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Relationship of Age, Body Mass Index, and Gravida in Pregnant Women with Preeclampsia in Muhammadiyah Hospital Surabaya

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ABSTRACT

Background/aim: Preeclampsia is one of the causes of increased maternal mortality. The rate in East Java Province reached 91 per 100,000 live births. The highest cause of maternal death in 2016 was preeclampsia/eclampsia, which was 30.90% or 165 people. This study aims to determine the relationship of age, body mass index (BMI), and gravida to pregnant women who have preeclampsia at Muhammadiyah Hospital in Surabaya. Materials and Methods: This case-control study uses a total sampling obtained 210 pregnant women, as many as 105 preeclampsia pregnant women and 105 normal pregnant women. Results: The results of bivariate statistical tests found that age, BMI is a risk factor for the incidence of preeclampsia (p: 0.039; p: 0.002), and gravida has no relationship (p: 0.410). Differ with the multivariate test; there was an influence of age 36-45 years on the incidence of preeclampsia with a risk of 4.060 times compared to the age of 20-35 years, obese affected with a risk of 4.696 times compared to a healthy weight and gravida influencing with a risk of 2,099 times experiencing preeclampsia. Conclusion: There is a relationship between age, BMI, and gravida in preeclampsia at Muhammadiyah Hospital in Surabaya.

Keywords: *Preeclampsia, Pregnant women, Age, BMI, Gravida*

1. INTRODUCTION

Hypertension disorders in pregnancy are the most critical problems faced by public health because they are the leading cause of maternal and child morbidity and mortality. Based on WHO data, it is estimated that every day around 830 pregnant women die worldwide. Various complications at the time of delivery and high maternal mortality rates can illustrate the quality of health care in both developing and developed countries. Approximately 75% of maternal deaths occur due to the emergence of a complication faced by the mother during pregnancy/childbirth, the complications in question namely: hypertension in pregnancy, bleeding, infection, and also complications due to unsafe abortion labor. Therefore maternal death can be prevented by skilled health care. Like preeclampsia, it is recommended to give magnesium sulfate drugs to prevent eclampsia [1].

In 2016, the maternal mortality rate of East Java Province reached 91 per 100,000 live births. This figure has increased compared to 2015, which reached 89.6 per 100,000 live births. The highest cause of maternal death in 2016 was preeclampsia/eclampsia, which was 30.90% or as many as 165 people. While the smallest cause is an infection by 4.87% or as many as 26 people, bleeding by 24.72%, and other causes by 28.65%. Preeclampsia/eclampsia is one of the leading causes of maternal death and tends to increase in the last three years [2].

Approximately 10% of women worldwide are affected by hypertension disorders in pregnancy and hypertension groups in pregnancy, which are intended, namely: gestational hypertension, preeclampsia, eclampsia, and chronic hypertension. This disease can cause death in both the mother and the baby. Therefore health workers optimize care and treatment of women who have hypertension in pregnancy [1].

According to previous studies, there is a relationship between age, body mass index (BMI), parity in the occurrence of hypertension in pregnancy [3], as for the risk factors that can be grouped into several risk factors as follows: primigravida, primipaternitas, hyperplacentosis, extreme age, family history ever preeclampsia/eclampsia, kidney disease and pre-existing hypertension and obesity [4]. Increasing body mass index (BMI) is positively associated with an increased risk of PE. Women with a prepregnancy BMI of 35 kg/m^2 or above have a 30% increased risk of developing PE[5].

The rate of maternal mortality is still a complicated issue, with hypertension in pregnancy being one of the fundamental causes. The age of marriage is growing in current circumstances; the pattern of life is entirely immediate, thereby increasing the incidence of obesity and the propensity to reduce the number of deliveries. The researchers plan to investigate risk factors that may worsen the occurrence of preeclampsia under these conditions.

2. MATERIALS AND METHODS

This research is an observational analysis. The type of research uses a case-control study. The population taken was all pregnant women patients who had been diagnosed with preeclampsia at Muhammadiyah Hospital Surabaya from January 2016 - December 2019.

