primary Post Partum Hemorrhage

Based on table 3, the p value of age (0.000 <0.05), it can be concluded that there is a relationship between age and the incidence of primary postpartum hemorrhage. The results of p value parity (0.0009 <0.005), it can be concluded that there is a relationship between parity and the incidence of primary postpartum hemorrhage.

According to Fadilah's research (2012) on the relationship between maternal age and

the incidence of primary postpartum hemorrhage at the Jagir-Surabaya Health Center, based on the results of the study, the older or younger the mother's age, the higher the incidence of primary postpartum hemorrhage. Najah's research stated that the 95% confidence level of maternal age under 20 years and above 35 years was significant as a risk factor that influenced the incidence of postpartum hemorrhage.³⁰

This is different from Suryani's research entitled Relationship of Maternal and Childbirth with Postpartum Hemorrhage at Prindadi Hospital with the results of the chi-square statistical test with a value of $\chi^2 = 1.212$ and a p value of 0.271 which shows a non-significant relationship between age and the incidence of postpartum hemorrhage.³¹

According to (Cunningham, 2018) at the age of <20 years is a high risk of pregnancy that threatens the safety of the mother and baby. on the acceptance of her pregnancy which will ultimately have an impact on the process of pregnancy, childbirth and the postpartum.²⁸⁹Based on table 4, page 61, the multivariate results of Exp (B) aged 14.07 while the value of Exp (B) parity was 2,948, it can be concluded that age has a greater influence on the incidence of primary postpartum hemorrhage. According to (Aboyaji) the relation with the incidence of primary postpartum hemorrhage with age and parity, especially those caused by uterine atony, is the changes that occur in the connective tissue and uterine muscles that weaken uterine contractions and retractions after birth. Other contributing factors that may cause postpartum hemorrhage include excessive dilation of the uterus and prolonged labor.

Conclusions

Based on the results of research and discussion, it can be concluded that there is a relationship between age and parity with the incidence of primary postpartum hemorrhage.

Researchers hope that future researchers can continue and improve research by eliminating weaknesses and limitations in research such as controlling for confounding factors or with variables that have a major contribution in influencing postpartum hemorrhage such as anemia, diabetes mellitus and prolonged labor.

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