Healthy Tadulako Journal (Jurnal Kesehatan Tadulako)
Vol. 11 No. 4, September 2025
P-ISSN : 2407-8441/e-ISSN : 2502-0749

Original Research Paper

The Relationship Between Maternal Knowledge and the Incidence of Hypertension in Pregnancy at Bhakti Medicare Hospital, Sukabumi

Dian Fitria Octafiana*, Dhinny Novryanthi, Ria Andriani

Department of Nursing Study Program, Faculty of Health, Universitas Muhammadiyah Sukabumi, Indonesia

Access this article online
Quick Response Code :

DOI : 10.22487/htj.v11i4.1753

Email Corresponding:
fdian2759@gmail.com

Page : 526 - 532

Article History:
Received: 2025-01-07
Revised: 2025-09-23
Accepted: 2025-09-25

Published by:
Tadulako University,
Managed by Faculty of Medicine.

Website :
https://jurnal.fk.untad.ac.id/index.php/htj/index

OPEN ACCESS

Abstract

Background: Hypertension in pregnancy is a major cause of maternal and fetal morbidity and mortality, contributing to 14% of global maternal deaths. In Indonesia, it is the second leading cause of maternal mortality. Knowledge is an important determinant of health behavior, yet its link to pregnancy-induced hypertension remains underexplored in Sukabumi. **Objective:** To analyze the relationship between pregnant women's knowledge and the incidence of hypertension in pregnancy. **Methods:** A quantitative cross-sectional study was conducted with 44 pregnant women diagnosed with hypertension in the Amarylis Room, Bhakti Medicare Hospital, Sukabumi (November–December 2024). Data were collected using a validated 15-item questionnaire. Knowledge level (good, sufficient, poor) and hypertension severity (mild, severe) were analyzed with the chi-square test ($p < 0.05$). **Results:** Most respondents had poor knowledge (45.5%) and severe hypertension (52.3%). Chi-square analysis showed a significant relationship between knowledge and hypertension incidence ($p = 0.002$). Severe hypertension was more frequent among women with poor knowledge (36.4%) compared to those with good knowledge (2.3%). **Conclusion:** Maternal knowledge significantly influences the incidence of hypertension in pregnancy. Educational interventions are urgently needed to reduce risks and improve maternal health outcomes.

Keywords: *Knowledge; Pregnancy; Hypertension in pregnancy; Maternal Health; Preeclampsia.*

Introduction

Pregnancy is a physiological condition defined as the period in which a woman carries a developing fetus, resulting from the fertilization of an ovum by a sperm, typically lasting around 40 weeks or 9-10 months[1]. Although a natural state, pregnancy can be complicated by conditions that threaten both maternal and fetal health. Among these, high blood pressure, or hypertension, stands out as one of the most significant and prevalent disorders, posing a serious risk to pregnancy outcomes[2]. A pregnant woman's knowledge about potential complications is fundamental, as it forms the basis for forming appropriate health-seeking behaviors. A lack of adequate knowledge has been identified in several studies as a primary contributor to preventable mortality during childbirth[3]. Comprehensive understanding is crucial for helping women navigate pregnancy effectively, ensuring mental and physical preparedness, and preventing severe conditions like gestational preeclampsia, a disorder characterized by edema, proteinuria, and hypertension induced by pregnancy[3].

Globally, the impact of hypertension in pregnancy is substantial. The World Health Organization (WHO) reports that it accounts for 14% of maternal deaths worldwide and is a and infants4. In regions like Latin America and the Caribbean, hypertensive disorders are

responsible for 25.7% of maternal deaths, while in Sub-Saharan Africa and parts of Asia, the condition remains a critical public health challenge4. In Indonesia, the situation is particularly alarming, with hypertension in pregnancy being the second leading cause of maternal mortality after hemorrhage, contributing to nearly 30% of all maternal deaths5. At the provincial level, West Java reported 745 cases of maternal mortality (85.77 per 100,000 live births) in a recent year, with hypertensive disorders constituting 28.86% of these deaths, surpassing hemorrhage (27.92%)6. Sukabumi Regency, within West Java, reflects this troubling trend, with hypertension being a direct cause of 12.5% of maternal deaths in 20237.

