Journal for Quality in Public Health ISSN: 2614-4913 (Print), 2614-4921 (Online)
Vol. 6, No. 1, November 2022, pp: 272-279
DOI: https://doi.org/10.30994/jqph.v6i1.423

Analysis Health Determinants on the Event of Gestational Hypertension Toward 3rd Trimister Pregnant in Maternity Clinic Budi Asih Turen

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Received : September 7nd 2022

Accepted : October 11rd 2022

Published : November 27th 2022

ABSTRACT

Gestational hypertension is one of the conditions that can arise during pregnancy and can lead to more serious complications. Seizures or eclampsia, brain hemorrhage, pulmonary edema (fluid in the lungs), abrupt kidney failure, and blood clots in the blood vessels are all possible complications of hypertension in pregnancy. This study attempts to determine the factors that influence the risk of gestational hypertension. Weight gain, sleep patterns, and dietary habits are variables that are expected to have a substantial effect on gestational hypertension. The test equipment employed is logistic regression and the study method is descriptive quantitative. The study included 103 pregnant women in their third trimester at Klinik Bersalin Budi Asih, Turen - Malang. The result of this research showed that weight gain received a Sig value of 0.016, which was less than the minimum level of 0.05, indicating that weight gain has a significant effect on gestational hypertension. The sleep patern has a Sig value of 0.006, which is less than the 0.05 threshold, indicating that sleep length has a substantial impact on gestational hypertension. The last variable, dietary habit, has a s Sig value of 0,034, which is higher than the threshold of 0.05, indicating that dietary habit has a significant impact on gestational hypertension. The Chi Square value of 28,678 with a significance level of 0.001 indicates that all of this study's independent variables have a significant influence on gestational hypertension.

Keywords: dietary habit, gestational hypertension, logistic regresion, sleep patern, weight gain

INTRODUCTION

Hypertension, handling abnormalities, anemia, pregnant women suffering from diabetes, malaria, and four too young (too young 20 years, too old >35 years, too near 2 years, and too many children > 3 years) are some of the problems that might cause unhealthy conditions for pregnant women. The indicator to be accomplished in improving public health status is a drop in maternal death rate from 359 per 100,000 live births in the 2012 IDHS to 306 per 100,000 live births in 2019. Furthermore, Malang Regency is one of the top ten cities in Indonesia in terms of maternal mortality. There were 17 maternal fatalities in 2018. (Kemenkes, 2019).

Based on previous studies, the researcher interviewed 15 pregnant women, 9 of whom had gestational hypertension and 6 of whom did not. When the mother's blood pressure was 140/90mm Hg, 140/90mmHg, and 140/100mmHg, three women claimed they did not receive enough rest, particularly sleeps, due to working/doing household activities. According to two people, gaining a lot of weight during pregnancy raises blood pressure. Pregnant women report that their hunger grows in tandem with

their gestational age. Meanwhile, three women said that their diet was unstable during their pregnancies (Putri Pinasti, 2013).

Furthermore, physical factors caused by pregnancy hormones cause pregnant women to feel weary and lethargic fast, necessitating appropriate sleep rest for moms. Pregnant women who are overweight and require less sleep throughout pregnancy may increase their risk of difficulties during pregnancy and delivery, such as gestational hypertension. As a result, exams and research on clinical symptoms during antenatal care are required, including monitoring, weight growth during pregnancy, rest patterns, and nutritional status, as well as minimizing risk factors for gestational hypertension in pregnancy. As a result, it is intended that women will be aware of the potential risks and will be able to notice any danger indications or issues that may arise during pregnancy (Dewi, 2014).

