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Description of Maternal Age, Parity, and History of Hypertension with the Incidence of Preeclampsia in Pregnant Women at Cibeber Public Health Center in 2024

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ABSTRACT

The maternal mortality rate remains a priority issue in the health sector, particularly in maternal and child health. Maternal health is a crucial matter for a nation, as the health status of a country can be measured by its Maternal Mortality Ratio (MMR). Based on data obtained from Cibeber Public Health Center, 60 cases of preeclampsia were still found. Risk factors for preeclampsia include primigravida, high-risk age (<20 years old or >35 years old), and a history of preeclampsia/eclamps. This study aims to determine the description of maternal age, parity, and history of hypertension associated with preeclampsia in pregnancy at Cibeber Public Health Center in 2024. This research uses a quantitative observational method with a cross-sectional approach. The sample in this study consisted of 92 pregnant women, obtained using total sampling. Data collection was carried out using the Maternal and Child Health (KIA) register book. This study showed that 27 pregnant women (29.3%) experienced preeclampsia. The number of pregnant women aged <20 years and >30 years was 48 (52.2%), while those aged 20-35 years were 44 (47.8%). Pregnant women with parity ≤1 or >4 numbered 48 (52.2%), and those with parity 2-4 numbered 44 (47.8%). Pregnant women with a history of hypertension numbered 42 (45.7%), and those without a history of hypertension numbered 50 (54.3%). It is hoped that the results of this study can be used as a learning resource for future researchers to understand more clearly the variables studied. Future researchers are also encouraged to investigate variables not covered in this study in different locations.

Keywords: history of hypertension, maternal age, parity, preeclampsia

BACKGROUND

Maternal mortality remains a critical priority in the health sector, particularly for maternal and child health, as it is a key indicator of a nation's overall health status. In Indonesia, maternal deaths are primarily caused by direct obstetric complications such as hemorrhage, preeclampsia, and abortion. This is reflected in the national data and is especially evident in Banten Province, which has one of the highest maternal mortality rates in the country. Within Banten, Serang Regency is a significant contributor to these distressing figures.

Preeclampsia is a major factor in this public health crisis. While national hospital data may underreport the incidence, estimates suggest it affects a vast number of pregnancies

annually. Research indicates that certain maternal characteristics significantly increase the risk of developing preeclampsia. Key risk factors include advanced or very young maternal age, and problematic parity—specifically being a primipara (first birth) or a grand multipara (having given birth five or more times). A history of chronic hypertension also substantially elevates a woman's risk for this condition.

This study is motivated by a notable increase in preeclampsia cases at Cibeber Public Health Center in Serang, Banten, which rose from 20 cases in 2023 to 60 cases in 2024. Given the high local mortality rate and the established link between maternal factors and preeclampsia, this research aims to investigate the specific description of maternal age and parity in relation to the incidence of preeclampsia among pregnant women at Cibeber Public Health Center in 2024.

METHODS

This study employs a descriptive research design, which aims to accurately describe and explain the characteristics of a specific phenomenon or problem. The objective is to present facts clearly, understand what is occurring, and elucidate how it is happening. Descriptive research is chosen as the method because the primary goal is to objectively describe or explain existing conditions. In this context, the study seeks to assess the level of knowledge about preeclampsia among pregnant women.

The population of this research consists of all 1,184 pregnant women who visited the Cibeber Public Health Center between January and December 2024. Using Slovin's formula with a 10% margin of error, the sample size was calculated to be 92 respondents. Non-probability consecutive sampling was applied, and data were systematically collected from the Maternal and Child Health (KIA) register book. This sampling method ensured that the study included participants who met the inclusion and exclusion criteria, facilitating easier data processing and more reliable results.

Data were gathered using secondary sources from the KIA register book, focusing on records of pregnant women with high blood pressure or preeclampsia. The data underwent a structured processing workflow including editing, coding, and tabulation to ensure accuracy and clarity. Univariate analysis was then used to examine the frequency distributions of key variables maternal age, parity, and the incidence of preeclampsia enabling a clear.

RESULTS

This research was conducted in 2025 utilizing secondary data from the year 2024. The data were obtained from the K1 (First Antenatal Visit) register of pregnant women with gestational ages greater than 20 weeks at the Cibeber Public Health Center. The total sample size for this study consisted of 1,184 individuals, and the results achieved were based on the analysis of this complete sample dataset.

Table 1. Frequency Distribution of Preeclampsia Incidence in Pregnant Women at Cibeber Public Health Center, 2024

Preeclampsia Incidence	Frequency	%
Preeclampsia	27	29.3%
No Preeclampsia	65	70.7%

Preeclampsia Incidence	Frequency	%
Total	**92**	**100%**

Based on Table 1, it shows that 27 pregnant women (29.3%) experienced preeclampsia.

