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THE CORRELATION BETWEEN PARITY AND BABY WEIGHT TO THE INCIDENCE OF POSTPARTUM HEMORRHAGE

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ABSTRACT

Background: The most dominating factors of maternal deaths is postpartum hemorrhage, which predominantly caused by parity 4.20%, baby weight 3.55%, retention 1.94%, uterine atony 1.29%, and age of mother 1.94%.
Aims: The purpose of this study was to determine the correlation between parity and baby weight on the incidence of postpartum hemorrhage at Gambiran hospital Kediri in 2015.
Methods: This is a quantitative research using Rank Spearman and multiple logistic regression. statistics test. The population of this study is all women who giving birth at Gambiran hospital Kediri from January-March 2015, with total 309 respondents. By using simple random sampling technique, 175 respondents was selected for this study.
Results: Results showed most of respondents (70.9%) gave birth normally and more than a half (51.4%) have experienced with postpartum hemorrhage. Its highly significant that lower baby weight and parity have correlated with the incidence of postpartum hemorrhage,while the most influence of postpartum hemorrhage was lower baby weight (4 times more risk) and 3.3 more risk for parity.
Conclusion: The parity and lower baby weight have positive correlation and influences with postpartum hemorrhage. Based on the results of the study the health workers expected to improve the quality of service on antenatal to decrease the number of postpartum hemorrhage.

Keywords: Parity, baby weight, postpartum hemorrhage.

INTRODUCTION

The five biggest causes of maternal deaths are hemorrhage, hypertension in pregnancy, infections, prolonged labor and abortion[1-3]. Maternal deaths in Indonesia remain dominated by the three main causes of death that is hemorrhage, hypertension in pregnancy, and infections [4]. One of the main causes of maternal death is good in the world as well as developing countries are postpartum hemorrhage [5]. Postpartum hemorrhage is a hemorrhage that exceeds 500 ml after the birth of the baby and placenta [6, 7]. Postpartum bleeding is defined into two primary postpartum hemorrhage (early postpartum hemorrhage) is bleeding that occurs within the first 24 hours of birth and postpartum hemorrhage secondary (late postpartum bleeding) is hemorrhage after 24 hours of labor [8].
According to the WHO (World Health Organization), in 2010, a total of 536.000 women died of childbirth. As much as 99% of maternal deaths due to the problem of labor or birth occur in developing countries. The ratio of maternal mortality in developing countries is the highest ratio of 450 maternal mortality per 100 thousands of baby's birth to life when compared with the ratio of maternal mortality in 9 developed countries and 51 the prosperous of nations [9]. The higher maternal mortality in developing countries reflects the

slowness of the process of decrease of maternal mortality rate [10]. The slowness of the process of decrease of maternal mortality rate because it still high levels of poverty so that the effect on health [11]. Therefore, developing countries with high mortality rates which are still yet to show progress in the last 15 years [9]. Based on Demographic and Health Survey Indonesia in 2012, maternal mortality (associated with pregnancy, childbirth, and postpartum) of 359 per 100,000 live births [12]. This figure is still quite high especially in comparison with neighboring countries [4].

The maternal mortality rate in East Java reaches 567 per 100,000 live births [13], while the maternal mortality rate in city of Kediri from 2012 to 2014 has increased. In 2012 and 2013 there are 2 cases of maternal mortality and in 2014 there is an increase in maternal mortality to 3 cases . The most common cause of maternal deaths in the city of 2012 until 2014 is postpartum haemorrhage and preeclampsia [14]. Gambiran hospital is a regional hospital that became the center of referral in the city of Kediri. As a preliminary survey conducted in Gambiran Hospital Kediri shows the incidence of postpartum haemorrhage in 2014 is still high reached to 39.73% [15]. The dominant factor of occurrence of postpartum hemorrhage parity 4.20%, baby weight 3.55%, retention 1.94%, uterine atony 1.29% and age of mother 1.94% [15].

Factors that are considered to cause the occurrence of postpartum hemorrhage are: uterine atony, need way was born, the placenta is retention, the rest of the placenta, blood clotting abnormalities [16]. While other factors causing the occurrence of postpartum hemorrhage are: age, parity, anemia, labor history, baby weight and multiple pregnancy. The impact of postpartum hemorrhage is: anemia, Sheehan syndrome, shock hemorrhagic to death. Dominant factor in the occurrence of postpartum hemorrhage includes placenta retention, induction of labour, age of mother is to old/too young, anemia and maternal parity that many [17, 18].

