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**Factors Associated with Uterine Atony in Mothers Experiencing Postpartum Hemorrhage at the Pasar Minggu District Health Center in 2023**Suryani¹, Vera Suzana Dewi Haris^{2*}, Vina Dwi Wahyunita³¹ Midwifery Department, Medan Health Polytechnic, Indonesia^{*2} Midwifery Department, Jakarta I Health Polytechnic, Indonesia³ Midwifery Department, Jakarta I Health Polytechnic, Indonesia**Abstract**

Postpartum hemorrhage is the most common cause of maternal death. Primary postpartum hemorrhage is postpartum hemorrhage that occurs within the first 24 hours of birth. The purpose of this paper is to determine the factors associated with uterine atony in mothers who experience postpartum hemorrhage at the Pasar Minggu District Health Center in 2023. The research method used in this study is analytical with a cross-sectional approach to obtain factors related to independent and dependent variables, followed by analyzing the factors related to uterine atony in mothers who experience postpartum hemorrhage analytically. The results of the study showed that there was a relationship between age and uterine atony in mothers who experienced postpartum hemorrhage with an X2 hit value of 4.07, there was a relationship between parity and uterine atony in mothers who experienced postpartum hemorrhage with an X2 hit value of 6.64, there was no relationship between fetal weight and uterine atony in mothers who experienced postpartum hemorrhage with an X2 hit value of 0.524, there was a relationship between anemia status and uterine atony in mothers who experienced postpartum hemorrhage with an X2 hit value of 7.96, there was no relationship between the distance of delivery and uterine atony in mothers who experienced postpartum hemorrhage with an X2 hit value of 2.126. Conclusions and Suggestions age, parity, anemia status, are factors related to uterine atony in mothers who experienced postpartum hemorrhage, but fetal weight, and distance of delivery are not factors related to uterine atony in mothers who experienced postpartum hemorrhage. It is hoped that it will be able to detect complications early, encouraging mothers to have regular ANC check-ups at least 4 times during pregnancy.

Keywords: Postpartum Hemorrhage, Uterine Atony, Mother in Labor



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1. Introduction

Pregnancy and childbirth are physiological processes but do not rule out the possibility of complications. Maternal death can be caused by complications in pregnancy and childbirth that can actually be prevented. The most cases of maternal death are found in developing countries with one of the main causes being postpartum hemorrhage (Sebghati M, 2017).

MMR is the number of maternal deaths as a result of complications of pregnancy, childbirth, and the postpartum period per 100,000 live births (Nur et al., 2018). World Health Organization (WHO) data in 2017, the number of maternal deaths in the world was 817 every day (Husada & Yuniansi, 2020). The number of maternal mortality rates (MMR) in Indonesia is categorized as high compared to other Southeast Asian countries. According to the Ministry of Health of the Republic of Indonesia (Kemenkes RI), deaths in Indonesia are mostly caused by postpartum hemorrhage (Kemenkes RI, 2018), with the number of MMR estimated to reach 183/100,000 KH in 2024 and 131/100,000 KH in 2030, which means it is still far from the target of Sustainable Development Goals (SDGs) (Anisykurlillah & E, 2023). One of the contributors to MMR in Indonesia is the province of DKI Jakarta with results reported in 2020 as many as 90 per 100,000 live births, with the highest number of deaths in the East Jakarta area with a total of 28 per 100,000 live births, and West Jakarta as many as 20 per 100,000 live births (Ministry of Health, 2022).

Postpartum hemorrhage is bleeding that comes out of the birth canal with the amount of blood that comes out exceeding the normal limit (more than 500 ml) in vaginal delivery and 1000 ml in cesarean section accompanied by changes in vital signs as a result





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of hemodynamic instability in heavy bleeding and a decrease in hematocrit. Bleeding with a loss of blood volume of 30-40% is called massive postpartum hemorrhage (Sebghati M, 2017) with the cause of postpartum bleeding of around 75-80%, one of which is uterine atony because the myometrial fibers that surround the blood vessels that vascularize the placental implantation area do not contract (Nurchairina, 2017).

