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Relationship Of Eating Pattern and Stress Levels With pre Eclampsia Among Pregnant Women at Cikampek Health Centre

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ABSTRACT

Preeclampsia is one of the complications in pregnancy that has criteria where gestational age is > 20 weeks, which is marked by swelling of the legs, and positive urine protein values caused by various factors. Preliminary study results show that on average pregnant women with preeclampsia have unhealthy eating patterns and abnormal stress levels. This study aimed to determine the relationship between diet and stress levels with preeclampsia in pregnant women at the Cikampek Health Center. This study is a quantitative analytic study with a case control design. The sample in this study consisted of 96 people consisting of 48 samples of the preeclampsia group and 48 samples not experiencing preeclampsia with accidental sampling technique. Bivariate data analysis used Chi Square statistical test to determine the relationship between variables. Pregnant women with a healthy diet 53.1%, and stress levels with a mild category was 58.3%. Bivariate analysis revealed that there was a relationship between diet (p = 0.000) and stress levels (p = 0.004) with preeclampsia in pregnant women at the Cikampek Health Center in 2021. There was a significant relationship between diet and stress levels with preeclampsia in pregnant women at the Cikampek Health Centre in 2021 with a p-value <0.05. It is hoped that in carrying out the antenatal care service program, they can immediately carry out the making of a counseling schedule on how to calculate the nutrients consumed by the mother and the right amount of nutritional needs when pregnant women and stress management for pregnant women as an effort to prevent the occurrence of preeclampsia.

I. Introduction

Preeclampsia is a pregnancy hypertension syndrome that has criteria where the gestational age is above 20 weeks, the mother has swelling (oedema) in the legs, and the urine protein value is > positive 2 caused by various multifactors in pregnant women, which are significantly associated with maternal mortality and morbidity and perinatal (Fitri Yuniarti, Wahyu Wijayati, 2018). Based on WHO (World Health Organization) data in 2017, the main complications that cause almost 75% of all maternal deaths are severe bleeding, infection, hypertension in pregnancy (pre-eclampsia/eclampsia), complications in childbirth, unsafe abortion and infection; malaria or associated with chronic conditions such as heart disease or diabetes (World Health Organization (WHO), 2017).

There are factors that can increase the risk of hypertension, including individual characteristics (age, gender, history of hypertension), diet (habits of consuming fat, sodium and potassium), and lifestyle (smoking habits, alcohol consumption, stress, coffee consumption) and also physical activity) (Ismah Sistikawati et al., 2021).

Preeclampsia can be prevented by adopting a healthy lifestyle, to keep blood pressure values in normal conditions. Smoking and stress management, the fulfillment of an increase in balanced food intake plays an important role in the health of the mother and fetus. Unhealthy living habits with the habit of consuming foods that are high in fat, high in salt and low in protein can trigger an increase in

blood pressure that causes preeclampsia (Sutiati Bardja, 2020). This phenomenon is reinforced by a study conducted by (Nisa et al., 2018) located in the Indramayu Health Center Work Area, where a diet with a low protein adequacy level is a significant factor affecting preeclampsia in pregnant women. The level of protein adequacy that is lacking gives a greater presentation of preeclampsia in pregnant women than sufficient with statistical results showing p value = 0.020 and OR = 27,000 (95% CI: 1.1 < OR < 6.6).

Based on (source: Directorate of Maternal Health, 2019) The biggest causes of maternal death in 2019 remained the same, namely bleeding (1,280 cases), hypertension in pregnancy (1,066 cases), infection (207 cases), in (Ministry of Health of the Republic of Indonesia, 2019). In 2019 the Maternal Mortality Rate in West Java Province decreased by 684 cases or 74.19 per 100,000 KH, compared to 2018 which was 700 cases. The causes of maternal death are still dominated by 33.19% bleeding, 32.16% hypertension in pregnancy, 3.36% infection, 9.80% circulatory system (heart) disorders, 1.75% metabolic disorders, and 19.74% other causes. West Java Province consists of 10 regencies, and the Maternal Mortality Rate in Karawang Regency is ranked second after Bogor Regency, which is 45 cases of maternal mortality (Provincial Health Profile of West Java, 2019).

