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Factors Affecting the Incidence of Hypertension in Women of Childbearing Age

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Abstract. *Hypertension, acommonand chronic non-communicable disease, has become a global health problem and aleading cause of death. Blood pressure that exceeds normal values is known as hypertension, or high blood pressure. From this theory, this study aims to assess the relationship between obesity and family history factors that affect hypertension in women of childbearing age. This study used quantitative methods with an observational analytic design cross-sectional approach. The selected population was women aged 15 to 45 years Getakmoyan village. The result, because the ρ value is greater than α = 0.05. The results showed that 16 respondents who were obese and had hypertension had a ρ value of 0.007 (α = 0.05 because the ρ value was smaller than α). Overall, lifestyle factors such as obesity and diet have a greater influence than family history on the risk of hypertension in women of childbearing age.*

Keywords: *family history, hypertension, obesity, women of childbearing*

1. INTRODUCTION

One of the biggest public health problems in the world is hypertension. During 2010, a rise in blood pressuren of more than 140/8 mmHg caused 9.4 million deaths worldwide, according to the International Society of Hypertension (ISH) records. It is reported that hypertension accounts for half of the cause of heart disease and stroke, 40% of deaths in diabetics, and is a major risk for kidney failure, pregnancy poisoning, and dementia (Nurhayati & Andry Ariyanto, 2023). In the journal (Rambing et al., 2021) there were 56.40 million global deaths in2015, 70% of which were caused by non-communicable disease. More than three-quarters of these deaths occurred in low-and middle- income countries in 2015, and about 48% of these deaths occurred before the age of 70 years (WHO< 2014).

However, 7,7 percent of American women of childbearing age have hypertension. The result of the Inter-Census Population Survey (Supas) show that 38,631, 937 women in Indonesia belong to the five-year age group, namely the 15=49 age group. According to additional analysis of RISKESDA 2007 data, the rate of hypertension in non-pregnant women (including women of childbearing age) was 23.6% (Fauza & Simamora, 2019).

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Hypertension, acommonand chronic non-communicable disease, has become a global health problem and aleading cause of death (Hintari & Fibriana, 2023). Blood pressure that exceeds normal values is known as hypertension, or high blood pressure. Hypertension contributes to cardiovascular disease, which is currently the number one cause of death in Indonesia (Rumaisyah et al., 2023). According to Kaplan, many genetic factors, environmental conditions, and hemodynamic regulatory centers contribute to hypertension. In simpleterms, hypertension is the interaction between cardiac output (CO) and total peripheral resistance (TPR) (Rahmadhani, 2021).

Obesity is one of the factors that can cause hypertension, but the cause is not yet known. Circulation and pressure in the blood vessels will be disturbed if there is excess fat in the body (Nurohmi et al., 2024).

Hypertension is most common in the elderly, but also affects women of reproductive age. Women of childbearing age (WUS) are women between the ages of 15 and 49 who are still in reproductive age (from the first menstruation and until the cessation of menstruation), unmarried, married, or widowed, and still have the possibility of having offspring. There are two categories of risk factors for hypertension: those that can be changed and those that cannot be changed. Age, gender, family history, and genetics are risk factors that cannot be changed. In contrast, smoking, salt consumption, saturated fat consumption, use of cooking oil, drinking alcohol, obesity, physical inactivity, stress, and estrogen use are modifiable risk factors (Maring et al., 2022).

From this theory, this study aims to assess the relationship between obesity and family history factors that affect hypertension in women of childbearing age.

2. METODHE

This study used quantitative methods with an observational analytic design cross-sectional approach. The focus of this study was to identify factors that contribute to the prevalence of hypertension in women of childbearing age (WUS). The selected population was women aged 15 to 45 years in Getakmoyan village. The sample was selected through stratified random sampling based on age, obesity, and family history.

3. RESULT

Table 1. distribution of Respondents by Age in age Getakmoyan village

No	Year	Frequency
1	15-24 Years	3
2	25-34 Years	41
3	35-45 Years	44
	Total	88

The table above shows the age range of respondents, with the highest age being 45 years and the lowest age being 20 years.

Table 2. Relationship Between Hypertension Incidence and Family History of Hypertension Patients in Getakmoyan village

History of Hypertensi	Incidence of Hypertension		Total	ρ	α	*Chi-square count*	df
	Yes	No					
Positive	20	38	58				
Negative	6	24	30	0,158	0.05	1.992	1 = 3.481
Total	26	62	88				

In table 2, it was found that 20 of the respondents were hypertension positive and had a family history of hypertension; 38 respondents had a family history of hypertension but not experience it; 6 respondents experienced hypertension but did not have a family history of hypertension; and 24 respondents did not experience hypertension at all. Statistically, there was no correlation between family history of hypertension and the incidence of hypertension. The result of data processing show that the ρ *value* = 0.158 is greater than α = 0.05, and Chi Square count 1.992 is smaller than Chi Square table 3.481.