Table 2. Frequency Distribution of Maternal Age at Cibeber Public Health Center, 2024

Maternal Age	Frequency	%
<20 years and >35 years	48	52.2%
20-35 years	44	47.8%
Total	**92**	**100%**

Based on Table 2, it shows that more than half of the pregnant women were in the high-risk age group (<20 and >35 years), totaling 48 women (52.2%).

Table 3. Frequency Distribution of Parity in Pregnant Women at Cibeber Public Health Center, 2024

Parity	Frequency	%
≤1 or >4	48	52.2%
2-4 times	44	47.8%
Total	**92**	**100%**

Based on Table 3, it shows that the majority of pregnant women had high-risk parity (≤1 or >4), totaling 48 women (52.2%).

Table 4. Frequency Distribution of History of Hypertension in Pregnant Women at Cibeber Public Health Center, 2024

History of Hypertension	Frequency	%
Yes	42	45.7%
No	50	54.3%
Total	**92**	**100%**

Based on Table 4, it shows that 42 pregnant women (45.7%) had a history of hypertension.

Table 5. Frequency Distribution of Preeclampsia Incidence by Maternal Age at Cibeber Public Health Center, 2024

Maternal Age	Preeclampsia		No Preeclampsia		Total Respondents	
	n	%	n	%	n	%
<20 and >35 years	24	54.5%	20	41.7%	44	47.8%
20-35 years	20	45.5%	28	58.3%8	4	52.2%
Total	**44**	**100%**	**48**	**100%**	**92**	**100%**

Based on Table 5.2.5, it shows that a higher proportion of respondents in the high-risk age group (<20 and >35 years) experienced preeclampsia (24 respondents, 54.5%) compared to those in the normal age group (20-35 years, 20 respondents, 45.5%).

Table 6. Frequency Distribution of Preeclampsia Incidence by Parity at Cibeber Public Health Center, 2024

Parity	Preeclampsia		No Preeclampsia		Total Respondents	
	n	%	n	%	n	%
≤1 or >4	28	58.3%	9	20.4%	37	40.2%
2-4 times	20	41.7%	35	79.6%	55	59.8%
Total	**48**	**100%**	**44**	**100%**	**92**	**100%**

Based on Table 6, it shows that a higher proportion of respondents with high-risk parity (≤1 or >4) experienced preeclampsia (28 respondents, 58.3%) compared to those with normal parity (2-4 times, 20 respondents, 41.7%).

Table 7. Frequency Distribution of Preeclampsia Incidence Based on History of Hypertension in Pregnant Women at Cibeber Public Health Center, 2024

History of Hypertension	Preeclampsia		No Preeclampsia		Total Respondents	
	n	%	n	%	n	%

History of Hypertension	Preeclampsia		No Preeclampsia		Total Respondents	
Yes	25	59.0%	21	42.0%	46	50.0%
No	17	40.4%	29	58.0%	46	50.0%
Total	**42**	**100%**	**50**	**100%**	**92**	**100%**

Based on Table 7, it shows that a higher proportion of respondents with a history of hypertension experienced preeclampsia (25 respondents, 59.0%) compared to those without a history (17 respondents, 40.4%). This indicates that a history of hypertension is associated with a greater incidence of preeclampsia.

DISCUSSION

Frequency Distribution of Preeclampsia Incidence Based on Maternal Age at Cibeber Public Health Center, 2024

Based on the results in Table 1, it was found that 27 pregnant women (29.3%) had preeclampsia. It can be concluded from the author's research that several of the pregnant women studied experienced preeclampsia during their pregnancy. Preeclampsia is a disorder characterized by hypertension, edema, and proteinuria due to pregnancy after 20 weeks of gestation or immediately after delivery (Amalina, 2022). Andriani (2022) states that one of the predisposing factors for preeclampsia in pregnant women is maternal age.

Based on Table 5, it shows that the proportion of respondents aged <20 years and >35 years who experienced preeclampsia was 24 respondents (54.5%), while the proportion of respondents aged 20-35 years who experienced preeclampsia was 20 people (45.4%). Thus, the proportion of those under 20 and over 35 years old was higher in experiencing preeclampsia.

It can be concluded from the author's research that pregnant women aged <20 and >35 years experienced hypertension more frequently than pregnant women aged 20-35 years. This is in line with research from (Komalasari, 2021), whose results showed that out of 42 high-risk age mothers, 31 (73.8%) experienced preeclampsia and 11 (26.2%) did not. Out of 183 low-risk age mothers, 77 (42.1%) experienced preeclampsia and 106 (57.9%) did not.

This is consistent with the research of (Andi, 2022), which states that the non-risk pregnancy age is between 20-35 years. This age range is a safe reproductive age for pregnancy due to fewer complications, whereas maternal age under 20 or over 35 years is a risk-prone age because the incidence of complications increases at these ages. The majority (63%) of pregnant women over 35 years old experienced preeclampsia. Pregnancy in women under 20 or over 35 is less ideal for conceiving and giving birth due to the high risk of miscarriage, delivery failure, and even maternal mortality.