Based on this information, the researchers planned to perform a study called "Analysis of Health Determinants of Gestational Hypertension Incidence in Third Trimester Pregnant Women at Di Klinik Bersalin Budi Asih Turen." The formulated problem of the study is "Are there health variables that influence the occurrence of gestational hypertension in third trimester pregnant women at Klinik Bersalin Budi Asih Turen.?". The goal of this study was to examine the impact of health determinants such as weight gain, dietary habits, and sleep patterns on the incidence of gestational hypertension in third trimester pregnant women at Klinik Bersalin Budi Asih Turen, Malang.

METHODS

This study employs a correlational research design with a cross-sectional methodology. This study's population included all pregnant women in their third trimester who had gestational hypertension at Klinik Bersalin Budi Asih Turen, a total of 140 women. The research was conducted on June 10, 2021.

The study sample consisted of TM III pregnant women with gestational hypertension who underwent ANC exams at Klinik Bersalin Budi Asih Turen using the Slovin formula, with a study population of 140 pregnant women and a sample of 103 pregnant women (Stephanie, 2013).

The sample technique used in this study is simple random sampling. This study's variables include independent variables such as weight gain, dietary habits, and sleep patterns. The incidence of gestational hypertension is the dependent variable. Meanwhile, the instruments employed in this investigation included questionnaire sheets, digital scales, a sphygmomanometer, and urine protein testing tools. Statistical analysis uses SPSS computer aid and the logistic regression model. The following are the test results. If p value is $< \alpha$ less than, then Ho is rejected and Hi is accepted, indicating that there is a weight gain role in dietary habits, and sleep pattern increases the incidence of gestational hypertension in third trimester pregnant women at Klinik Bersalin Budhi Asih Turen. If the p value is $> \alpha$ more than, Ho is accepted and Hi is rejected, indicating that the factors of weight gain, diet, and sleep pattern have no effect on the incidence of gestational hypertension in third trimester pregnant women at Klinik Bersalin Budhi Asih Turen.

This study was carried out in compliance with the following research ethics: 1) Well-informed Consent was obtained with the first objective of the researcher outlining the respondent's rights and obligations. If the subject agrees to be studied, the respondent must sign the consent form; if the subject refuses to be studied, the researcher does not compel him to do so and still respects his rights. 2) Anonymity is used to protect the confidentiality of research subjects; researchers do not include names and are only provided serial numbers as IDs during data collection. 3) Confidentially is practiced in order to safeguard the confidentiality of research findings; both information and other issues are closely guarded by researchers. In research outcomes, only particular data groups are given (Hidayat, 2013). This research has passed the ethical research review with ethical approval number: 2468/KEPK/VIII/2021, reviewed and issued by Health Research Ethics Committee Institute of Health Science STRADA Indonesia.

RESULTS

The SPSS Omnibus Test results show that the test model has a Sig value of 0.001, which is lower than the minimum standard of 0.05, indicating that weight gain, sleep patterns, and dietary habits have a significant effect on gestational hypertension, indicating that the research hypothesis is accepted. The omnibus test was used to get answers to the hypotheses that were tested.

Tabel 1 Omnibus Test results

		Chi-square	df	Sig.
Step 1	Step	28.678	3	0.001
	Block	28.678	3	0.001
	Model	28.678	3	0.001

Source: Output SPSS

Wald test was used to look into the significance of each independent variable's effect, and the variable weight gain received a Sig value of 0.016, which was lower than the minimum level of 0.05, indicating that weight growth has a significant effect on gestational hypertension. The sleep duration variable has a Sig value of 0.006, which is less than the 0.05 threshold, indicating that sleep length has a substantial impact on gestational hypertension. Dietary habit, the final variable, has a s Sig value of 0.034, which is less than the minimal 0.05, indicating that dietary habit has a significant effect on gestational hypertension.