Risk factors for uterine atony are caused by antepartum and intrapartum. In the antepartum period caused by anemia since pregnancy (Hb \leq 9 gr/dl), increasing maternal age, grande multipara, excessive uterine distension (twin pregnancy, macrosomia, polyhydramnios), and history of postpartum hemorrhage while risk factors in intrapartum consist of general anesthesia, accelerated labor, prolonged labor, prolonged third stage, and partus precipitatus (Nurchairina. (2017, Sebghati M, Weeks A)

In developing a hospital-based maternal and perinatal death surveillance and response system, the World Health Organization (UNICEF) has achieved improvements in maternal health to prevent death. In Indonesia, these efforts are made by transforming the health system to provide better services for the entire community, including mothers and children. Kehamilan dan persalinan merupakan proses fisiologis namun tidak menutup kemungkinan untuk terjadi komplikasi. Kematian ibu dapat disebabkan oleh komplikasi pada kehamilan dan persalinan yang sebenarnya dapat dicegah. Kasus kematian ibu terbanyak ditemukan di negara berkembang dengan salah satu penyebab utamanya adalah kasus perdarahan postpartum (Sebghati M, 2017).

2. Research Method

This research is an analytical research with the research method used is Cross Sectional (cross-sectional) where data concerning independent variables or risks and dependent variables or effect variables will be collected at the same time.

The population in this study were all mothers who experienced postpartum hemorrhage in the delivery room of the Pasar Minggu District Health Center in 2023, totaling 54 people. The sampling technique used was total sampling so that the number of samples was 54 people.

The variables of this study are factors related to uterine atony in mothers who experience postpartum hemorrhage (age, parity, fetal weight, anemia status, delivery





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distance) as independent variables. Other research variables are postpartum hemorrhage as the dependent variable.

The data collection technique in this study is to use a questionnaire based on related variables. To analyze the data obtained from the results of the study, univariate and bivariate analysis will be used. The collected data was analyzed using the Chi-square test.

3. Results And Discussions

a. Results

Tabel 1.

The characteristics of the respondents are presented in the table below:

No	Characteristics	Frequency (n=54) perience	%
1.	Uterine Atony in Mothers Who Ex Postpartum Hemorrhage Yes	33	61
2.	No Age >35 years 20-30 years	21 13 41	39 24 76
3.	Parity Grandemultipara (>3x) Primipara (1x)	16 17	30 31
4.	Multipara (2-3x) Fetal weight < 2500 grams 2500-4000 grams	21 3 51	39 6 94
5.	Anemic status 7-8 gr % 9-10 gr % 11 g %	8 18 28	15 33 52
6.	Delivery Distance < 2 years Don't have children yet > 2 years	3 17 34	6 31 63

Table 2. Distribution of Age, Parity, Fetal Weight, Anemia Status and Delivery Interval with
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**Uterine Atony in Mothers Who Experience Postpartum Hemorrhage**

Variable	Uterine atony in mothers who have experienced postpartum hemorrhage				Amount		
	Yes		No		n	%	
	N	%	n	%	n	%	
1. Age							X2 hit = 4,07
>35	9	69	4	31	13	100	X2 table= 3,84
20-30 years	24	59	17	41	41	100	DB= 1
2. Parity							X2 Hit = 6,64
Grandemultipara (>3x)	5	31	11	69	16	100	X2 table = 5,99
Primipara (1x)	12	71	5	29	17	100	Db = 2
Multipara (2-3x)	13	62	8	38	21	100	
3. Fetal weight							X2 Hit= 0,524
< 2500 gr	2	67	1	33	3	100	X2 table=3,841
2500-4000 gr	31	61	20	39	51	100	Db = 1
4. Anemia status							X2 Hit = 7,96
11 gr %	22	79	6	21	28	100	X Table =
9-10 gr %	8	44	10	56	18	100	5,991 Db = 2
7-8 gr %	3	38	5	62	8	100	
5. Interval of Birth							X2 Hit = 2,126
Those who have never given birth < 2	12	71	5	29	17	100	X2 Table=
< 2	2	67	1	33	3	100	5,991
>2	18	53	16	47	34	100	Db = 2

1) Relationship between uterine atony in mothers who experience postpartum hemorrhage and age

The results of the analysis show that the incidence of uterine atony in mothers who experience postpartum hemorrhage based on age at the Pasar Minggu District Health Center in 2023, the most frequent uterine atony in mothers who experience postpartum hemorrhage are at the age of > 35 years, as many as 9 respondents (69%) and do not experience uterine atony in mothers who experience postpartum hemorrhage at the age of 20-30 years as many as 24 (59%).

