Original Research

IJNHS

The Profile of Women Suffering Postpartum Hemorrhage: Recent Update in Salatiga Region General Hospital, Central Java, Indonesia

Kristiani Desimina Tauho[1], Rifatolistia Tampubolon[2], Dori Maria Mone[3]

Affiliation: 1,2,3Faculty of Medicine and Health Sciences, Universitas Kristen Satya Wacana

Article info

Article history:
Received: July 19th, 2023
Revised: July 26th, 2023
Accepted: August 10th, 2023

Correspondent author:
Name: Kristiani Desimina Tauho
Address: Jl. Kartini No.11A, Kota Salatiga, Jawa Tengah, 50711
E-mail: enni.tauho@uksw.edu

International Journal of Nursing and Health Services (IJNHS)
Volume 6, Issue 4, August 20th, 2023
DOI: 10.35654/ijnhs.v6i4.739
E-ISSN: 2654-6310

Abstract

Background: Postpartum hemorrhage is a significant problem related to maternal death. The cause of the second highest maternal mortality rate in Central Java is bleeding, which is as much as 21.23%. **Objective:** This study aimed to identify the current profile of mothers who experienced postpartum hemorrhage at the Salatiga City Regional General Hospital. **Method**: This study uses a quantitative methodology with a retrospective approach. The data collection technique used document tracing in the form of medical records with a checklist sheet instrument. This study concluded 89 medical records of women diagnosed with postpartum hemorrhage from 2017 to 2021. **Result:** The characteristics of women who experienced postpartum hemorrhage were mostly productive age, secondary education, mothers who worked as housewives, Javanese ethnicity, married, parity 2-4, single pregnancy, 2 to 4 years inter-pregnancy interval, and retained placenta. Almost all of these features are not risk factors for postpartum hemorrhage. **Conclusion**: Based on the study's results, postpartum hemorrhage can happen in any woman who are having or not having risk factors of postpartum hemorrhage. **Recommendation**: Precautions must be taken for all birthing mothers regardless of their risk factor status.

Keywords: bleeding, causes, childbirth, hemorrhage, maternal

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INTRODUCTION

The maternal mortality rate (MMR) indicates a country's public health degree. MMR has become a global issue, a significant problem in all countries, including Asia, which occupies the highest position, with Indonesia ranked third (1). In 2016, MMR in Indonesia was still very high, reaching 359 per 100,000 live births. This figure is rated first in Southeast Asia (2). According to data from the Indonesian Health Ministry in 2021, the number of cases of maternal death in Central Java Province was 976 cases, increasing compared to the number of cases of maternal death in 2020, which were 530 cases (3).

Postpartum hemorrhage is a significant problem because it is related to maternal health which can cause death. Even though the maternal mortality rate has decreased yearly with the presence of pregnancy checks and care, childbirth in hospitals, and the availability of blood transfusion facilities, bleeding is still a significant factor causing maternal mortality in Indonesia, excluding COVID-19. Complications in childbirth are reported to be the highest cause of maternal death in Indonesia, excluding Covid-19 (3,4), even in the world (5). In 2021, there were 1,320 cases of bleeding, followed by 1,077 cases of hypertension during pregnancy (3).

Postpartum bleeding is defined as blood loss of 500 ml or more after vaginal delivery or 1000 ml or more after cesarean section. Factors that are at risk of causing postpartum hemorrhage include age (< 20 or > 35 years), parity (1 and > 3), pregnant women with anemia (Hb < 11), prolonged labor have a greater risk of experiencing postpartum hemorrhage compared to un-prolonged labor (6). Delivery intervals are related to postpartum hemorrhage, where mothers who have fast delivery intervals (<2 years) and long delivery intervals (> 5 years) often have the opportunity to experience postpartum hemorrhage compared to mothers who have delivery intervals of 2-5 years (7). Other factors can cause postpartum hemorrhage, namely fetal macrosomia (over 4000 g); pregnancy-induced hypertension; pregnancy generated by assisted reproductive technology; severe vaginal or perineal lacerations; and weight gain over 15 kg during pregnancy (8).

Other research shows that ethnicity is a risk factor for postpartum hemorrhage in spontaneous delivery (9) and cesarean delivery (10). Asian women are more likely to be at risk for intravascular dissemination of coagulation compared to women of Hispanic ethnicity, both black and white (11). The same study's results were reported in Japan that the prevalence of postpartum hemorrhage was higher in Asian (73.9%) women compared to Hawaiian and Pacific Islander races due to uterine atony (12).

No study describes the complete profile of mothers in terms of sociodemographics and the health status of mothers who experience postpartum hemorrhage, especially in Salatiga City. Therefore, this study aims to identify the profile of mothers who have experienced postpartum hemorrhage in the last five years on the island of Java.

METHOD

Design

This study uses a quantitative method using secondary data with a retrospective approach.