Tabel 2 The result of Wald/Parsial test

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Kenaikan_BB	-.259	.600	.186	1	0.016	0.772
	Durasi_tidur	1.558	.572	7.408	1	0.006	4.750
	Dietary_Habbit	1.179	.555	4.508	1	0.034	3.251
	Constant	-3.757	.938	6.062	1	.001	.023

Source: Output SPSS

The amount of the effect can also be determined using the odd ratio or the value of Exp (B) as given in the table above, which is as follows. The Exp (B) score for weight increase was 0.772, indicating that the gestational risk for respondents who gained weight faster than advised is 0.772. Sleep length has an Exp(B) value of 4.750, indicating that respondents with insufficient sleep duration had a 4.750 gestational risk. Finally, the Dietary habit received an Exp (B) value of 3,251, indicating that respondents with a Dietary habit that is not in accordance with the required consumption face a gestational risk of 3,251.

A determination test was also used to acquire the findings or value of the strength of the link between all independent factors and the dependent variable.

Tabel 3 The result of Determination test

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	114.023[a]	0.243	0.324

Sourcce: Output SPSS

The number produced by the Nagelkerke R Square test, as shown in the table above, is 0.324, which suggests that the strength of each independent variable's relationship to the dependent variable is 32.4 percent, with the remaining 65.4 percent influenced by variables outside the research.

On the research sample, a description test was performed to assess the beginning state of the research respondents, which is linked to the risk of gestational hypertension, and the results obtained.

Tabel 4 The Frequency of Respondent's Weight Gain

Skor Berat Dianjurkan	Jumlah	Prosentase
1 (12,5-18 Kg)	33	32%
2 (11,5-16 Kg)	70	68%
Jumlah	103	100%

Source: output Tabulasi

According to the figure above, the majority of the research participants are pregnant women with a suggested weight gain of 11.5 kg-16 kg, accounting for 68 percent of the total. The remaining 32% of responders are those who have been advised to gain 12.5-18 kg of weight.

Tabel 5 The Frequency of Respondent's Sleep Pattern

Skor Rata-rata Tidur	Jumlah	Prosentase
1 (Kurang)	54	52%
2 (Cukup)	49	48%
Jumlah	103	100%

Source: output Tabulasi

according to table above, 52 percent of respondents had insufficient sleep length, whilst the remaining 48 percent have appropriate sleep duration.

Tabel 6 The Frequency of Respondent's Dietary Habit

Skor Dietary Habbit	Jumlah	Prosentase
1(Tidak Sesuai)	49	48%
2 (Sesuai)	54	52%
Jumlah	103	100%

Source: output Tabulasi

Based on the table above, it is known that most of the respondents are in accordance with the dietary habits according to the PUGS guidelines, namely 52% of respondents. The remaining 48% of respondents did not comply with PUGS.

Tabel 7 Respondent's Blood Pressure Score

Skor HG	Jumlah	Prosentase
1(Ringan)	53	51%
2 (Berat)	50	49%
Jumlah	103	100%

Source: output Tabulasi

Based on the table above, it is known that most of the respondents' blood pressure is in the range of mild gestational hypertension, as many as 51% of respondents. The remaining 49% were included in the severe category of gestational hypertension.

DISCUSSION

Pregnancy hypertension (gestational hypertension) is a health issue that increases the risk of death and morbidity in pregnant women. Seizures/eclampsia, brain hemorrhage, pulmonary edema (fluid in the lungs), abrupt kidney failure, and blood clots in the blood vessels are all possible complications of hypertension in pregnancy. In addition to fetal morbidity, which results in stunted fetal growth, fetal death in the pregnancy, placental abruption, and premature birth (Prawirohardjo, 2011). Several circumstances are suspected to induce prenatal hypertension, but this study limits the examination of the etiology of gestational hypertension to pregnant women's weight, sleep duration, and food habits. (Desi Purwantini, 2018).

