

The Association Between A History Of Hypertension And The Incidence Of Hypertension In Pregnancy In The Working Area Of Sawah Lebar Community Health Center, Bengkulu City

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ABSTRACT

Hypertension in pregnancy is a complication that can increase the risk of maternal and fetal morbidity and mortality. A history of pre-existing hypertension is a risk factor that requires attention during pregnancy monitoring. This study aimed to determine the relationship between a history of hypertension and the occurrence of hypertension in pregnancy. This study employed a quantitative method with an observational analytic design and a cross-sectional approach. The sample consisted of 40 pregnant women selected using purposive sampling. Data were collected through interviews and observation sheets regarding hypertension history and blood pressure measurements. Data analysis was conducted using univariate and bivariate methods, specifically the Chi-Square test with a significance level of $\alpha=0.05$. Of the 40 respondents, 10 (25.0%) had a history of hypertension, while 30 (75.0%) did not. Fourteen respondents (35.0%) developed hypertension during pregnancy, and 26 (65.0%) did not. Among the 10 respondents with a history of hypertension, 8 (80.0%) developed hypertension during pregnancy. Meanwhile, among the 30 respondents without a history of hypertension, 6 (20.0%) developed hypertension during pregnancy. The Chi-Square test result showed a p-value of 0.001 ($p<0.05$). There is a significant relationship between a history of hypertension and the occurrence of hypertension in pregnancy. A history of hypertension is a factor associated with the occurrence of hypertension in pregnancy, though it is not the sole influencing factor.

INTRODUCTION

Pregnancy is a physiological process requiring continuous monitoring to detect risk factors or complications that could threaten the health of the mother and fetus. One complication requiring attention is hypertensive disorders of pregnancy. These disorders are a significant cause of maternal and perinatal morbidity and mortality. The World Health Organization (WHO) reports that preeclampsia affects approximately 3–8% of women giving birth worldwide, and hypertensive disorders of pregnancy contribute to about 16% of global maternal deaths (WHO, 2025).

Hypertension in pregnancy encompasses several conditions, including chronic hypertension, gestational hypertension, preeclampsia, and eclampsia. The American College of Obstetricians and Gynecologists (ACOG) defines chronic hypertension as hypertension present before pregnancy or diagnosed prior to 20 weeks of gestation. Meanwhile, gestational hypertension is defined as hypertension occurring after 20 weeks of gestation in women who did not previously have hypertension (ACOG, 2019; ACOG, 2020). These conditions require monitoring because they can progress to more severe complications during pregnancy.

A history of pre-pregnancy hypertension is a factor that must be considered when assessing risk in pregnant women. Women with chronic hypertension are at risk of pregnancy complications, including preeclampsia, preterm birth, placental abruption, and other maternal and neonatal complications (ACOG, 2019). Therefore, assessing hypertension history is a crucial part of pregnancy monitoring and identifying women who require more intensive supervision.

The relationship between pre-pregnancy blood pressure and the occurrence of hypertension during pregnancy has also been demonstrated in previous studies. Zhang et al. A 2020 cohort study of 45,628 women found that pre-pregnancy blood pressure is associated with an increased risk of gestational hypertension and preeclampsia. These findings indicate that blood pressure levels prior to or in early pregnancy can serve as a key indicator for identifying mothers at risk of developing hypertensive disorders during pregnancy.

Hypertension during pregnancy affects not only the mother's condition but also the fetus and the labor process. Hypertension and preeclampsia can increase the risk of preterm birth, fetal growth restriction, placental abruption, and severe maternal complications. If preeclampsia is not managed effectively, it can progress to eclampsia—characterized by seizures—which poses a danger to both the mother and the fetus (WHO, 2025; ACOG, 2020).

Early detection and regular blood pressure monitoring are crucial for preventing complications associated with hypertension in pregnancy. The WHO emphasizes that early detection, monitoring, and timely management are essential components in reducing complications arising from hypertensive disorders during pregnancy (WHO, 2025). In midwifery practice, assessing risk factors—including a history of hypertension—helps healthcare providers determine the monitoring and follow-up needs of pregnant women.