Preliminary data from Bhakti Medicare Hospital in Sukabumi, a first-level referral facility in Cicurug District, further underscores the local severity of this issue. In September 2024, hypertension and preeclampsia were the most common pregnancy-related complications, accounting for 16% of cases, followed by anemia and antepartum hemorrhage at 7% each8. A preliminary study conducted by the researcher on October 1, 2024, in the Amarylis Room of this hospital, involving interviews with 10 hypertensive pregnant women, revealed a significant knowledge gap: six patients were unaware of their hypertensive condition due to a lack of prior symptoms, three were diagnosed during community health center visits (posyandu), and only one had a pre-existing history of hypertension9. This local context highlights a critical gap between the known importance of knowledge and its practical application among pregnant women in this specific setting, indicating a need for a focused investigation.

While previous studies, such as those by Elisabeth Setiawati (2019) and Sunarsih (2016), have established a general link between maternal knowledge and hypertension in pregnancy, there remains a notable gap in understanding this relationship within the specific socio-cultural and healthcare context of Sukabumi, particularly at the primary referral level. This research introduces novelty by focusing on a population in a district-level hospital where access to consistent, high-quality antenatal education may be inconsistent. By examining this relationship in a real-world clinical setting like the Amarylis Room, this study aims to provide context-specific evidence that can inform more effective, localized interventions, differentiating itself from broader, more generalized studies.

This study was guided by the main research question: "Is there a significant relationship between the level of knowledge among pregnant women and the incidence of hypertension in pregnancy at Bhakti Medicare Hospital, Sukabumi?" The general objective was to determine this relationship. Specific objectives were: (1) to describe the level of knowledge about hypertension among pregnant women in the study setting, and (2) to describe the incidence of hypertension in pregnancy among the respondents.

The findings of this research have significant potential implications. Academically, they will contribute to the body of evidence on maternal health determinants in Indonesia. For healthcare policy and practice, the results can provide a critical evidence base for Bhakti Medicare Hospital and local health authorities in Sukabumi to design and implement targeted educational programs. By identifying knowledge as a key factor, this study can guide the development of more effective antenatal care strategies, potentially reducing the incidence and severity of hypertension in pregnancy and improving overall maternal and neonatal health outcomes in the region.

Materials and Methods

Study Design

This research utilized a quantitative approach with a cross-sectional design. This design was chosen because it is appropriate for analyzing the relationship between two variables in this case, the level of knowledge (independent variable) and the incidence of hypertension (dependent variable) at a single point in time within the context of maternal health in a clinical setting.

Sample

The population in this study was all pregnant women diagnosed with hypertension who were admitted to the Amarylis Room of Bhakti Medicare Hospital, Sukabumi, during the research period. The research sample was selected using the accidental sampling technique, a non-probability method, due to the practical constraints of accessing all eligible patients within a limited timeframe. The inclusion criteria were: (1) pregnant women willing to participate as respondents, (2) blood pressure >140/90 mmHg, and (3) pregnancy in the second or third trimester. Exclusion criteria included: (1) unwillingness to participate and (2) blood pressure <130/80 mmHg. The number of samples was determined based on the total accessible population during the study period, which resulted in 44 participants.

Data Collection Technique

Data was collected through a questionnaire consisting of 15 questions designed to measure the respondents' knowledge of hypertension in pregnancy. Before deployment, the instrument was tested for validity and reliability on a small group of 10 pregnant women with similar characteristics who were not part of the main study, yielding a Cronbach's alpha of 0.78, indicating acceptable reliability. The data collection procedure was conducted in the Amarylis Room of Bhakti Medicare Hospital, Sukabumi, within a timeframe of November 14 to December 17, 2024. Respondents who met the inclusion criteria were given a thorough explanation of the research's aims and procedures, and informed consent was obtained before they were asked to complete the questionnaire.