The independent variables in this study were: age, BMI (body mass index), and gravida. The age was differentiated into 16-19 y.o, 20-35 y.o, and 36-45 y.o. BMT was categorized as normal weight (18.5-24.9 kg/m2), overweight (25.0-29.9 kg/m2), and obese (≥ 30.0 kg/m2). Gravida was divided into primigravida, multigravida, and grand multigravida. At the same time, the dependent variable is preeclampsia (hypertension in pregnancy, along with proteinuria).

Inclusion criteria for the case group in this study are pregnant women patients with a diagnosis of preeclampsia, maternal age 16-45 years, 20-42 weeks gestational age. Sedangkan Inclusion criteria for the control group are the normotensive match pregnancy. These patients have complete medical record data, single pregnancy, and trimesters II and III. While the exclusion criteria in this study are patients who do not have a complete medical record, patients with gestational diabetes, multifetus pregnancy, have previous vascular disease, kidney disease, mothers with a history of diabetes mellitus, and history of smoking. The minimum size of the research sample is 70 people using the Lemeshow sample size formula.

3. RESULT

The pregnant women who suffer from preeclampsia in the period of 3 years from 2016 to 20for 19 recorded at Medical Record at Muhammadiyah Hospital Surabaya. The sum is 172 people, 67 people were included in the exclusion criteria, so this study used a sample of 105 preeclampsia pregnant women and added 105 normal pregnant women in the same period.

3.1. Univariate Analysis

Distribution of Pregnant Women's Age, BMI, and Gravida

3.1.1. The Proportion of Pregnant Women Based on Mother's Age at the Muhammadiyah Hospital Surabaya

Table 1: Distribution of pregnant women's age

Age	Frequence	%
16-19 years old	19	9
20-35years old	152	72,4
36-45 years old	39	18,6
Total	210	100

The majority of pregnant women aged 20-35 years, amounting to 152 people (72.4%), 39 people (18.6%) aged 36-45 years, and the smallest number of pregnant women were vulnerable aged 16-19 years as many as 19 people (9%).

3.1.2. The Proportion of Pregnant Women Based on BMI at the Muhammadiyah Hospital Surabaya

Table 2: Distribution of pregnant women's BMI

BMI	Frequence	%
Normalweight	37	17,6
Overweight	113	53,8
Obese	60	28,6
Total	210	100

Pregnant women in this study, their BMI is mostly at the level of overweight (18.5-24.9) as many as 113 people (53.8%), and pregnant women who obese are 60 people (28.6 %).

3.1.3. The Proportion of Pregnant Women Based on Gravida at the Muhammadiyah Hospital Surabaya

Table 3: Distribution of pregnant women's gravida

Gravida	Frequence	%
Primigravida	77	36,7
Multigravida	111	52,9
Grande Multigravida	22	10,5
Total	210	100

The data in Table 3 shows that pregnant women, mostly 111 people (52.9%), are multigravida.

3.2. Bivariate analysis

3.2.1. Relationship between Pregnant Women's Age and the Incidence of Preeclampsia at the Muhammadiyah Hospital Surabaya

Table 4: Relationship between pregnant women's age and the incidence of preeclampsia

Age	Preeclampsia				Correlation coefficient	p-value
	Yes		No			
	N	%	N	%		
16-19 y.o	11	10,5	8	7,6	0,173	0,039
20-35 y.o	68	64,8	84	80		
36-45 y.o	26	24,8	13	12,4		
Total	105	100	105	100		
Contingency Coefficient Correlation Test						

Based on Table 4, the results of the analysis of the relationship of age with the incidence of preeclampsia were obtained by 210 pregnant women who examined 105 patients

who had preeclampsia, including 37 people (35.3%) aged 16-19 and 36-45 years which is the age at risk of preeclampsia. Statistical test results obtained a p-value of 0.039 <0.05, which shows that there is a relationship between age and the incidence of preeclampsia.