Frequency Distribution of Preeclampsia Incidence Based on Parity at Cibeber Public Health Center, 2024

Furthermore, Sukma (2021) states that parity one and high parity (≤1 and >4) are risk factors for preeclampsia.

Based on Table 5.2.6, it shows that the proportion of respondents with parity ≤1 or >4 who experienced preeclampsia was 28 people (58.3%), while the proportion of respondents with parity 2-4 times who experienced preeclampsia was 20 people (41%). Thus, the proportion with parity ≤1 or >4 was higher in experiencing preeclampsia.

can be concluded from the author's research that pregnant women with parity ≤1 or >4 experienced preeclampsia more often than pregnant women with parity 2-4 times.

This is in line with research by (Pisca,2022), which found a relationship between parity and the incidence of preeclampsia in pregnant women (p-value = 0.002). This study stated that there is a relationship between parity and the incidence of preeclampsia in pregnant women, with the majority of pregnant women with preeclampsia having high parity (76.9%).

This aligns with the theory of (Dini, 2020), which states that parity 2-4 is the safest in terms of maternal mortality cases. First parity is associated with a lack of experience and knowledge in pregnancy care. Parity 2-3 is the safest. Parity one and high parity (≤1 and >4) are risk factors for preeclampsia. Women with high parity (more than 4) have experienced a decline in reproductive system function. Furthermore, they are often too busy with household chores, leading to frequent fatigue and lack of attention to nutritional fulfillment. Pregnant women with multiparous status have a 1.8 times higher risk of experiencing more severe preeclampsia compared to pregnant women in other parity categories.

Frequency Distribution of Preeclampsia Incidence Based on History of Hypertension at Cibeber Public Health Center, 2024

Pregnant women with a history of hypertension who experience preeclampsia are at higher risk than those without a history of hypertension (Lalenoh, 2021).

Based on Table 7, it shows that the proportion of respondents with a history of hypertension who experienced preeclampsia was 25 people (59%), while the proportion of respondents without a history of hypertension who experienced preeclampsia was 17 people (40.4%). Thus, the proportion with a history of hypertension was higher in experiencing preeclampsia.

It can be concluded from the author's research that pregnant women with a history of hypertension experienced preeclampsia more often than those without a history of hypertension.

This is in line with research by (Insani, 2020), which found that out of 19 respondents with a history of hypertension, 10 (52.6%) experienced preeclampsia, compared to 7 out of 76 respondents (9.2%) without a history of hypertension who experienced it. A Chi-Square statistical test at a significance level of $\alpha = 0.05$ obtained a p-value = 0.000, meaning there is a relationship between a history of hypertension and the incidence of preeclampsia, thus proving the hypothesis statistically.

This aligns with the theory from (Andani, 2022) and (Budi, 2023). A history of hypertension carries a 6.42 times higher risk of preeclampsia compared to pregnant women without such a history. High blood pressure in pregnant women has varying impacts, from mild to severe preeclampsia. Hypertension in pregnancy is divided into mild preeclampsia, severe preeclampsia, eclampsia, and superimposed hypertension (pregnant women who had hypertension before pregnancy and it continues during pregnancy). The most frequent complication in pregnancy for women with chronic hypertension is preeclampsia; one study of 763 women with chronic hypertension reported that 25% experienced preeclampsia.

CONCLUSION

Based on the research findings on the description of maternal age, parity, and history of hypertension with the incidence of preeclampsia in pregnant women at Cibeber Public Health Center in 2024, it can be concluded as follows:

1. The incidence of preeclampsia among pregnant women was 27 cases (29.3%).
2. The proportion of pregnant women in the high-risk age group (<20 and >35 years) who experienced preeclampsia (24 women, 54.5%) was higher than those in the normal age group (20-35 years, 20 women, 45.4%).
3. The proportion of pregnant women with high-risk parity (≤1 or >4) who experienced preeclampsia (28 women, 58.3%) was higher than those with normal parity (2-4 times, 20 women, 41%).
4. A significant number of pregnant women (42 women, 45.7%) had a history of hypertension, which is a major risk factor.

Suggestions

1. **For Health Services (Cibeber Public Health Center):** It is recommended to maintain the quality of service in accordance with standards, including rapid and precise management of preeclampsia cases to minimize complications in pregnant women.
2. **For Educational Institutions:** This scientific paper should be well-studied and documented to serve as a reference source for future research.
3. **For Researchers:** Future researchers are encouraged to use these findings as a learning tool to deepen knowledge about preeclampsia and to investigate other variables not covered in this study in different locations.
4. **For Pregnant Women:** It is advised to avoid pregnancy at high-risk ages (<20 and >35 years), limit the number of children to avoid high-risk parity (≤1 or >4), and attend routine antenatal care (ANC) check-ups, especially for those with a history of hypertension, for early detection of preeclampsia risk factors.

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