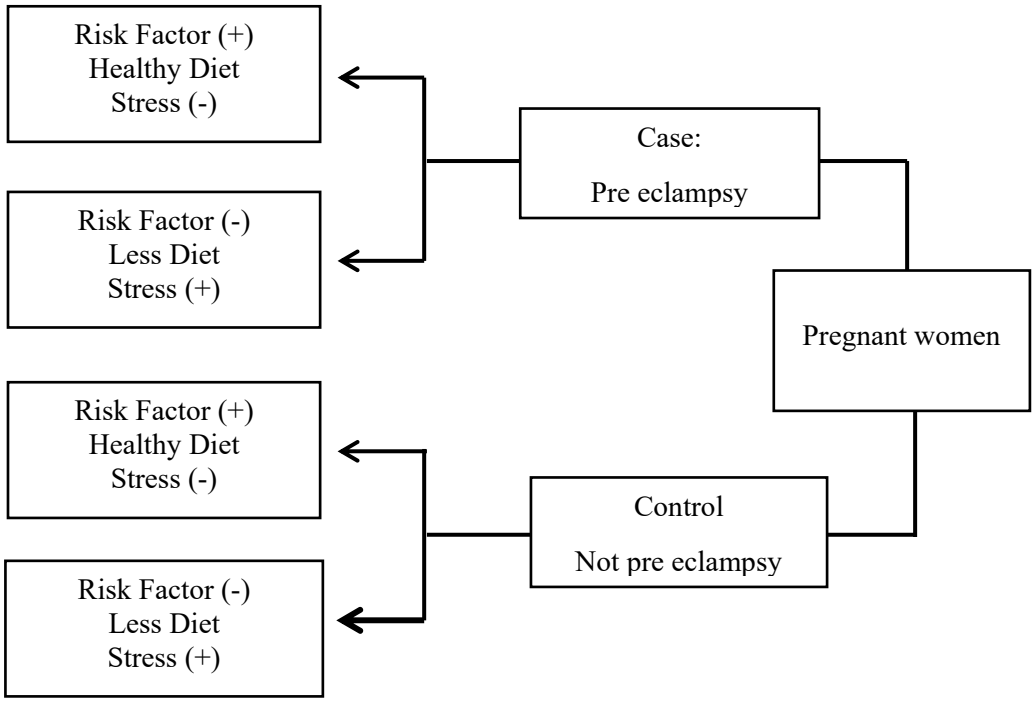
Based on data from the 2020 *PWS-KIA* report, there are 4 maternal mortality data, 2 mothers died from bleeding and 2 due to comorbidities. In March 2021, 1 mother died of preeclampsia (PWS – KIA Report, 2020 - 2021). According to secondary data obtained at the Cikampek Health Center in 2020, 2,424 pregnant women who underwent ANC examinations and 318 (13.1%) pregnant women experienced preeclampsia. In the period January - March 2021, the number of preeclampsia increased, from 616 mothers who had their pregnancy checked there were 153 (24.8%) pregnant women who experienced preeclampsia (KIA Register Book, 2020-2021).

Based on the results of a preliminary study in April 2021, researchers conducted interviews and examined every mother who visited the MCH poly at the Cikampek Health Center. The results of the interviews obtained 2-3 mothers from 20-30 pregnant women who came to the MCH room at the Cikampek Health Center in a day and from the results of the preliminary study at the Cikampek Health Center in April 2021, data on the number of pregnant women who experienced preeclampsia were 59 people. On average, pregnant women who experience preeclampsia do an examination, there are unhealthy eating patterns and abnormal stress levels. The results of interviews and the results of preeclampsia examination in pregnant women found 17 pregnant women whose eating patterns were not healthy and stress levels were not normal.