3.2.2. *Relationship Between BMI and the Incidence of Preeclampsia at the Muhammadiyah Hospital Surabaya*

Table 5: Relationship between pregnant women's BMI and the incidence of preeclampsia

BMI	Preeclampsia				Correlation coefficient	p-value
	Yes		No			
	N	%	n	%		
Normalweight	13	12,4	24	22,9		
Overweight	51	48,6	62	59	0,236	0,002
Obese	41	39	19	18,1		
Total	105	100	105	100		
Contingency Coefficient Correlation Test						

Based on table 5, the results of the analysis of the relationship between BMI with the incidence of preeclampsia show that of the 105 pregnant women who experienced preeclampsia, which the BMI with had overweight and obese BMI was 87,6%. The results of statistical tests, the value of the p-value, are 0.002 <0.05, which shows there is a significant relationship.

3.2.3. *Relationship between pregnant women's gravida and the incidence of preeclampsia at Muhammadiyah Hospital Surabaya*

Table 6: Relationship between pregnant women's gravida and the incidence of preeclampsia

Gravida	Preeclampsia				Correlation coefficient	p-value
	Yes		No			
	N	%	n	%		
Primigravida	43	41	34	32,4	0,092	0,410
Multigravida	51	48,6	60	57,1		
Grandemulti Gravida	11	10,5	11	10,5		
Total	105	100	105	100		
Contingency Coefficient Correlation Test						

From Table 6, it can be seen that patients suffering from preeclampsia of 105 people are 43 (41%) pregnant women with a primigravida; the most are multigravida with preeclampsia, which is 51 (48.6%) people. In contrast, grand multigravida with preeclampsia is 11 (10.5%) people. Statistical test results obtained p-value 0.410> 0.05. This means that H0 is accepted, and H1 is rejected. This shows that there is no significant relationship between gravida risk factors for the incidence of preeclampsia in Muhammadiyah Hospital Surabaya.

3.3. *Multivariate Analysis*

Based on the results of the logistic regression test in table 7, it was found that the age of 36-45 years affected the incidence of preeclampsia with a p-value: 0.003 <0.05, age 36-45 years risk of 4.060 times experiencing preeclampsia compared to pregnant women aged 20-35 years. While the age of 16-19 years has no effect on the incidence of preeclampsia with a p-value: 0.335 >0.05, based on the results of this analysis also obtained an OR value: 1.426, this value indicates that subjects who are aged 16-19 years have a 1.426 times chance have preeclampsia compared to reproductive age that is safe for pregnancy.

The results of logistic regression analysis in table 7 are obtained that mothers with obese (BMI ≥30.0) could influence the incidence of preeclampsia with a p-value: 0.001 <0.05, pregnant women with obese had a risk of 4.696 times having preeclampsia compared to a healthy weight. From this analysis, it was also found that overweight had no effect on the incidence of preeclampsia with a p-value: 0.282 >0.05. Nevertheless, statistically shows that mothers with an overweight BMI have a 1,552 times chance of developing preeclampsia compared to healthy BMI.

Also, the results of the regression analysis in Table 7 show that mothers with primigravida status affected the incidence of preeclampsia, and primigravida had a risk of 2.099 times having preeclampsia compared to multigravida. In contrast, grand multigravida did not affect the incidence of preeclampsia with a p-value: 0.260> 0.05, but grand multigravida had a 0.515 chance of developing preeclampsia, while grand multigravida did not affect the incidence of preeclampsia with a p-value: 0.260> 0.05. they were compared to multigravida. Of these variables, the one most at risk for preeclampsia is obesity, were 4,696 times the risk of preeclampsia. The nagelkerke R square value in this analysis is 15.5%, which means that these three risk factors can represent a variation of the risk factors in preeclampsia by 15.5%, while 84.5% explained by other factors not examined.