Handling of postpartum hemorrhage is fluid replacement. Delay or lack of glaring discrepancy in fixing hypovolemia the beginning of failure overcoming postpartum bleeding deaths [16]. Although in the case of bleeding both blood components, namely plasma and blood cells are lost, but the first handling to keep the body and maintain homeostasis perfusion fluid is the grant network [19]. At low parity (parity 1), leading to unrelatedness of the mother in the face of labor so that pregnant women are unable to handle complications that occur during pregnancy and childbirth. With high parity (more than 3), the reproductive function decreases, the uterine muscles are too tight and less able to contract well so the possibility of postpartum bleeding becomes greater. Macrosomia (≥4000 grams) can cause postpartum hemorrhage because the uterus stretches excessively and results in weak contractions resulting in postpartum hemorrhage [16]. Given the breadth of factors that affect the causes of postpartum hemorrhage and limited abilities, time, energy, competence and number of cases, therefore the study aims to find out the relationship between parity and baby weight with postpartum hemorrhage at Gambiran Hospital Kediri.

METHODS

It was a correlational analytic study conducted at Gambiran Hospital Kediri in March of 2015. The population is 309 women giving birth in Gambiran hospital Kediri in January-March. The samples was 175 postpartum mothers in Room Dahlia 1 who were selected by simple random sampling and chosen by considering these following inclusion criteria: had postpartum hemorrhage, age 20-35 years old, and attained basic education until higher education. Mothers who did not experience a postpartum hemorrhage were excluded from the analysis. To determine the relationship between parity and baby weight with the incidence of postpartum hemorrhage, Spearman's Statistic and multiple logistic regression test was employed.

RESULTS

Respondents' characteristics

Table 1 shows most of the respondents age are 21-35 years, attained secondary education, housewives and were not anemia. Almost half 45.1% was multiparity with normal delivery, 51.4%.and had postpartum hemorrhage.

Table 1 Characteristics of respondents in Gambiran Hospital Kediri

Variables	Frequency	%
Age		
<20 Years	18	10.3
20-35 Years	114	65.1
>35 Years	43	24.6
Total	**175**	**100**
Education		
Primary education	40	22.9
Secondary education	118	67.4
Higher Education	17	9.7
Total	**175**	**100**
Employment		
Housewives	148	84.6
Private sectors	22	12.6
Civil servant	5	2.9
Total	**175**	**100**
Comorbidities		
Anemia	67	38.3
Not anemia	108	61.7
Total	**175**	**100**
Parity		
Primipara	50	28.6
Multipara	79	45.1
Grandemulti	46	26.3
Total	**175**	**100**
Birth weight		
Macrosomia	24	13.7
Weight of Normal Baby Birth	124	70.9
Low birth weight	27	15.4
Total	**175**	**100**
Bleeding postpartum		
Yes	90	51.4
Not	85	48.6
Total	**175**	**100**

Table 2 shows that there is a relationship between parity with postpartum hemorrhage incidence at Gambiran Hospital Kediri in 2015. The relationship between two variables results in correlation value of 0.401 located between the numbers 0.400-0.599 with the category of moderate and the direction of positive relationship which means the higher the parity of the mother, the higher the incidence of postpartum hemorrhage. The level of relationship between two variabels, with a correlation value of 0.329 located

between 0.200-0.399 shows the derection of a positive relationship which means the higher the birth weight the hingher the incidence of postpasrtum hemorrhage.

Table 2. Relationship between the incidenceof hemorrhage postpartum to mothers' parity and baby weight in Gambiran Hospital Kediri

Variables	Postpartum Hemorrhage		Normal bleeding		Total		Spearman's Statistic test
	∑	%	∑	%	∑	%	
Parity							
Grandemulti	39	22.3	11	6.3	50	28.6	ρ= 0.000
Multipara	40	22.9	39	22.3	79	45.1	r= 0.401
Primipara	11	6.3	35	20.0	46	26.3	
Baby weight							
Macrosomia	20	11,4	4	2,3	24	13,7	ρ= 0.000
Weight of Normal Baby Birth	64	36,6	60	34,3	124	70,9	r = 0.329
Low birth weight	6	3,4	21	12,0	27	15,4	

Table 3.Multiple logistic regression analysis

No	Independent variables	B	Exp(B)	Intepretation
1	Parity	1.199	3.315	Cause
2	Baby Weight	1.394	4.032	Cause
3	Constant	-5.259	0.005	Cause

In the *OR* table the greater birth weight was found in the incidence of postpartum hemorrhage (4.032) and from the table of the digital model: g (x) = -5.259 + 1.394 baby weight + 1.199 Parity.