Based on the bivariate analysis carried out using the chi square test, the results of the analysis obtained an X2 value of 4.07 and an X2 table of 3.841 with db = 1 and $\alpha 5\% = 0.05$, so the test decision is to reject Ho, meaning there is a significant relationship between age and the occurrence of uterine atony in mothers who experience postpartum hemorrhage. Pregnant women and giving birth at the age of over





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35 years turned out to be 2-5 times higher than those aged 20-30 years. This is because at the age of over 35 years, a woman's reproductive function has decreased compared to normal reproductive function so that the possibility of postpartum complications, especially bleeding, will be greater (Fibriana, 2017). The results obtained by the author are in line with research conducted by Retno and Fransiska (2022). That among 195 respondents aged less than 20 years or over 35 years, 46 (23.6%) respondents experienced bleeding, while out of 305 respondents aged 20-35 years only 47 (15.4%) experienced bleeding. According to the author's assumption, the age group > 35 years, the results obtained may be influenced by the decreased function of the mother's organs, when pushing the mother gets tired more quickly.

2) Relationship between uterine atony in mothers who experience postpartum hemorrhage and parity

The results of the analysis showed that the incidence of uterine atony in mothers who experienced postpartum hemorrhage based on parity at the Pasar Minggu District Health Center in 2023, the highest incidence of uterine atony in mothers who experienced postpartum hemorrhage was in the primiparous parity (1x) of 12 respondents (71%) and did not experience uterine atony in mothers who experienced postpartum hemorrhage in the multiparous group (2-3x) of 13 (62%), and in the grandemultiparous group (3x) of 5 (31%).

Based on the bivariate analysis conducted using the chi square test, the results of the analysis obtained an X^2 value of 7.32 and an X^2 table of 5.991 with $db = 2$ and $\alpha 5\% = 0.05$, so the test decision is to reject H_0 , meaning there is a significant relationship between parity and the occurrence of uterine atony in mothers who have postpartum hemorrhage.

Low parity (parity 1) can cause the mother to be unprepared to face childbirth so that pregnant women are unable to handle complications that occur during pregnancy, childbirth and postpartum. Parity 2-3 is the safest parity in terms of postpartum hemorrhage which can result in maternal death (Diniya, 2016). The results obtained by the author are not in line with the research conducted by Sugi and Yuli (2015). Which states that the multiparity parity group (2-3x) is more at risk of





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experiencing postpartum hemorrhage. According to the author's assumption, this is because the uterine muscles are still stiff, during pregnancy they did not do pregnancy exercises, and the mother was not prepared to face childbirth.

3) Relationship between uterine atony in mothers who experience postpartum hemorrhage and fetal weight

The results of the analysis showed that the incidence of uterine atony in mothers who gave birth based on fetal weight who experienced postpartum hemorrhage at the Pasar Minggu District Health Center in 2023, the highest incidence of uterine atony in mothers who experienced postpartum hemorrhage was in the fetal weight <2500 grams, 2 respondents (67%) and the highest incidence of no postpartum hemorrhage in the 2500- 4000 gram group, 31 (61%).

Based on the bivariate analysis carried out using the chi square test, the results of the analysis obtained an X^2 value of 0.524 and an X^2 table of 3.841 with $db = 1$ and $\alpha 5\% = 0.05$, so it can be said that there is no significant relationship between fetal weight and the occurrence of uterine atony in mothers who gave birth who experienced postpartum hemorrhage.

This result is in accordance with the results of Rifdiani's study (2016) that there is no influence of postpartum hemorrhage incidence with birth weight and is not a risk factor. A baby weighing less than 4000 grams is normal and the birth of a baby ≥ 4000 grams requires special attention. In addition, it also requires good health services to determine the baby's health in the future. According to the author's assumption, the results obtained from mothers who experience postpartum hemorrhage occur more in babies weighing <2500 grams, possibly due to the lack of progress in labor, so in the labor process oxytocin will be given through an infusion. Because uterine contractions are too strong, the blood vessels in the uterus stretch too much and can cause bleeding.