In Indonesia, hypertension during pregnancy is a significant issue requiring attention within maternal healthcare services. A multicenter study conducted in Indonesia by Akbar et al. (2026) identified chronic hypertension as a factor present in pregnancies complicated by preeclampsia. This finding underscores the importance of assessing a history of hypertension as part of the risk evaluation for pregnant women in healthcare facilities.

Based on the foregoing, a history of hypertension is a critical factor to examine in relation to the occurrence of hypertension during pregnancy. Although the link between pre-existing hypertension and hypertensive disorders during pregnancy has been documented in previous studies, this relationship warrants further investigation within specific populations and healthcare settings to obtain empirical data that reflect the characteristics of pregnant women in the study area. Therefore, this study was conducted under the title "The Relationship Between a History of Hypertension and the Occurrence of Hypertension in Pregnancy in the Working Area of Sawah Lebar Community Health Center, Bengkulu City "

METHODS

This study employed a quantitative method with an observational analytic design and a cross-sectional approach. The study sample consisted of 40 pregnant women selected using purposive sampling. The independent variable was a history of hypertension, while the dependent variable was the occurrence of hypertension during pregnancy. Data were collected through interviews and observation sheets based on hypertension history and blood pressure measurements. Data analysis was conducted using univariate and bivariate methods with the Chi-Square test at a significance level of $\alpha = 0.05$; Fisher's Exact Test was used if the Chi-Square assumptions were not met.

RESULT

Table 1. Frequency Distribution of Hypertension History among Pregnant Women (n=40)

Hypertension History	Frequency (f)	Percentage (%)
Yes	10	25,0
No	30	75,0
Total	40	100,0

Source: Data, 2026

Based on Table 1, the majority of respondents did not have a history of hypertension—specifically 30 respondents (75.0%)—whereas 10 respondents (25.0%) had a history of hypertension.

Table 2. Staining Quality of Pleural Effusion Smears According to Evaluation Parameters and Fixative

Hypertension in Pregnancy	Frequency (f)	Percentage (%)
Yes	14	35,0
No	26	65,0
Total	40	100,0

Source: Data, 2026. Data are presented as frequency (n) and percentage (%).

Based on Table 2, 14 respondents (35.0%) experienced hypertension during pregnancy, whereas 26 respondents (65.0%) did not experience hypertension during pregnancy.

Table 3. Association between history of hypertension and the occurrence of hypertension in pregnancy.

History of hypertension	Hypertension in Pregnancy		Total	p-value
	Yes	No		
Yes	8 (80,0%)	2 (20,0%)	10 (100%)	0,001
No	6 (20,0%)	24 (80,0%)	30 (100%)	
Total	14 (35,0%)	26 (65,0%)	40 (100%)	

Based on Table 3, the majority of respondents with a history of hypertension experienced hypertension during pregnancy, specifically 8 respondents (80.0%). Statistical test results showed a p-value of 0.001 (<0.05), indicating a statistically significant association between a history of hypertension and the occurrence of hypertension during pregnancy.

DISCUSSION

The study results indicate that among the 10 respondents with a history of hypertension, 8 (80.0%) developed hypertension during pregnancy, while 2 (20.0%) did not. Among respondents with no history of hypertension, 6 (20.0%) developed hypertension during pregnancy, and 24 (80.0%) did not. Statistical analysis yielded a p-value of 0.001 ($p<0.05$), indicating a significant association between a history of hypertension and the occurrence of hypertension during pregnancy.

The findings show that 8 respondents (80.0%) with a history of hypertension developed hypertension during pregnancy, whereas 2 respondents (20.0%) with such a history did not. Conversely, 6 respondents (20.0%) with no history of hypertension developed hypertension during pregnancy. The occurrence of hypertension during pregnancy in respondents without a prior history can be explained by the fact that gestational hypertension can manifest after 20 weeks of gestation in women who previously had normal blood pressure. In addition to a history of hypertension, various other factors can increase the risk of hypertensive disorders during pregnancy, such as a first pregnancy, obesity, maternal age ≥ 35 years, multiple pregnancies, diabetes, kidney disease, and a family history of preeclampsia. Thus, these results demonstrate that a history of hypertension is a factor associated with the occurrence of hypertension during pregnancy, but it is not the sole determinant of hypertension during pregnancy.

