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The Relationship Between the Behaviour of Pregnant Women in Recognising Pregnancy Hypertension and Preeclampsia Incidence in Medan Community Health Centre

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ABSTRACT
Preeclampsia is a condition with increased blood pressure in pregnant women that occurs after 20 weeks of gestation. Maternal behaviour in pregnancy care is important to study to prevent the risk of preeclampsia, such as knowledge, attitudes and actions. This study aims to identify the relationship between the behaviour of pregnant women in knowing hypertension with the incidence of eclampsia in pregnant women in the working area of Puskesmas Kampung Baru Medan. A quantitative, descriptive-correlational design was employed using a cross-sectional approach. Data were analyzed using frequency distribution and percentage tables. The data in this study are presented in the form of frequency distribution tables and percentages. The findings revealed that the majority of respondents demonstrated adequate knowledge (55%), positive attitudes (62.5%), and appropriate preventive actions (82%). A moderately strong correlation was found between maternal knowledge and the incidence of preeclampsia ($p = 0.00$; $r = 0.398$). However, no significant associations were observed between attitudes ($p = 0.204$) or preventive actions ($p = 0.117$) and preeclampsia occurrence These results underscore the need to enhance maternal knowledge regarding pregnancy-related hypertension to effectively prevent preeclampsia.

Keyword: Preeclampsia, Behaviour, Care, Pregnancy

1. Introduction

Pregnancy-induced hypertension (PIH) remains one of the leading causes of maternal and perinatal morbidity and mortality worldwide. Among its most severe complications is pre-eclampsia, which is characterized by elevated blood pressure, edema, and proteinuria occurring after 20 weeks of gestation (Brown et al., 2018). If not managed appropriately, pre-eclampsia can progress to eclampsia, a condition involving seizures and coma, posing severe risks to both mother and fetus (Febyan & Bagus, 2020). Globally, pre-eclampsia affects approximately 5–8% of all pregnancies and contributes to 10–15% of maternal deaths, with higher prevalence in low- and middle-income countries. In Indonesia, PIH is the second leading cause of maternal death, after postpartum hemorage. Data from the Indonesian Ministry of Health (2019) indicate an increase in PIH cases from 1,066 in 2019 to 1,110 in 2020, highlighting the persistent public health burden.

According to the 2024 Health Profile of Medan City, the maternal mortality rate was 6 per 100,000 live births, with pre-eclampsia identified as one of the primary causes. Several risk factors have been associated with the development of PIH, including maternal age, parity, nutritional status, and a history of chronic

hypertension (Prawirohardjo, 2009). A study conducted in North Sumatra reported that 12.7% of pregnant women experienced hypertension, with some having been previously diagnosed (Sirait, 2012). Age was also found to be a predictive factor, with the highest prevalence among women over 35 years old (Langelo et al., 2012).Maternal behavior plays a crucial role in the early detection and management of pregnancy complications, including PIH. Awareness, knowledge, and proactive health-seeking behaviors significantly influence whether adherence to antenatal care schedules and undergoes essential laboratory tests, such as urine protein analysis, blood pressure monitoring, and blood glucose checks (Kharbuja et al., 2021). A study in India found that knowledge of pre-eclampsia symptoms significantly affected the likelihood of seeking timely medical assistance (Kaur et al., 2019). In the Indonesia context, a lack of knowledge and negative attitudes toward maternal health have been shown to delayed interventions and adverse pregnancy outcomes (Pertiwi et al., 2020).

This study aims to investigate explore the behavior of pregnant women in Simonis Village in recognizing pregnancy-induced hypertension. Understanding maternal behavior—which encompasses knowledge, attitudes, and actions—toward PIH is essential for improving antenatal care compliance and the early identification of pre-eclampsia, ultimately reducing maternal mortality.

2. Methods

This type of research is a quantitative approach research using a descriptive correlational design with through a cross-sectional methodology. This study was conducted in the Kampung Baru Community Health Center area, involving 40 respondents who were pregnant women. The purpose of this study was to examine the relationship between the behaviour of pregnant women and the incidence of preeclampsia. Data collection was conducted using demographic questionnaires and behavioral questionnaires (knowledge, attitudes, and actions) for pregnant women. This study has been approved by the USU Ethics Committee for ethical considerations with the number 794/KEPK/USU/2025.Data were analyzed and presented in the form of frequency distribution tables and percentages to describe respondent characteristics and behavioral patterns.