4) Relationship between uterine atony in mothers who experience postpartum hemorrhage and anemia status

The results of the analysis showed that the incidence of uterine atony in mothers who experienced postpartum hemorrhage based on anemia status at the Pasar Minggu





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District Health Center in 2023, the highest incidence of uterine atony in mothers who experienced postpartum hemorrhage was at anemia status of 11 gr%, as many as 22 respondents (79%) and did not experience postpartum hemorrhage in the anemia status group of 9-10 gr% as many as 8 (44%), and in the anemia status group of 7-8 gr%.

Based on the bivariate analysis carried out using the chi square test, the results of the analysis obtained an X^2 value of 7.96 and an X^2 table of 5.99 with $db = 2$ and $\alpha 5\% = 0.05$. So it can be said that there is a significant relationship between anemia status and the occurrence of uterine atony in mothers who experience postpartum hemorrhage.

Pregnancy with anemia is risky, because hemoglobin has an important function in supplying oxygen to the entire body, and if anemia occurs during pregnancy it causes bleeding after delivery due to uterine atony, uterine involution, labor infection, reduced breast milk production, sudden myocardial compensation after delivery, chest infection (Manuaba, 2016).

Anemia can reduce the mother's immune system and increase the frequency of pregnancy and labor complications. Anemia also causes an increased risk of postpartum hemorrhage. The feeling of fatigue in people with anemia is caused by energy metabolism by muscles not running perfectly due to lack of oxygen. During pregnancy, more iron is needed to produce red blood cells because the mother must meet the needs of the fetus and herself and when giving birth the mother needs hemoglobin to provide energy so that the uterine muscles can contract properly (Saktiyandri, 2017).

The results obtained by the author are not in line with the research conducted by Wasmine, 2016 every pregnant woman with or without anemia has a risk of bleeding during labor and is the fourth cause (41%) of bleeding after age and parity.

According to the author's assumption, the results obtained from mothers who experience postpartum hemorrhage are more likely to occur in anemia status of 11 gr%, mothers who are not anemic may possibly be caused by blood clotting factors, poor nutritional status as seen from BMI.

5) The relationship between uterine atony in mothers who experience postpartum





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hemorrhage and the interval of delivery

The results of the analysis show that the incidence of uterine atony in mothers who experience postpartum hemorrhage based on the interval of delivery at the Pasar Minggu District Health Center in 2023, the highest incidence of uterine atony in mothers who experience postpartum hemorrhage is in the interval of delivery who have never given birth, as many as 12 respondents (71%) and do not experience postpartum hemorrhage in mothers who experience postpartum hemorrhage in the <2 group, as many as 12 respondents (67%), and in the interval group of delivery > 2 years, as many as 18 respondents (53%).

Based on the bivariate analysis carried out using the chi square test, the results of the analysis obtained an X^2 value of 2.126 and an X^2 table of 5.99 with $db = 2$ and $\alpha 5\% = 0.05$. So it can be said that there is no significant relationship between the interval of delivery and the occurrence of uterine atony in mothers who experience postpartum hemorrhage.

Interpregnancy intervals of less than 2 years can increase the risk of maternal death. Childbirth with an interval of less than 24 months is a high-risk group for postpartum hemorrhage, maternal morbidity and mortality (Rifdiani, 2016). The results obtained by the author are not in line with the research conducted by Annisa and Reka (2018) which stated that the interval between births with previous children was less than 2 years, the uterus and maternal health had not recovered properly. According to the author's assumption, so based on the research that has been done, it shows that the interval between deliveries does not affect the occurrence of bleeding because there are more dominant factors compared to the interval between deliveries, including factors such as anemia status, age, economy, nutrition.

4. Conclusion

From the results of the study conducted at the Pasar Minggu District Health Center, Factors Related to Uterine Atony in Mothers Who Experience Postpartum Hemorrhage, it can be concluded that the incidence of postpartum hemorrhage is still high. Of the 54 respondents, 38 respondents (70%) experienced uterine atony.

- 1) There is a relationship between uterine atony in mothers who experience postpartum





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hemorrhage in the age group >35 years of 69%.