The effect of pregnancy weight gain on gestational hypertension

Weight gain during pregnancy is mostly caused by the uterus and its contents, breasts, and an increase in blood volume and extravascular extracellular fluid (ifalahma & Wulandari, 2015). Maternal weight before pregnancy and weight gain during pregnancy is less (underweight) or more (overweight) than normal will make pregnancy a risk. The basic concept of the importance of maintaining an ideal body weight is the health risks to the mother and baby such as the risk of Low Birth Weight (BBLR) if pregnant women are not able to gain weight. Meanwhile, the mother's excessive weight or rapid weight gain could cause bleeding or be an early sign of pregnancy poisoning (preeclampsia) or diabetes. Blood pressure of 140/90 mmHg in two or more measurements is considered hypertension in pregnancy (HDK). 2014 (Cunningham). Several factors might influence the occurrence of hypertension during pregnancy (multiple causation). Body Mass Index (BMI) of the mother's age is a risk factor for hypertension during pregnancy. Rohmani, Setyabudi, and Puspitasari (Rohmani, Setyabudi, & Puspitasari, 2015).

The study's findings show that weight gain in pregnant women has a significant impact on the risk of gestational hypertension. This is seen in table 4.12 for the equation variable test, where weight gain received a Sig value of 0.016 0.05 with a beta value of -0.259 and a constant value of -3.757, indicating a unidirectional link between weight gain and the risk of gestational hypertension. This unidirectional link means that if pregnant women's weight is within the prescribed range, the risk of gestational hypertension decreases; conversely, if pregnant women's weight continues to rise above the permissible range, the risk of gestational hypertension rises. The findings of this study are consistent with the findings of Isnaniar, Wiwik Norlita, and Niken Safitri's (2019) study, which discovered a substantial effect on gestational hypertension, recommending that pregnant women maintain the recommended weight. Sri Minarti, Artathi Eka Suryandari, and Misrina Retnowati (2013) conducted research that corroborates the authors' findings that pregnant women with weight gain above normal have a greater risk of gestational hypertension.

According to table 4 the majority of respondents have a IMT range of 18.5 – 24.9, indicating that the weight of the majority of respondents throughout the respondent's pregnancy is in the normal category, and the recommended weight gain should not exceed 16 kg. Maintaining the correct weight during pregnancy is also important for the mother's and fetus's health in the womb. It is expected that exceeding the recommended weight will result in premature birth, diabetes in the mother, preeclampsia, sleep apnea, and other complications (Sistiarani, 2008). Although there are numerous factors other than body weight that can affect the health of the mother and baby during pregnancy, Dyah Ekowati's (2018) research demonstrates a link between maternal weight gain during the third trimester of pregnancy and the health and perfection of the fetus in the womb.

The Effect of Sleep pattern on gestational hypertension

Getting enough sleep is essential throughout pregnancy. According to Katryn (2019), pregnant women require a minimum of 8 hours of sleep per night, including good quality sleep. The study's results, as shown in table 2, revealed that the sleep duration variable had Sig 0.06 0.05, indicating that it has a significant effect on gestational hypertension with a beta value of 1.558 and a constant value of -3,757, indicating that the better or increasing the duration of sleep for pregnant women. The risk of gestational hypertension will be reduced, and vice versa, if sleep length is inadequate or inadequate, it will become a sleep disorder, where sleep disturbances might continually result in physiological changes in the body in the form of an imbalance in body homeostasis. If this occurs, the hypothalamus will activate the sympathetic nervous system as a result of an imbalance in the body's homeostasis. As a result, someone with poor sleep quality will suffer variations in blood pressure.

The findings of this study are consistent with those of Zulfa Rufaida, Sri Wardini Puji Lestari, and Ika Yuni Susanti (2018), who found that responders should increase their sleep time in order to maintain healthy blood pressure. Sarifansyah, Ngesti W. Utami, and Mia Andinawati did a similar study in which the findings of blood pressure in pregnant women were influenced by sleep length. Table 5 reveals that the majority of responders get less sleep.