Table 7: Results of multivariate analysis between pregnant women's age, BMI, and gravida to the incidence of preeclampsia

Variable		B	p-value	OR	95% CI
Age	16 - 19 y.o	0,335	0,508	1,426	0,498 – 4.081
	36 - 45 y.o	1,401	0,003	4,060	1,600 – 10,298
BMI	*Overweight*	0,439	0,282	1,552	0,697 – 3,457
	Obese	1,547	0,001	4,696	1,879 – 11,738
Gravida	Primigravida	0,741	0,031	2,099	1.069 – 4.123
	Grandemulti gravida	-0,664	0,260	0,515	0.162 – 1.635
Konstanta	-1,164				
Nagelkerke R squere = 15,5 % **Hosmer & Lemeshow test = 0,866**					

Based on the results of the multivariate analysis test, the formula is as follows:

y = -1,164 + 0,335*(16-19y.o) + 1,401*(36-45y.o) + 0,439*(*overweight*) + 0,001*(*obese*) + 0,741*(primigravida) - 0,664*(grandemultigravida)

Thus the probability formula is:

$$p: \frac{1}{1+e^{-y}}$$

4. DISCUSSION

4.1. The Relationship of Age to the Incidence of Preeclampsia

From the results of the bivariate analysis, age was found to be significantly related to the incidence of preeclampsia. The results of the multivariate analysis also obtained the age of 36-45 years affected the incidence of preeclampsia and 2.420 times the risk of preeclampsia. This study is in line with Novianti's research [6] and Tinta *et al*., [7] that there is an age-related to the incidence of preeclampsia and at the age of <20 years in pregnancy prone to preeclampsia because the size of the uterus at age <20 years has not reached the standard size for pregnancy and maternal age >35 years of blood vessels experience peripheral dysfunction and structural changes resulting from the degenerative process, so it is easy to experience preeclampsia. This study is by the research of Bilano, Ganchimeg, Mori, and Souza [8] that there is a relationship between the incidence of preeclampsia and age >=35 years at 1.95 times the risk of experiencing preeclampsia. Sheen *et al*. obtained another result that the proportion of women with preeclampsia aged 15 to 24 years decreased from 42.3% in 1998 to 30.1% in 2014, while preeclampsia among those 11 to 54 years increased from 32.9 to 43.7%[9]. Furthermore, this study is not in line with the research of Sutrimah, Mifbakhuddin, and Wahyuni [10] that there is no relationship between age and the incidence of preeclampsia.

4.2. The Relationship of BMI to the Incidence of Preeclampsia

Based on bivariate analysis, it was found that there was a relationship between BMI with the incidence of preeclampsia with a p-value of 0.002 <0.05. Meanwhile, according to multivariate analysis, it was found that mothers with obesity (BMI ≥30.0) could influence the incidence of preeclampsia with a p-value: 0.001 <0.05 and have a risk of 4.469 times to experience preeclampsia compared to a healthy weight. This is the following research by Andriani, Lipoeto, and Utama [11] that there is a relationship between BMI and the incidence of preeclampsia. However, overweight BMI is two times more risk for preeclampsia compared to women who have healthy body weight. In pregnant women who are overweight, preeclampsia can occur through the mechanism of hyperleptinemia, metabolic syndrome, inflammatory reactions, and increased oxidative stress, which leads to damage and endothelial dysfunction. Besides decreasing the production and secretion of nitric oxide [12], which causes an imbalance of vasoconstrictor and vasodilator factors, this will increase maternal blood pressure [13] [14].

This is also supported by research from Roberts et al. [15] that concerning BMI to preeclampsia, women with obesity have a 3-fold risk of experiencing preeclampsia, and about 10% of women with obesity develop preeclampsia. Robillard *et al*. [16] said that metabolic factors, other than diabetes, associated with prepregnancy maternal corpulence, are associated explicitly with late-onset preeclampsia. This may be a direction for future researches on maternal preeclamptic syndrome. This may explain the discrepancy we are facing nowadays where high-income countries report 90% of their preeclampsia being late-onset preeclampsia, while it is only 60–70% in medium-low income countries. Beneventi *et al*. [17] said that In the first trimester and during pregnancy, pregnant subjects with obesity had higher serum Leptin and lower IL33 concentrations compared with lean controls. For those that later experienced preeclampsia, this disparity continued as well. The association between Leptin and IL33 maternal serum levels with the Doppler pulsatility index of the uterine artery strongly indicates that these two markers play a role in early placentation.