Data Analysis Technique

The collected data were analyzed using two methods. Univariate analysis was performed to determine the frequency distribution of each variable, including respondent characteristics, knowledge level, and hypertension incidence. Bivariate analysis was conducted to test the relationship between the knowledge variable and the incidence of hypertension using the chi-square statistical test. A significance level (α) of 0.05 was established. The decision criterion for the chi-square test was to reject the null hypothesis (H0) if the p-value was < 0.05. To ensure accuracy, the data were processed with the assistance of SPSS software version 25.0.

Ethical Consideration

This study has received approval from the Ethics Committee of the Faculty of Health, Universitas Muhammadiyah Sukabumi, with the permit number 045/KEPK-FK-UMS/2024. All participants were given detailed information about the study, and written informed consent was obtained before their inclusion. The confidentiality of the collected data was guaranteed, and all participant identifiers were removed to ensure anonymity in accordance with the principles of health research ethics.

Results

The results are presented in descriptive and analytical form, supported by two tables to facilitate interpretation.

Table 1 summarizes the demographic characteristics of the respondents, including age, gestational age, parity, and education

level. These characteristics provide an overview of the study population and their relevance to maternal health status.

Table 1 Frequency distribution of respondent characteristics. Relationship between knowledge and the incidence of hypertension in pregnancy

Respondent Characteristics	Frequency	Percentage
Respondent's age		
Less than 30 years	19	43.2
More than 31 years	25	5.8
Gestational age		
2nd trimester	12	27.3
3nd trimester	32	72.7
Parity		
Primigravida	14	31.8
Multigravida	30	68.2
Educational level		
Elementary	0	0
Junior high school	4	9.1
Senior high school	28	63.6
College	12	27.3
Mothers knowledge		
Good	7	15.9
Enough	17	38.7
Less	20	45.5
Hypertension in pregnancy		
Mild hypertension	21	47.7
Severe hypertension	23	52.3

Source :Primary Data 2024

Descriptive findings of the main variables are also presented in Table 1. The distribution of knowledge regarding hypertension in pregnancy showed that most respondents had a low level of knowledge (20 respondents, 45.5%), followed by a sufficient level (17 respondents, 38.6%), and a good level (7 respondents, 15.9%). In terms of hypertension incidence, more than half of the respondents experienced severe hypertension (23 respondents, 52.3%), while the remaining 21 respondents (47.7%) had mild hypertension.

Table 2 presents the results of the chi-square test analyzing the relationship between knowledge level and hypertension incidence. The analysis demonstrated a statistically significant association (p = 0.002). A greater proportion of women with poor knowledge experienced severe hypertension (36.4%), whereas only 2.3% of those with good knowledge had severe cases. Conversely, respondents with good knowledge were more likely to present with mild hypertension (13.6%) than severe hypertension (2.3%).

Table 2. Relationship between the knowledge of pregnant women and the incidence of hypertension in pregnancy

Hypertension	Knowledge						Total		*P-value*
	Less		Enough		Good				
	F	%	F	%	F	%	F	%	
Mild	4	9.1	11	25	6	13.6	21	47.7	0,002
Severe	16	36.4	6	13.6	1	2.3	23	52.3	
Total	**20**	**45.5**	**17**	**38.6**	**7**	**15.9**	**44**	**100**	

Source :Primary Data 2024

Overall, the findings indicate that lower maternal knowledge is significantly associated with a higher incidence of severe hypertension during pregnancy.

Discussion

This research demonstrates a significant relationship between the level of knowledge among pregnant women and the incidence of hypertension in pregnancy (p = 0.002). The results show that respondents with less knowledge were more likely to experience severe hypertension, while those with good knowledge were more likely to have mild hypertension. These findings align with the proposed hypothesis and answer the primary

research question, confirming that knowledge is a critical factor associated with the severity of this condition. This result is consistent with previous research by Sunarsih (2016) in a primary health center in Bandar Lampung, which also found a significant relationship (p = 0.000) between maternal knowledge and the incidence of hypertension in pregnancy[10].