Sampling technique

The total population of this study was all the medical records of mothers who experienced postpartum hemorrhage. The sampling technique in this study was total sampling so that all data on mothers who experienced postpartum hemorrhage were used as samples and based on the research results obtained regarding postpartum hemorrhage at Salatiga City Hospital from 2017 to 2022. We found 101 medical records of delivery women with postpartum hemorrhage, but only 89 became the study sample because of the data completeness.

Data collection technique

The data collection technique used document tracing in the form of medical records at the Salatiga Regional General Hospital with a checklist sheet instrument. A letter of permission was given to the hospital's director before the data gathering. The respondent's data was taken based on the

database of the hospital's medical record section. By the medical record number, the mother's medical record was taken by the medical record officer and given to the researcher to be recorded in the instrument's sheet at that time and not taken home. The access duration for each medical record is about 5 to 10 minutes.

Data analysis

Data from the medical records were tabulated and analyzed using descriptive statistics such as frequencies and percentage distribution. The research data results cannot be calculated for the odds or risk ratio because the dependent variable, the incidence of postpartum hemorrhage, has a constant value. All the medical records included in this study were those of mothers with postpartum hemorrhage. Therefore, the effect of each covariate cannot be tested.

Ethical consideration

Before the actual data gathering, ethics clearance was obtained from the Ethics Committee of Universitas Kristen Satya Wacana, with the number 03/KOMISIETIK/EC/1/2023. Permission from the Salatiga Region General Hospital was sought to collect the women's medical records before the data collection.

RESULTS

Table 1. Respondents' characteristics (n = 40)

Respondent's characteristics	f	%
Age (y.o)		
14-19	6	6.7
20-35	52	58.4
36-45	31	34.8
Mean: 30.9 (SD ± 6.7)		
Education		
College	12	13.4
Senior High School	35	39.3
Junior High School	18	20.2
Primary School	24	26.9
Occupation		
Housewife	49	55.1
Public servant	7	7.9
Farmer	2	2.2
Laborer	6	6.7
Employee	22	24.7
Lecturer	1	1.1
Vegetable seller	2	2.2
Ethnic group		
Javanesse	87	97.7
Betawi	2	2.2
Marital status		
Unmarried	4	4.4
Married	85	95.5

Based on Table 1, the results of the study showed that mothers who experienced postpartum hemorrhage were mothers of productive age 20-35 years 52 (58.4%), high school education 35 respondents (39.3%), homemakers 49 (55.0%), Javanese ethnicity 87 (97.8%), marital status 85 (95.5%) are married.

Table 2. Obstetric status of the respondents

Variable	f	%
Parity		
Primiparity	24	27.0
Multiparity	65	73.0
Type of pregnancy		
Single	88	98.9
Multiple	1	1.1
Interval with the last delivery		
< 2 years	38	42.7
2 years and above	51	57.3

Table 2 shows that most respondents had given birth before, with the most children being 2-4 (69.7%). Meanwhile, the type of pregnancy the respondents mostly had was lingering pregnancy (98.9%). Most respondents had a birth spacing of 2 years and over with previous births (57.3%).

Table 3. The health status of the respondents

Variable	f	%
Comorbidities		
Anemia	39	43.8
Hypertension	4	4.5
Without comorbidities	46	51.7

Previous pregnancy complication		
Curette	1	1.1
Abortion	1	1.1
Cesarean Section	1	1.1
No complication	86	96.6
Intrapartum complication		
Birth canal lacerations	10	11.2
Retained placenta	33	37.1
Secondary hemorrhage	6	6.7
No complication	40	44.9

Table 3 shows that most women who experienced postpartum hemorrhage in Salatiga Region General Hospital had no comorbidities (51.7%). Still, almost half of the respondents had anemia during pregnancy (43.8%). The previous pregnancy history shows similar results that most respondents did not have previous pregnancy complications. However, only 55.1% of the respondent's medical records reported difficulties during and after birth: birth canal lacerations, retained placenta, and secondary hemorrhage.

DISCUSSION

The results of the research presented in the results section seem to strengthen the theory put forward by previous researchers that postpartum hemorrhage is an event that cannot be predicted, even though several risk factors have been identified through previous research (13). This assumption is evident from the age of postpartum hemorrhage sufferers who are more in the healthy reproductive age range, have varying levels of education from primary, secondary to higher education, work or as housewives, to married status. This study proves that postpartum hemorrhage can occur in all birth mothers regardless of the mother's sociodemographic status.