4.3. The Relationship of Gravida to the Incidence of Preeclampsia

The results of the bivariate analysis showed no relationship between gravida status from the incidence of preeclampsia with a p-value of 0.410 >0.05. However, based on multivariate analysis, primigravida influences the incidence of preeclampsia with a p-value of 0.031 <0.05 compared to multigravida, where primigravida has a risk of 2.099 times to get preeclampsia. The results of this bivariate analysis are in line with the research of Asmana, Syahredi, and Hilbertina [18] that there is no gravida relationship to the incidence of preeclampsia, parity 0 is a risk factor for severe preeclampsia, and there are differences between the results of this study, and the theory can be caused by various factors, including there is a sample of research with parity more than one which is not a risk factor group, but has an age risk factor, that is, the age is more than 35 years.

Besides, there is also the possibility of confusion in the diagnosis of preeclampsia, especially in pregnant women whose blood pressure before pregnancy or in early pregnancy is unknown; this makes it challenging to distinguish preeclampsia and chronic hypertension from superimposed preeclampsia. Not knowing the condition of blood pressure before pregnancy or previous blood pressure history will also cause escape from the sample exclusion process for patients who have a history of unknown hypertension Asmana et al. [18]. The results of this bivariate analysis are in line with research from Sunarto [19] that there is no gravida relationship to the incidence of preeclampsia with a p-value: 0.706 > 0.05, and there are differences in research results with the theory that there may be other factors such as mothers already preparing for pregnancy before pregnant women, antenatal care, nutritional intake during pregnancy, and lifestyle so that gravida does not affect the incidence of preeclampsia.

The results of this study are based on multivariate analysis in line with research. The results of this study are based on multivariate analysis in line with Novianti's [6] research that there is a parity/gravida relationship to the incidence of preeclampsia, primigravida, and grand multigravida at 2,117

times the risk of preeclampsia. Also, the result of Tinta et al. obtained that there is a relationship between gravida and preeclampsia, especially multigravida [7], antipodes with Yanuarini's et al., result [20]. Moreover, based on Saraswati and Mardiana's research [21] that there is a significant relationship between gravida status and the incidence of preeclampsia, where this research supports the immunological theory between mother and fetus, which states that primigravida has a higher risk of hypertension in pregnancy (preeclampsia) when compared with multigravida and primigravida have a risk of 2,173 times preeclampsia.

It is necessary to increase education and counseling to mothers about the risk factors for preeclampsia and the dangers of preeclampsia. If the mother is overweight or obese, then before pregnancy can be educated to improve eating patterns and regular exercise. First-time pregnant women are advised to routinely control their pregnancies so that health workers can monitor the development of maternal health and need to increase preeclampsia screening as early detection for pregnant women who are at risk of preeclampsia.

5. CONCLUSION

There is a relationship between age, BMI, gravida, and the incidence of preeclampsia in Muhammadiyah Hospital, Surabaya

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REFERENCES

[1] World Health Organization, "Maternal mortality," 2020. [Online]. Available: https://www.who.int/news-room/fact-sheets/detail/maternal-mortality. [Accessed: 16-Mar-2020].

[2] East Java Province Health Office, *East Java Health Profile 2018*. Surabaya, 2019.

[3] I. I. Imaroh, S. A. Nugraheni, and Dharminto, "Faktor Risiko Yang Mempengaruhi Kejadian Hiperensi Pada Ibu Hamil Di Wilayah Kerja Puskesmas Kedungmundu, Kota Semarang Tahun 2017," *J. Kesehat. Masy.*, vol. 6, no. 1, pp. 570–580, 2018.

[4] S. Prawirohardjo, *Ilmu Kebidanan*. Jakarta: PT Bina Pustaka Sarwono Prawirohardjo, 2011.

[5] K. N. Olson, L. M. Redman, and J. L. Sones, "Obesity 'complements' preeclampsia," *Physiol. Genomics*, vol. 51, no. 3, pp. 73–76, 2019.

[6] H. Novianti, "The Influence Of Age And Parity Of Events Pre Eklampsia In Sidoarjo General Hospital," *J. Ilm. Kesehat.*, vol. 9, no. 1, pp. 25–31, 2016.