Table 3. Relationship Between Obesity and Hypertension in Getakmoyan village

	Incidence of Hypertension		Total	ρ	α	*Chi-square count*	df
	Yes	No					
Obesity	16	19	35				
Not obese	10	43	53				
Total	26	62	88	0.007	0.05	7,298	1 = 3.481

Table 3 above shows that 19 of the obese respondents had hypertension, while 16 did not. There were the people who had hypertension but were not obese, and the remaining 43 people had neither hypertension nor obesity. Statistically, there is an association between

obesity and hypertension cases, as shown by the result of data processing: ρ *value* = 0.007 < α = 0.05, and Chi Square calculated 7.298 is greater than Chi Square table 3.481.

4. DISCUSSION

The result of the study discussed above showed that out of 88 respondents, 20 had hypertension and had a family history of hypertension. Because the ρ *value* is greater than α = 0.05. Thus, there is no statistical relationship between the incidence of hypertension in women of childbearing age and family history of hypertension, because Chi Square count 1.992 is smaller than Chi Square 3.481. This is in line with (Arum, 2019) research. The results showed that family history was not associated with hypertension, because the ρ*-value* (0.078) was greater than α (0.05) and the contingency coefficient was not meaningful. This study is inversely proportional to that showd by (Hintari & Fibriana, 2023) study. The ρ *value* for this family history was 0.001. Family showed a significan correlation with hypertension, according to the results of bivariate analysis.

The strongest risk factor for developing hypertension in the future is a family history (parents, grandparents, and siblings) of high blood pressure (Chhabra et al., 2022). This study shows that there is no correlation between family history and the incidence of hypertension age. The family history factor of hypertension is known to be related to poor lifestyle, which is associated with diet. If a person adopts a healthy diet, they are likely to avoid hypertension (Rismawati & Putri, 2022).

The results showed that 16 respondents who were obese and had hypertension had a ρ *value* of 0.007 (α = 0.05 because the ρ *value* was smaller than α), and Chi Square calculated 7.298 was greater than Chi Square table 3.481. This indicates that there is a statistical relationship between obesity and the incidence of hypertension in women of childbearing age. The blood pressure of overweight people is higher than that of people who are normal weight or thin. This study is in line with research conducted by (Andika & Safitri, 2019), there is a significant relationship between obesity and hypertension. The statistical test result show a ρ *value* = 0.041, which indicates a significant relationship. This study is also in line with that conducted by (Alfalah et al., 2022), based on consideration, this relationship is considered meaningful if ρ < 0.05. Therefore, it can be statistically concluded that there is an association between obesity and of hypertension in ethnic Minangkabau women.

An unbalanced diet, where one consumes more fat and protein than fiber, is closely linked to obesity. The risk of developing cardiovascular disease increases for several reasons, including being overweight (Simamora et al., 2019). The amount of blood required to supply

oxygen and food to body tissues increases with body mass. This indicates that the pressure on the arterial walls increases as a result of a larger volume of blood circulating through the blood vessels. Hypertension is more common in obese people (Rezeki et al., 2024). Obese women at the age of thirty have seven times the risk of hypertension compared to slim women of the same age.

5. CONCLUSION

The results showed that several factors influence hypertension in women of childbearing age in the village. Family history, the results showed that there was no statistically significant association between the incidence of hypertension in women of childbearing age and family history. Chi-Square analysis result and *ρ value* greater than 0.05 support this clam. However, other studies have found that a family history of hypertension can be a risk factor, especially if it is associated with an unhealthy lifestyle, such as an unhealthy diet. Furthermore, there is a signiticant correlation between obesity and hypertension rates in women of childbearing age. The *ρ value* < 0.05 and the results of Chi-Square analysis show that the calculated value is greater than the table. Overweight people have higher blood pressure compared to normal weight people have higher blood pressure compared to normal weight people. The pressure on the arterial wall increases because obesity makes the volume of circulating blood larger.

Overall, lifestyle factors such as obesity and diet have a greater influence than family history on the risk of hypertension in women of childbearing age. Therefore, prevention of hypertension in this group can be done through education and interventions that focus on weight control and healthy eating.

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