Related to the obstetrical status of the mother, postpartum hemorrhage is more common in women who have given birth before than those who have not given birth before. Until now, there is still inconsistency regarding the relationship between parity and postpartum hemorrhage. Some previous studies prove a relationship between parity 1 and > 3 and the incidence of postpartum hemorrhage (6,14). However, another study shows that postpartum hemorrhage is more significant at parity 7 in spontaneous labor and parity 3 in sectional delivery (15). Primiparity is a risk factor for postpartum bleeding due to a lack of information obtained by the mother, causing unpreparedness to face possible complications in pregnancy and childbirth. More deliveries have also been shown to contribute to the incidence of postpartum hemorrhage due to weakening uterine contractions, causing thinning of the uterine wall (16).

An exciting finding was shown by the results of a study regarding the type of pregnancy, in which almost all women who experienced postpartum hemorrhage had a persistent pregnancy. The results refuted some of the effects of previous studies that obstetric complications, including postpartum hemorrhage, generally occur in multiple pregnancies compared to singleton pregnancies due to factors such as increased uterine tension, low blood accumulation, mechanical pressure on the cervix, and premature rupture of membranes causing postpartum hemorrhage and death in mother and baby (17). However, the results of this study were supported by another study, which reported that postpartum hemorrhage was more common in mothers with single births than in mothers with more than one fetus (18). Based on the results of this study and some previous studies, it was concluded that postpartum hemorrhage can occur in all types of pregnancies.

Furthermore, the obstetrical status of the mother, as seen from the distance between the current pregnancy and previous pregnancies, shows that postpartum hemorrhage is more common in women giving birth with a gestational age of 2 to 4 years. This study is in line with the previous research in South Ethiopia, in which more than half of the primary postpartum hemorrhage was attributed to inter-pregnancy interval <2 years (19). Other studies have revealed that apart from short intervals or <2 years, women with long birth intervals or > four years have a greater risk of experiencing postpartum hemorrhage (7). Once again, the results of this study strengthen the theory that postpartum hemorrhage can occur to anyone, even without previous risk factors.

Regarding comorbidities during pregnancy, two health problems emerged in this study: anemia and hypertension. Anemia itself is believed to cause hypoxia in the

placental tissue. In addition, anemia can also cause hypoxia in uterine muscle tissue, affecting the strength of uterine contractions during and after delivery (20). Reduced uterine contractions, then the risk of postpartum hemorrhage increases. However, research has shown that the association between anemia and postpartum hemorrhage is only significant in severe anemia, compared to mild and moderate anemia (21). Another health problem found in this research is hypertension. Hypertensive disease in pregnancy affects poor placentation. Poor placentation and higher arterial blood pressure can predispose to more rapid blood loss after delivery. Therefore, hypertension during pregnancy is a risk factor for postpartum hemorrhage (22).

In addition to pregnancy complications, in this study, birth complications were found in the medical records of 49 respondents. According to previous studies, the retained placenta and lacerations of the birth canal, as the most common complications of labor, are the causes of postpartum hemorrhage from the category of tissue and trauma. When the placenta does not come out for a long time, and the placenta is pulled out by force, there is a possibility of separation of the placenta. However, it is not intact because there is still placental tissue left in the uterus. This condition causes bleeding because the uterine muscle fibers that bind the maternal blood vessels are still blocked by placental tissue. The remaining tissue in the uterus will also experience necrosis so that when it peels off, it will open the uterus's maternal blood vessels that are not contracting and cause bleeding. Trauma during delivery can be caused by lacerations or hematomas, which result in bleeding. Episiotomy has a high risk of causing bleeding because the cutting area can tear and get bigger during labor (can reach the rectum area) (23). Meanwhile, the perineum has an extensive network of blood vessels, and the available blood has increased along with physiological changes during pregnancy and childbirth (24).

This study describes the mother's condition related to the incidence of postpartum hemorrhage quite thoroughly because it not only identifies the demographic profile of the mother but also describes the history of comorbidities and previous complications in the current delivery. In nursing services, the results of this study form the basis for assessing pregnant women regarding the risk of postpartum hemorrhage. Future research needs to involve data from mothers who did not experience postpartum hemorrhage as a control group so that the ratio of risk factors for postpartum hemorrhage can be explained.

CONCLUSION

Mothers who experienced postpartum hemorrhage at the general hospital in Salatiga City were aged between 14-49 years, with most mothers having at least nine years of primary education, working as housewives, married, and coming from Javanese ethnicity. Most mothers who experience postpartum hemorrhage have given birth before, have an interval between pregnancies of more than two years, and have a type of pregnancy that persists. Meanwhile, based on the history of comorbidities, most mothers who experience postpartum hemorrhage have an account of anemia during pregnancy. The most common birth complication is retained placenta. The results imply that postpartum hemorrhage can happen in women with or without risk factors.

Acknowledgment

The authors thank the Salatiga Region General Hospital's Principal, who allowed us to conduct this study using the patient's medical records, and the Faculty of Health and Sciences, Universitas Kristen Satya Wacana, for supporting this research. We also want to thank all of the women we used their data in this research.

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