II. Methods

The study was conducted at the Cikampek Public Health Center on June 22 to 30, 2021. The design of this study was a quantitative analytic study with a case control design. This study looked at the relationship between diet and stress levels with the occurrence of preeclampsia by dividing the sample into two groups, namely the case group (preeclampsia) and the control group (not preeclampsia). Then retrospectively traced the diet and stress levels between the case group (preeclampsia) and the control group (not preeclampsia).

The case control research design is presented as follows:



The population in this study were all pregnant women who had a pregnancy check-up at the KIA Polyclinic with gestational age 20 weeks who had preeclampsia and did not experience preeclampsia; 298 people. Calculation of the sample size with the case control design used the Lameshow formula in (Notoatmojo, 2018) and obtained a sample size of 48 with a case: control ratio of 1: 1, so the total total was 96 samples. The sampling technique of cases and controls was using accidental sampling technique. The instrument used by the researcher was a questionnaire, a food recall form sheet, a stethoscope and a sphygmo-manometer. The analysis used is Univariate and Bivariate Analysis. The results of this univariate analysis resulted in the distribution and percentage of each variable.

III. Results and Discussion

1. Preeclampsia in Pregnant Women at the Cikampek Health Center in 2021

Tabel. 1 Frequency of Preeclampsia in Pregnant Women at Cikampek Health Center

Preeclampsia	f	%
Preeclampsia	48	50,0
Tidak Preeclampsia	48	50,0
Total	96	100

Based on table 1, it shows that pregnant women who have preeclampsia and not preeclampsia are equal which was 48 people (50.0%). Preeclampsia is a gestational hypertension syndrome that has criteria where the gestational age is above 20 weeks, the mother experiences swelling (oedema) in the legs, and the urine protein value is > positive 2 caused by various multifactors in pregnant women, which are significantly related to maternal mortality and morbidity. and perinatal (Arti et al., 2017)

2. Eating Patterns for Pregnant Women at Cikampek Health Center in 2021

Table 2. 2. Eating Patterns for Pregnant Women at Cikampek Health Center in 2021

Eating pattern	f	%
Healthy	51	53,1
Not healthy	45	46,9
Total	96	100

Based on table 2 shows that the majority of pregnant women have a healthy eating pattern which was 51 people (53.1%). According to (Saimin et al., 2019) a healthy diet is a regulation in consuming food that always considers its nutritional content. Among them pregnant women should consume foods that contain protein at least 70 grams/day. According to (Putri, 2017), Nutrients are food substances contained in a food ingredient that can be utilized by the body. A healthy diet always refers to balanced nutrition, the fulfillment of all nutrients according to needs and in balance. The results showed that the majority of pregnant women had an unhealthy eating pattern as many as 36 people (75.0%) and the rest in the healthy category were 12 people (25.0%).

Researchers assumed that many pregnant women whose eating patterns are not healthy will have a negative impact on their babies which will make babies born with low weight and babies will experience very slow growth and development. The occurrence of unhealthy eating patterns is caused by pregnant women consuming foods with protein intake < 70 g/day, where from the results of the study it was found that pregnant women who consumed foods with protein intake 70 g/day most of the eating patterns of pregnant women were less healthy. Protein intake in pregnant women is very important because it is related to the health of the mother and fetus where mothers with unhealthy eating patterns are susceptible to disease. Meanwhile, mothers by consuming protein intake of 70 g/day can avoid various diseases, this is related to the diet of pregnant women. Usually pregnant women by consuming protein intake > 70 g/day will have a healthy diet because they always consume food by paying attention to the intake of nutrients contained therein.