DISCUSSION

The incidence of postpartum hemorrhage mother in at Hospital Gambiran Kediri was reported among 51.4% of the respondents. Postpartum hemorrhage were experienced by young mothers age <20 years old and > 35 years where the mother's uterus is not functioning optimally as when reproductive age mother is at the appropriate age. The mother lacks information about the signs of pregnancy, childbirth, and puerperal so prone to complications of bleeding were identified [5]. Mothers in the primipara (woman who has 1 child) category as well as grandemulti (a woman who has had 5 or more children) have a major influence on the delivery process with postpartum hemorrhage [2]. Non adherence in labor in primiparous mothers is due to the experience and information that cause the mother to fail to cope with and overcome it at the end of pregnancy, labor or during the puerperium [16]. In grandemulti's mother, the reproductive function decreases. The uterine muscles are already too tight and less able to contract well so that the possibility of postpartum hemorrhage becomes greater [20].

Most of the baby was born to the mother at Gambiran Hospital Kediri was categorized as normal. Nevertheless, we also found low birth weight and baby weight born in maternal mother with macrosomia. Macrosomia (≥4000 grams) requires greater space in the uterus, causing the uterus to stretch excessively and lead to weak contractions resulting in postpartum hemorrhage [20].

Based on the test statistical analysis in Table 2, Spearman's rho correlation was 0.401; p=0.000. There is a relationship between parity with the incidence of postpartum hemorrhage. It reports that the greater parity, the higher the incidence of postpartum hemorrhage. Multiparity incidence of postpartum hemorrhage even greater because the uterus that has given rise to many children tends to work inefficiently in every stage of labor. The uterus has undergone a change in elasticity. The more elastic and grows in size it will be increasingly weak contractions of the uterus so that the uterine contractions will be weak and bleeding occurs [5]. Parity relationship with postpartum hemorrhage evidenced in multiparas that the more often the mother gave birth, the mother diminishing uterine muscle function. In multiparous mothers, muscle function decreased uterine contractions, and as the consequences it may be reduced or even unable to contract properly, causing bleeding that arises immediately after birth or a few hours after birth.

The results of this study also showed a positive relationship between the birth weight and postpartum hemorrhage. The higher the birth weight, the higher the incidence of postpartum hemorrhage. Macrosomia birth (≥4000 grams) may result in postpartum hemorrhage due to uterine overstretch and resulting in ineffective contraction that can occur postpartum hemorrhage [16]. Uterine overstretch caused babies to macrosomia who require more space in the uterus, so that cannot be maximal contractions of the uterus or the uterus may not contract properly. If the uterus is unable to contract, it will cause the blood out than normal, or so called bleeding [20].

Mother multiparous lack of information about the dangers of pregnancy, childbirth and postpartum causing them prone to complications one of them is bleeding. More Old maternal age and lack of information cause them less vigilant during pregnancy and lack of preparation in the face of complications during labor and childbirth. Macrosomia (≥4000 grams) is also one of the cuses of bleeding. Due to the uterus stretch and could cause uterine contractions weaken, and at birth the baby macrosomia passing through the birth canal can cause tearing of the birth canal wider blood vessels around the birth canal will open, causing bleeding that can occur during delivery or after childbirth [22].

In this study, there are still limitations in the selection of research subjects where the study was only conducted at one hospital in the city of Kediri. Besides the weaknesses in data collection using medical record documentation and registration of postpartum mother in a hospital that is data only collected by restropective during the last 1 year.

CONCLUSIONS

Parity and weight babies considerably contribute to maternal postpartum hemorrhage. The greater birth weight was found in the incidence of postpartum hemorrhage. Mothers in the primipara (woman who has 1 child) category as well as grandemulti (a woman who has had 5 or more children) have a major influence on the delivery process with postpartum hemorrhage.

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