These research findings align with the theory that pre-existing hypertension is a risk factor for hypertensive disorders during pregnancy. The WHO identifies pre-existing hypertension as a risk factor for preeclampsia. Consequently, women with a history of hypertension require closer prenatal monitoring, particularly through regular blood pressure checks and the detection of signs of complications.

Physiologically, pregnancy induces changes in the cardiovascular system and blood pressure. In women with pre-existing high blood pressure, this condition can predispose them to an increased risk of hypertensive disorders during pregnancy. This is supported by a study conducted by Li et al. (2020) involving 45,628 women in China. The study found that women with pre-existing hypertension faced a higher risk of developing gestational hypertension compared to those without the condition, with an adjusted risk ratio of 1.40 (95% CI 1.22–1.60). The risk of preeclampsia was also higher, with an adjusted risk ratio of 1.75 (95% CI 1.39–2.19).

Research by Nobles et al. (2020) also supports these findings. Their study demonstrated that pre-pregnancy blood pressure levels were higher in women who subsequently developed preeclampsia or gestational hypertension. An increase of 2 mmHg in mean arterial pressure at 4 weeks of gestation was associated with an increased risk of preeclampsia, with a relative risk of 1.13 (95% CI 1.02–1.25). These findings indicate that blood pressure status prior to and during early pregnancy can serve as a crucial indicator for identifying the risk of hypertensive disorders during pregnancy.

These results are further supported by research concerning blood pressure in early pregnancy. A study published in **Obstetrics & Gynecology** found that the risk of preeclampsia increases with higher blood pressure categories in early pregnancy. Compared to normal blood pressure, stage 1 hypertension has an adjusted odds ratio of 2.35, while stage 2 hypertension has an adjusted odds ratio of 6.49. These results indicate that higher blood pressure levels in early pregnancy are associated with an increased risk of developing preeclampsia.

The findings of this study indicate that women with a history of hypertension require special attention during antenatal care. The WHO emphasizes the importance of routine blood pressure monitoring throughout pregnancy and the management of pre-existing hypertension as part of efforts to prevent complications.

Thus, the results demonstrate an association between a history of hypertension and the occurrence of hypertension during pregnancy. However, given that this study employed a cross-sectional design with a sample size of 40 respondents, the findings reflect a statistical association within the study population and cannot be used to establish a causal relationship.

CONCLUSION

Based on the study results involving 40 respondents, it can be concluded that there is a significant association between a history of hypertension and the occurrence of hypertension during pregnancy; the Chi-Square test yielded a p-value of 0.001 ($p < 0.05$). Among respondents with a history of hypertension, the majority (8 individuals or 80.0%) developed hypertension during pregnancy. However, there were 2 respondents (20.0%) with a history of hypertension who did not develop the condition during pregnancy, as well as 6 respondents (20.0%) without such a history who did develop hypertension during pregnancy. These findings indicate that a history of hypertension is a factor associated with the occurrence of hypertension during pregnancy, but it is not the sole influencing factor.

REFERENCES

- American College of Obstetricians and Gynecologists. (2019). Chronic hypertension in pregnancy: ACOG Practice Bulletin No. 203. **Obstetrics & Gynecology**, 133(1), e26–e50.
- American College of Obstetricians and Gynecologists. (2020). Gestational hypertension and preeclampsia: ACOG Practice Bulletin No. 222. **Obstetrics & Gynecology**, 135(6), e237–e260.
- American College of Obstetricians and Gynecologists. (2022). Clinical guidance for the integration of the findings of the Chronic Hypertension and Pregnancy (CHAP) Study. Practice Advisory.
- Li, N., An, H., Li, Z., Ye, R., Zhang, L., Li, H., & Liu, J. (2020). Preconception blood pressure and risk of gestational hypertension and preeclampsia: A large cohort study in China. *Hypertension Research*, 43(9), 956–962.
- Nobles, C. J., Mendola, P., Mumford, S. L., Silver, R. M., Kim, K., Andriessen, V. C., Connell, M., Sjaarda, L., Perkins, N. J., & Schisterman, E. F. (2020). Preconception blood pressure and its change into early pregnancy: Early risk factors for preeclampsia and gestational hypertension. *Hypertension*, 76(3), 922–929.
- World Health Organization. (2025). Pre-eclampsia. World Health Organization.