3. Stress Levels for Pregnant Women at the Cikampek Health Center in 2021

Table 3. Frequency of Pregnancy Stress Levels at Cikampek Health Center in 2021

Stress level	f	%
Low	56	58,3
Moderate	30	31,3
Severe	10	10,4
Total	96	100

Based on the results of the study, it was found that the majority of pregnant women in this study had a stress level with a mild category, namely 56 people (53.8%), then pregnant women with a moderate level of stress in the category of 30 (31.3%), and there are 10 people (10.4%) who have a stress level with a heavy category. Stress that occurs in pregnant women greatly affects the health of the mother and fetus. The fetus can experience developmental delays or emotional disturbances at birth if maternal stress is not handled properly (Mandang, J., Gerce, S. J. T., and Marie, 2016).

Researchers assumed that pregnant women who experience stress in both mild, moderate and severe categories are associated with the occurrence of preeclampsia, this can be seen from the results of research on pregnant women who experience stress in the mild category mostly do not experience preeclampsia because the mother is able to overcome all the problems faced by well and less anxious about her pregnancy and delivery. Meanwhile, pregnant women with moderate and severe stress categories mostly experience preeclampsia because the mother is very anxious about her pregnancy and delivery and the mother is less able to cope with all the problems she faces.

4. Relationship between Diet and Preeclampsia in Pregnant Women at the Cikampek Health Center in 2021

Table 4. The Relationship Between Diet and Preeclampsia in Pregnant Women at the Cikampek Health Center in 2021

Eating pattern	Pre eclampsia				Total		*p Value*
	Pre eclampsia		Not Pre eclampsia				
	N	%	N	%	N	%	
Healthy	12	25,0	39	81,2	51	53,1	
Un healthy	36	75,0	9	18,8	45	46,9	0,000
Total	48	100,0	48	100,0	96	100,0	

Based on the results of table 4 above, it is known that the majority of pregnant women who experience preeclampsia have unhealthy eating patterns was 36 people (75.0%). The results of the study using the Chi Square test showed that the significance value of 0.000 was smaller than 0.05. This means that there was a relationship between eating pattern and preeclampsia in pregnant women at the Cikampek Health Center in 2021. So the first hypothesis in this study was accepted by empirical research.

A healthy diet is a regulation in consuming food that always considers its nutritional content. Among them, pregnant women must consume foods that contain a minimum of 70 grams of protein per day (Saimin et al., 2019). According to (Putri, 2017), Nutrients are food substances contained in a food ingredient that can be utilized by the body. For pregnant women, having a healthy diet is very important. A balanced nutritional diet during the life cycle will remain healthy during pregnancy and can optimize the genetic potential of the child. For pregnant women, basically all nutrients require additional, but what often becomes a deficiency is protein energy and some minerals such as iron and calcium. Energy requirements for normal pregnancy can prevent risks during pregnancy. Solutions for pregnant women's food are also needed so that nutritional needs are still met and babies born are healthy (Festi, 2018).

(Fitri Yuniarti, Wahyu Wijayati, 2018) showed that there was a relationship between dietary habits and the incidence of preeclampsia in pregnant women at the Kendari City General Hospital in 2019 p value = 0.000 < = 0.05. Un healthy eating habits have a 5.4 times greater risk of suffering from preeclampsia. The eating habits of pregnant women with food consumption are based on the type of food ingredients consisting of staple foods, protein sources, vegetables, fruits, and based on daily frequency. The eating habits of pregnant women can usually be judged by the type of food they consume. One of the habits of healthy living is to eat foods that contain sources of energy, carbohydrates, fats, proteins. Meanwhile, unhealthy living habits with the habit of consuming junk food which contains high fat, high salt, and little protein are factors that trigger preeclampsia.