The findings of this research are in line with several prior studies. For instance, a study by Elisabeth Setiawati (2019) at Santa Anna Hospital in Kendari found that the majority of respondents with hypertension had a low level of knowledge (51.6%), which is similar to our finding of 45.5%[9]. Similarly, Sastri Rahayu et al. (2024) reported that a significant portion of their sample experienced severe hypertension (45.9%), comparable to our finding of 52.3%[11, 12]. The consistency of these results across different settings in Indonesia strengthens the argument that maternal knowledge is a universal and crucial determinant of pregnancy outcomes. However, some studies in developed countries might show different results, possibly due to better overall access to health information, higher educational attainment, and more robust healthcare systems that mitigate the impact of individual knowledge gaps.

The results of this study have direct implications for clinical practice and public health policy. For Bhakti Medicare Hospital and other healthcare facilities in Sukabumi, the findings highlight the urgent need to integrate structured, evidence-based educational programs into routine antenatal care. Midwives and nurses should be equipped to assess the knowledge level of pregnant women, particularly those at higher risk such as women with lower educational attainment or advanced maternal age, and provide tailored counseling accordingly. Practical strategies that can be implemented include mandatory short educational sessions during each antenatal visit focusing on the signs, risks, and management of hypertension; community-based outreach through partnerships with local health centers (posyandu) to reach pregnant women who may not regularly attend hospital-based services; and the development of user-friendly educational materials, such as brochures and short videos, in the local language. Collectively, these interventions are expected to empower women with the knowledge necessary for early detection and management of hypertension, thereby reducing the incidence of severe cases and preventing associated maternal and fetal complications[13,14].

The strength of this research lies in its clear focus on a relevant public health issue and the use of a standardized instrument that was tested for validity and reliability. The study successfully identified a significant relationship in a specific clinical context. However, this research has several limitations. First, the use of accidental sampling limits the representativeness of the sample and the generalizability of the findings to the broader population of pregnant women in Sukabumi or Indonesia. Second, the cross-sectional design prevents the establishment of a causal relationship; it only shows an association at a single point in time. Third, the study was conducted in a single hospital, which may not capture variations in practices or patient populations across different healthcare facilities. Finally, while knowledge was a key variable, other potential confounding factors such as dietary habits, family history of hypertension, and socioeconomic status were not measured.

Based on the findings and limitations identified, several recommendations for future research are proposed. Future studies should employ a longitudinal design to evaluate changes in knowledge and blood pressure over time, which could provide stronger evidence for causality. To improve generalizability, researchers should use probability sampling

methods, such as stratified random sampling, across multiple healthcare facilities in different regions. It is also recommended that future research include a broader range of variables, such as dietary patterns, family history, and health literacy levels, to build a more comprehensive model of the factors influencing hypertension in pregnancy. A qualitative component could also be added to gain deeper insights into the barriers and facilitators to acquiring and applying health knowledge among pregnant women.

Conclusion

The results of this study show that there is a significant relationship between the level of knowledge among pregnant women and the incidence of hypertension in pregnancy at Bhakti Medicare Hospital, Sukabumi. The majority of respondents with hypertension had a low level of knowledge and experienced a more severe form of the condition. These findings emphasize the critical role of health education as a foundational element in improving maternal health outcomes. The study suggests that targeted educational interventions, particularly for women with lower knowledge levels, are essential for the prevention and early management of hypertension in pregnancy. While limited by its cross-sectional design and sampling method, this research provides valuable context-specific evidence that can inform healthcare practices and policy at the local level and serve as a basis for more comprehensive future studies.