[7] Y. Tinta, "Related Factors to Preeclampsia Incidence in Pregnant Women at Lasinrang Regional Hospital Pinrang."

[8] V. L. Bilano, E. Ota, T. Ganchimeg, R. Mori, and J. P. Souza, "Risk factors of preeclampsia/eclampsia and its adverse outcomes in low- and middle-income countries: A WHO secondary analysis," *PLoS One*, vol. 9, no. 3, pp. 1–9, 2014.

[9] J.-J. Sheen *et al.*, "Maternal age and preeclampsia outcomes during delivery hospitalizations," *Am. J. Perinatol.*, vol. 37, no. 01, pp. 44–52, 2020.

[10] Sutrimah, Mifbakhuddin, and D. Wahyuni, "Factors Related to The Incident of Pregnant Women Preeclampsia in Rumah Sakit Roemani Muhammadiyah Semarang," *J. Kebidanan*, vol. 4, no. 1, pp. 1–10, 2015.

[11] C. Andriani, N. I. Lipoeto, and B. I. Utama, "Hubungan Indeks Massa Tubuh dengan Kejadian Preeklampsia di RSUP Dr. M. Djamil Padang," *J. Kesehat. Andalas*, vol. 5, no. 1, pp. 173–178, 2016.

[12] N. Triastuti, M. P. Airlangga, and M. Anas, "Usage of Inhaled Nitric Oxides in Cases of Eisenmenger Syndrome," *Indones. J. Med. Sci. Public Heal.*, vol. 1, no. 1, pp. 13–19, 2020.

[13] M. Anas, N. Triastuti, and M. P. Airlangga, "Role Of Inhaled Nitric Oxides In Pregnancy With Eisenmenger Syndrome," *QANUN Med.*, vol. 1, no. 4, pp. 11–26, 2020.

[14] M. Anas and U. Marlina, "Penggunaan Nitrovasodilator Sebagai Donor Oksida Nitrik Pada Preeklamsia," in *Proceeding Annual Meeting APKKM Ke 6 Surabaya*, 2018, pp. 1–27.

[15] J. M. Roberts, L. M. Bodnar, T. E. Patrick, and R. W. Powers, "Peran Obesitas di Preeklamsia," *Kehamilan Hypertens*, vol. 1, no. 1, pp. 6–16, 2011.

[16] P.-Y. Robillard *et al.*, "Increased BMI has a linear association with late-onset preeclampsia: A population-based study," *PLoS One*, vol. 14, no. 10, p. e0223888, 2019.

[17] F. Beneventi *et al.*, "Maternal and fetal Leptin and interleukin 33 concentrations in pregnancy complicated by obesity and preeclampsia," *J. Matern. Neonatal Med.*, vol. 33, no. 23, pp., 3942–3948, 2020.

[18] S. K. Asmana, Syahredi, and N. Hilbertina, "Hubungan Usia dan Paritas dengan Kejadian Preeklampsia Berat di Rumah Sakit Achmad Mochtar Bukittinggi Tahun 2012 - 2013," *J. Kesehat. Andalas*, vol. 5, no. 3, pp. 640–646, 2016.

[19] A. Sunarto, "Hubungan Faktor Risiko Usia Ibu, Gravida, dan Indeks Massa Tubuh dengan Kejadian Preklampsia di RSUD Tugurejo Semarang," Universitas Muhammadiyah Semarang, 2015.

[20] T. A. Yanuarini, S. Suwoyo, and T. Julianawati, "Hubungan Status Gravida Dengan Kejadian

Preeklamsia Di Wilayah Kerja Puskesmas Ngasem Kabupaten Kediri," *J. KEBIDANAN*, vol. 9, no. 1, pp. 1–6, 2020.

[21] N. Saraswati and M. Mardiana, "Faktor Risiko Yang Berhubungan Dengan Kejadian Preeklampsia Pada Ibu Hamil (Studi Kasus Di Rsud Kabupaten Brebes Tahun 2014)," *Unnes J. Public Heal.*, vol. 5, no. 2, p. 90, 2016.

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