Researchers assumed that diet is related to the occurrence of preeclampsia, this can be seen from the results of research on pregnant women with a healthy diet, most of them do not experience preeclampsia, while pregnant women with unhealthy eating patterns experience preeclampsia. This condition is caused by pregnant women whose diet is healthy will be able to prevent the occurrence of preeclampsia because the mother knows the benefits of eating patterns by consuming protein intake 70 g / day and the impact that occurs if the mother does not regulate her diet. Meanwhile, pregnant women with unhealthy eating patterns usually consume foods with protein intake < 70 g/day. For this reason, there is a need for intervention or counseling for pregnant women with unhealthy eating patterns to change them to a healthy diet so that mothers can prevent the occurrence of preeclampsia.

5. The Relationship between Stress Levels and Preeclampsia in Pregnant Women at the Cikampek Health Center in 2021

Table 4 The Relationship Between Stress Levels and the Occurrence of Preeclampsia in Pregnant Women at the Cikampek Health Center in 2021

Stress levels	Pre ecklampsia				Total		*p Value*
	Pre eclampsia		Not Pre eclampsia				
	N	%	N	%	N	%	
Low	21	43,8	35	72,9	56	58,3	0,004
Moderate	18	37,5	12	25,0	30	31,2	
Severe	9	18,8	1	2,1	10	10,4	
Total	48	100,0	48	100,0	96	100,0	

The results in table 5 above show that the majority of pregnant women who do not experience preeclampsia have stress levels in the mild category which was 35 people (72.9%). The results of the study using the Chi Square test showed that the significance value of 0.004 was less than 0.05. This means that there was a relationship between stress levels and preeclampsia in pregnant women at the Cikampek Health Center in 2021. Thus the second hypothesis in this study is accepted by the results of empirical research.

The results of the study (Basri et al., 2018) obtained Chi-Square results with a probability of 0.000, it can be concluded that there was a significant relationship between stress conditions and the incidence of hypertension in pregnant women. This can be concluded because stress conditions increase the sympathetic nerves which then increase blood pressure gradually, meaning that the more severe the stress condition, the higher the blood pressure. Stress is a feeling of fear and anxiety from the body and feelings towards changes in the environment. If there is something that threatens physiologically the pituitary gland of the brain will send endocrine gland hormones into the blood, this hormone functions to activate the hormones adrenaline and hydrocostisone, so that the body can adjust to the changes that occur.

The results of a further study conducted by (Astin et al., 2019) in their research found a p-value of 0.000 which means that there was a relationship between pregnancy stress and the incidence of hypertension in pregnant women. With the results of OR = 6.044, it means that pregnant women who experience pregnancy stress have a 6.0 times chance of suffering from hypertension compared to pregnant women who do not experience pregnancy stress. This is because stress can temporarily increase blood pressure. When scared, nervous, and chased by time, blood pressure usually increases. But in most of the cases it starts to relax and the blood pressure drops back down again. Stress can occur when pregnant women are in a state of tension, feeling depressed, sad, afraid and feeling guilty. This condition will stimulate the kidneys to produce the hormone adrenaline which will spur the heart to pump blood faster and stronger so that blood pressure increases.

Researchers assumed that stress levels are related to the occurrence of preeclampsia, this can be seen from the results of pregnant women who experience stress in the mild category, most of them do not experience preeclampsia, in contrast to pregnant women who experience stress in the moderate and severe categories, most of whom experience preeclampsia. This is because pregnant women do not feel nervous, anxious, anxious, and mothers are able to overcome all the problems they face. Pregnant women who experience stress in the mild category are able to overcome all the problems faced during pregnancy, so the mother can prevent the occurrence of preeclampsia.

IV. Conclusion

The prevalence of pregnant women with preeclampsia at the Cikampek Health Center in 2021 was 16.1%, most of the pregnant women who have an unhealthy eating pattern which was 46.9%. And the majority of pregnant women who have a stress level with a mild category of 58.3%.

There was a significant relationship between diet and preeclampsia in pregnant women at the Cikampek Health Center in 2021 with a p-value of 0.000. And there was significant relationship between stress levels and preeclampsia in pregnant women at the Cikampek Health Center in 2021 with a p-value of 0.004.

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