Acknowledgment

The authors would like to express their sincere gratitude to the Rector and Dean of the Faculty of Health, Universitas Muhammadiyah Sukabumi, for their support. We also thank the Director and Head of the Amarylis Room at Bhakti Medicare Hospital, Sukabumi, for granting permission to conduct this research. Our deepest appreciation goes to all the pregnant women who participated in this study for their time and willingness to share valuable information. This research was supported by the Internal Research Grant from the Faculty of Health, Universitas Muhammadiyah Sukabumi, 2024.

References

1. Mariani A, et al. Peran Edukasi Antenatal Care Dalam Meningkatkan Kesehatan Ibu Hamil di Puskesmas Kawatuna Palu. *Healthy Tadulako Journal* (*J Kesehat Tadulako)*. 2024;10(4):705-712.
2. Putri N tri, R R, Febrianti N, S S. Faktor-faktor yang Berhubungan dengan Kejadian Hipertensi pada Ibu Hamil. *An Idea Nurs J*. 2022;1(01):43-50. doi:10.53690/inj.v1i01.114
3. Sastri R, Haskas Y, Nani Hasanuddin S, Perintis Kemerdekaan VIII J, Makassar K. Hubungan Pengetahuan Dengan Kejadian Hipertensi pada Kehamilan di Wilayah Kerja Puskesmas Tamalanrea Jaya. *JIMPK J Ilm Mhs Penelit Keperawatan*. 2024;4:2024.
4. Anggreni D, Mail E, Adiesti F. *Bab 3 Hipertensi Dalam Kehamilan*.; 2018. http://ejournal.stikesmajapahit.ac.id/index.php/EBook/article/view/308/295
5. Agata AP. Pengelolaan Hipertensi Sebelum Kehamilan. *J Ilmu Medis Indones*. 2022;1(2):95-101. doi:10.35912/jimi.v1i2.951
6. Nur AF, Adhar A. Faktor Risiko Kejadian Preeklampsia Pada Ibu Hamil di RSU Anutapura Kota Palu. *Heal Tadulako J (Jurnal Kesehat Tadulako)*. 2017;7(2):52-58.
7. Susanto YPP. Analisis Faktor-Faktor Yang Mempengaruhi Hipertensi Gestasional Pada Ibu Hamil Di RSIA Masyita Kota

Makassar Tahun 2022. *J Kesehat Delima Pelamonia*. 2022;6(2):12-22. https://ojs.iikpelamonia.ac.id/index.php/delima/article/view/267/292

8. Widyasari, A & Alnur RD. Faktor-faktor Yang Berhubungan Dengan Kejadian Hipertensi Pada Ibu Hamil di Wilayah Kerja Puskesmas Tajurhalang Kabupaten Bogor Tahun 2023. *Pendidik Kesehat*. 2023;3(1):4-7. https://journal.stikespmc.ac.id/index.php/JK/article/view/8/2
9. DinkesKabSukabumi. Profil Kesehatan Kabupaten Sukabumi. *J GEEJ*. 2023;7(2).
10. Badariati B, Devi R, Khairiyah M. Faktor Determinan Pemilihan Tenaga Penolong Persalinan Di Kabupaten Sigi. *Heal Tadulako J (Jurnal Kesehat Tadulako)*. 2024;10(2):231-238. doi:10.22487/htj.v10i2.1086
11. Notoatmodjo S. Promosi Kesehatan Dan Perilaku Kesehatan. *PT. Rineka cipta*; 2018.
12. Kesumawati SAK, Mardiyono, Latifah L. Buku Panduan Akumoksa untuk Hipertensi dalam Kehamilan.pdf. *Buku Pandu Akumokosa Untuk Hipertens Dalam Kehamilan*. Published online 2020:4-5.
13. Erviana D. Determinan perilaku pencegahan covid 19 pada ibu hamil timester III. 2022;6(3):362-374.
14. Djufri Hildawati, Safitri devi A. Analysis Of Differences In Knowledge, Attitude And Actions About Pregnancy Danger Signs Following Pregnant Women Class And Do Not Follow Pregnant Women Classes In Konawe Islands District. *Heal Tadulako J (Jurnal Kesehat Tadulako)*. 2023;9(3):340-346.