Lack of sleep of research respondents who are pregnant women in their third trimester is linked to their physical condition, such as the stomach beginning to enlarge, making sleeping positions less comfortable, the frequency of going to the toilet increasing, especially at night, uncomfortable heartburn such as burning, leg cramps, and a body metabolism that causes pregnant women to lose weight. According to Sukorini's research (2017), pregnant women have trouble altering their sleeping posture on the day before delivery. An increase in pregnancy can induce this disease, in which the diaphragm pulls up and makes breathing difficult. In pregnant women, bad breath causes a reduction in oxygen delivery to the brain, which can influence sleep quality. Heartburn, also known as gastroesophageal reflux disease (GERD), occurs when acid from the stomach runs back into the esophagus during pregnancy (Ayudhitya & Tjuataja, 2014).

The Effect of dietary habit on gestational hypertension

Diet is one of the risk factors for pregnancy hypertension. Pregnancy hypertension can be caused by a poor diet, such as eating too much salt. The practice of controlling a healthy diet, namely foods low in fat and salt, can prevent hypertension in pregnant women, so proper and healthy intake can protect the mother from the risk of gestational hypertension. Some of the elements that contribute to this environment are determined by genetics, while others are determined by the mother's behavior and food (Walker, 2012).

A good diet for pregnant women always refers to balanced nutrition, namely the fulfillment of all nutrients in accordance with their needs and in balance. The diet of pregnant women is closely related to the food habits they consume. The results of the study as shown in Table 2 of the equation variable test found that the dietary habbit variable was Sig 0.034 < 0.05, which means that it has a significant effect on gestational hypertension with a beta value of 1.179 with a constant value of -3,757 which means the better the dietary habit performed by pregnant women, the better. The risk of gestational hypertension will decrease, on the contrary if the dietary habits get worse, the risk of gestational hypertension will increase. The conclusions of this study agree with those of Nelfi Sarlis (2018) and Erni Juniarti (2021), namely that there is a link between dietary habits and the risk of gestational hypertension. Table 6 shows that the majority of respondents agree with the PUGS, which can be interpreted. These findings can be utilized as a starting point for determining the respondent's nutritional status during pregnancy.

Effect of weight gain, sleep pattern and dietary habit on gestational hypertension

Hypertension is thought to cause complications in 7-10% of all pregnancies. Half to two-thirds of all moms with hypertension during pregnancy are diagnosed with preeclampsia or eclampsia (Norlita, 2019). Gestational hypertension is one of the conditions that can arise during pregnancy and can lead to more serious complications. The study's findings, as shown in table 1, show that all research variables have a significant impact on gestational hypertension, with a Chi Square value of 28,678 and a significance level of 0.001 indicating that all research variables have a significant impact on gestational hypertension, and in table 7 it is known that the majority of respondents have mild gestational hypertension who must be monitored by health workers, implying that research respondents began to have symptoms when they were pregnant.

CONCLUSION

The following conclusions have been reached as a result of the research. Weight increase has a Sig value of 0.016, which is below the threshold of 0.05, indicating that it has a significant impact on gestational hypertension. Sleep duration has a Sig value of 0.006, which is lower than the threshold of 0.05, indicating that it has a substantial impact on gestational hypertension. Dietary habit has a Sig value of 0.034, which is lower than the minimum of 0.05, indicating that it has a substantial impact on gestational hypertension. The Exp(B) score for weight increase was 0.772, indicating that the gestational risk for responders who gained weight faster than advised is 0.772. Sleep duration has an Exp(B) value of 4.750, indicating that respondents with insufficient sleep duration had a 4.750 gestational risk. Dietary habits received an Exp (B) value of 3,251, indicating that respondents with

dietary habits that are not in accordance with the recommended consumption have a gestational risk of 3,251.

The following recommendations are offered from the suggested research based on these findings. It is critical to provide pregnant women with more knowledge and understanding about pregnancy health, particularly in relation to hypertension during pregnancy. This seeks to anticipate pregnancy issues so that they can be avoided as soon as possible.

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