3. Results

The demographic characteristics of pregnant women in Simonis Village revealed several notable patterns related to their recognition of pregnancy-induced hypertension. The majority of respondents were aged 20–25 years (n = 15; 37.5%), and most were unemployed (n = 30; 75.0%). A significant proportion of participants were in their first to third pregnancies (n = 33; 82.5%), with the most common gestational age ranging from 21 to 28 weeks (n = 11; 27.5%). Half of the respondents (n = 20; 50.0%) reported having family members with a history of hypertension. Blood pressure measurements among participants ranged from 90 to 120 mmHg in 22 individuals (55.0%). In terms of anthropometric data, 17 respondents (42.5%) weighed between 61 and 70 kg, while 23 (57.5%) had a height between 151 and 160 cm. Additionally, 22 participants (55.0%) reported a personal history of hypertension. Regarding educational background, the highest level attained by most respondents was senior high school (n = 18; 45.0%).

Table 1 Frequency distribution of respondent characteristics (n=40)

Respondent Characteristics	Frequency (f)	Percentage (%)
Pregnant Mother's Age (year)		
20-25	15	37.5
26-30	12	30.0
31-35	9	22.5
36-40	4	10.0
Work		
Private	8	20.0
Civil Servants	2	5.0
Housewife	30	75.0
Gravida		
1-3	33	82.5
4-6	6	15.0
7-10	1	2.5
Gestational Age (week)		
8-12	8	20.0
16-20	11	27.5

Table 1 Continued

Respondent Characteristics	Frequency (f)	Percentage (%)
21-28	11	27.5
30-35	5	12.5
36-39	5	12.5
Family's History of Hipertension		
There is	20	50.0
There isn't any	20	50.0
Blood pressure (mmHg)		
90-120	22	55.0
130-150	18	45.0
Weight (kg)		
50-60	9	22.5
61-70	17	42.5
71-80	9	22.5
81-90	5	12.5
Height (cm)		
140-150	14	35.0
151-160	23	57.5
161-170	3	7.5
Personal History of hypertension		
Never	12	30.0
Once	22	55.0
Don't know	6	15.0
Educational Background		
College	14	35.0
Senior High School	18	45.0
Junior High School	5	12.5
Elementary School	3	7.5
Total	40	100

The assessment of pregnant women's knowledge regarding pregnancy-induced hypertension was categorized into three levels: good, sufficient, and poor. Among the 40 respondents, the majority demonstrated sufficient knowledge (n = 25; 62.5%), followed by those with good knowledge (n = 10; 25.0%), and poor knowledge (n = 5; 12.5%).

Table 2 Frequency distribution and percentage of pregnant women's knowledge in recognizing pregnancy induced hypertension at the Kampung Baru Community Health Center (n=40)

Category	Frequency (f)	Percentage(%)
Good	12	30
Sufficient	22	55
Poor	6	15
Total	40	100

The assessment of pregnant women's attitudes toward pregnancy-induced hypertension was categorized into two groups: positive and negative. Among the 40 respondents, the majority exhibited positive attitudes (n = 25; 62.5%), while the remaining 15 respondents (37.5%) demonstrated negative attitudes.

Table 3 Frequency distribution and percentage of pregnant women's attitudes in recognizing pregnancy hypertension at the Kampung Baru Community Health Center (n=40)

Category	Frequency (f)	Percentage(%)
Positive	25	62.5
Negative	15	37.5
Total	40	100

The results of this study show that the attitudes of pregnant women towards recognising pregnancy-induced hypertension based on two categories, which are in accordance with positive and negative attitudes showed most of them are with positive which 62.5%

Table 4 Distribution of frequency and percentage of pregnant women's skills in recognizing preeclampsia hypertension at Kampung Baru Community Health Center (n=40).

Category	Frequency (f)	Percentage(%)
Yes (Health-Aligned)	7	17.5
No (Not Health-Aligned)	33	82.5
Total	40	100

The results of this study show that the skills of pregnant women towards recognising pregnancy-induced hypertension based on two categories, which are health-aligned (Yes) and not health-aligned (No),showed that 82.5% were not in accordance with health.

Table 5 The Relationship between Level of Knowledge and the Incidence of Preeclampsia in Pregnant Women inArea of Kampung Baru Medan Health Center

Preeclampsia Status	Knowledge						Total		P Value	r
	Good		Suffiicent		Poor					
	f	%	f	%	f	%	N	%	0.000	0.398
Not Preeclampsia	10	32.25%	20	64.51%	1	3.22%	31	100%		
Preeclampsia	2	22.22%	2	22.22%	5	55.55%	9	100%		
Total	12	30%	22	55%	6	15%	40	100%		

Statistical analysis revealed a significant relationship between maternal knowledge and the incidence of preeclampsia, with a p-value of 0.000 and a correlation coefficient (r) of 0.398, indicating a moderately strong association. These findings suggest that higher levels of maternal knowledge are associated with a lower risk of developing preeclampsia