- 2) There is a relationship between uterine atony in mothers who experience postpartum hemorrhage and parity in the primiparous parity group (1x) of 71%.
- 3) There is no relationship between uterine atony and fetal weight in the fetal weight group <2500 grams of 61%.
- 4) There is a relationship between uterine atony and anemia status in the anemia status group 11 gr% of 79%.
- 5) There was no relationship between uterine atony and the birth interval in the birth interval group that had never given birth, which was 71%.

5. Compliance with ethical standards

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Disclosure of conflict of interest

For all researchers, this research collaboration is beneficial because it can eliminate disputes, problems, and other obstacles.

Statement of consent given consciously

The actions taken by the author team constitute a mutual agreement or consent.

References

1. Sebhathi M, Chandharan E. *An update on the risk factors for and management of obstetric haemorrhage*. Women's Heal. 2017;13(2):34–40.
2. Nur, M. S. K., Khiriyah, H. I., & Kurniawan, D. (2018). *Pengembangan Model Pendidikan Kesehatan pada Ibu Hamil untuk Menurunkan Angka Kematian Ibu di Kabupaten Bogor*. Jurnal Program Kreatifitas Mahasiswa, 2(1).
3. Husada, P. Y., & Yuniansi, A. F. (2020). *Analisis Spasial Angka Kematian Neonatal di Pulau Jawa Tahun 2020 (Spatial Analysis of Neonatal Mortality Rates in Java Island 2020)*. Seminar Nasional Official Statistic 2022, 2020, 207–216.
4. Kemenkes RI. (2018). *Laporan Kinerja Ditjen Kesehatan Masyarakat tahun 2017*. Direktorat Jenderal Kementerian Kesehatan 2018.





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5. Anisykurlillah, R., & E, P. W. (2023). *Evaluasi Pembangunan Kesehatan dalam Upaya Penurunan Angka Kematian Ibu dan Bayi di Kabupaten Malang*. Journal Publicuho, 6(1).
6. Kemenkes (2022) 'Laporan Kinerja Direktorat Kesehatan Keluarga Tahun 2021', Kementerian Kesehatan RI, 5201590(021),p. 4. Available at: <https://www.depkes.go.id/article/view/19020100003/hari-kanker-sedunia-2019.html>
7. Nurchairina. (2017). *Hubungan Overdistensi Uterus Dengan Kejadian Atonia Uteri Pada Ibu Post Partum Di Sebuah Rumah Sakit Di Provinsi Lampung*. Jurnal Keperawatan.13(2):215-20.
8. Fibriana. (2017). *Hubungan umur dengan kejadian perdarahan postpartum di RSUD Dr. Moewardi Surakarta* (skripsi).
9. Kumalasari, Retno dan Fransisca Widiastuti. (2022). *Risiko Atonia Uteri Terhadap Perdarahan Post Partum pada Ibu Bersalin*. Jurnal Publikasi Kebidanan 13(1).
10. Diniya. (2016). *Hubungan Antara Paritas dengan Perdarahan Postpartum*. Skripsi. Surakarta: Fakultas Kedokteran, Universitas Negeri Sebelas Maret Surakarta.
11. Purwanti, Sugi dan Yuli Trisnawati. (2015). *Determinan Faktor Penyebab Kejadian Perdarahan Post Partum Karena Atonia Uteri*. Jurnal Ilmiah Kebidanan 6(1).
12. Rifdiani. (2016). *Pengaruh Paritas, BBL, Jarak Kehamilan dan Riwayat Perdarahan Terhadap Kejadian Perdarahan Postpartum*. Jurnal Berkala Epidemiologi 4(3): 396-407.
13. Manuaba. (2016). *Ilmu Kebidanan Penyakit dan Kandungan dan Kb untuk Pendidikan Bidan*. Jakarta: EGC.
14. Saktiyandri dkk. (2017). *Faktor-faktor yang Mempengaruhi kejadian Perdarahan Postpartum*. Journal of health Studies 1(1):49-64.
15. Maswime, Salome. (2016). *Cause and Avoidable Factors in Maternal Death due to Cesareanrelated hemorrhage in South Africa*.South Africa: Intrnational Journal of Gynecology and Obstetrics 134(2016) 320-323.
16. Annisa dkk. (2018). *Faktor Resiko Hemorrhage Pasca Post Partum*. Jurnal Media Kesehatan 11(1):012-101.