Table 6 The Relationship between Attitude and the Incidence of Preeclampsia in Pregnant Women inArea of Kampung Baru Medan Health Center

Preeclampsia Status	Attitude				Total		P Value
	Positive		Negative				0.204
	f	%	f	%	N	%	
Not Preeclampsia	21	67.74%	10	32.25%	31	100%	
Preeclampsia	4	44.44%	5	55.55%	9	100%	
Total	25	62.5%	15	37.5%	40	100%	

From the table above, it can be concluded that there is no relationship between pregnant women's attitudes towards the occurrence of preeclampsia. Data shows that pregnant women with and without preeclampsia have a majority of positive attitudes. A p-value of 0.204 was found, indicating no relationship because the value is greater than 0.05.

Table 7 Relationship between Actions and the Incidence of Preeclampsia in Pregnant Women inArea of Kampung Baru Medan Health Center

Preeclampsia Status	Action				Total	P Value
	In accordance		It is not in accordance with			0.117
	f	%	f	%	%	
Not Preeclampsia	7	22.58%	24	77.41%	100%	
Preeclampsia	0	0%	9	100%	100%	
Total	7	22.58%	33	82.52%	100%	

The table above shows that maternal interventions do not affect the incidence of preeclampsia, as both patients with and without preeclampsia underwent interventions that did not meet health standards. Statistical analysis yielded a p-value of 0.117, which exceeds the conventional significance threshold of 0.05. This result

suggests that there is no statistically significant correlation between maternal interventions and the occurrence of preeclampsia in this population.

4. Discussion

The findings of this study indicate that 82.5% of the respondents were in the early stages of pregnancy, specifically within the first trimester. This period is critical for disseminating essential health information, particularly regarding pregnancy-induced hypertension (PIH), which has been consistently linked to adverse maternal and fetal outcomes (Smith et al., 2020). Given that early-stage pregnant women frequently need education and support to manage the risks associated with hypertension during pregnancy, early intervention and knowledge are essential to improving pregnancy outcomes (Johnson & Lee, 2019).

Half of the participants reported a family history of hypertension, and 55% were diagnosed with hypertension themselves. These findings align with previous studies that underscore the genetic predisposition to hypertensive disorders in pregnancy (Brown et al., 2018). Given that family history is known to be a substantial risk factor for PIH, screening and targeted education for women at higher risk are crucial (Taylor et al., 2022).

Regarding maternal knowledge, 55% of respondents demonstrated an adequate understanding of hypertension during pregnancy. This result is consistent with prior research indicating that while general awareness of PIH exists, gaps remain in comprehensive knowledge—particularly concerning risk factors and preventive strategies (Hernandez et al., 2020; Gupta & Kumar, 2017). Furthermore, the study revealed that 62.5% of participants held positive attitudes toward managing hypertension, reinforcing the notion that favorable perceptions are instrumental in promoting adherence to antenatal care and preventive measures (Ahmed & Hassan, 2019).

The study discovered that 82.5% of pregnant women's activities linked to hypertension did not fulfil health criteria, despite having sufficient knowledge and having positive attitudes. This suggests a disconnect between knowledge and practice. This mismatch is in line with the health beahaviour theory , which highlight that without enabling element like social support and acces to healthecare facilities, knowledge alone does not necesserilly convert into good health behaviots (Bandura, 1997; Kumar et al., 2020)

Similar to this, research by (Lopez & Martinez, 2018) and (Chen et al., 2019) shows that obstacles

including socioeconomic position, cultural views, and healthcare infrastructure can make it difficult for expectant mothers to convert their knowledge into healthy behaviors.In order to reduce the risks of preeclampsia, a leading cause of maternal and neonatal morbdity and mortality globally, it is essential to have sufficient knowledge in order to recognize warning signs early and adhere to preventative measures (World Health Organization, 2019).

The study's findings highlight the need fall encompassing educational initiatives meant to enhance expectant mother's awareness and perspectives regarding hypertension during pregnancy. Early in pregnancy is the ideal time to start these intervention about give them more education which should be designed to overcome the risk of preeklampsia. Healthcare professionals can effectively prevent and manage PIH and its complication by increasing knowledge and encouraging health promoting habits which will ultimately improve the health of mother so that decreasing the maternall risk and healthy for newborn.

5. Conclusion

Preeclampsia in pregnant women is a critical issue that must be addressed to prevent its occurrence the behaviour of pregnant women, particularly their knowledge about pregnancy-induced hypertension—a key trigger for preeclampsia—is especially important for women in their first trimester of pregnancy and those with a family history of hypertension. Increased knowledge will also improve the behaviour of pregnant women, there by preventing preeclampsia. This means that the role of healthcare professionals is essential in this situation.

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