Factors Related To the Pre-eclampsia Case in Oesapa Health Center

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Abstract

Pre-eclampsia is a special condition during pregnancy where hypertension and proteinuria occur after 20 weeks of gestation in mothers who have had normal blood pressure. The number of pregnant women with pre-eclampsia in the Oesapa Health Center since 2014-2015 has increased. The purpose of the study was to determine the factors associated with the incidence of pre-eclampsia in the Oesapa Health Center. This study is an analytic observational study with a case control research design through a retrospective approach. Bivariate data analysis with Chi Square Test and multivariate analysis with Logistic Regression. Bivariate test results obtained data that there are 3 variables that have a relationship with the incidence of pre-eclampsia in pregnant women, namely age (p value 0,000; p $<\alpha$), gravida status (p value 0,001) and Record of hypertension in the family (p value 0,000). Two variables did not have a relationship between the incidence of pre-eclampsia in pregnant women, namely education (p value 0.488; p$> \alpha$) and respondent's work (p value 0.899). In the multivariate analysis, the factor that most influence the incidence of pre-eclampsia is age (p value 0,000). Health workers need to improve antenatal care, so that they can take maximum preventive action against all risky pregnant women.

Keywords: Risk factors; pregnant women; pre-eclampsia.

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1. Introduction

Pre-eclampsia is a collection of symptoms that appear in pregnant women, childbirth, and during the puerperium period, which consists of three symptoms, namely hypertension, proteinuria and edema sometimes accompanied by convulsions to coma [21].

World Health Organization (2008) estimates that worldwide more than 500,000 mothers die each year during pregnancy or childbirth, one of the causes of maternal morbidity and mortality is pre-eclampsia with incidence rates ranging from 0.5% -38.4%. In developed countries the incidence of pre-eclampsia ranges from 6-7%, eclampsia 0.1% -0.7%, whereas in developing countries the maternal mortality rate caused by pre-eclampsia and eclampsia is still quite high [15].

In Indonesia, based on the Indonesian Demographic and Health Survey (IDHS) in 2012, MMR (which is associated with pregnancy, childbirth and childbirth) amounted to 359 per 100,000 live births. This figure is still quite high when compared to neighboring countries in the ASEAN Region. Maternal mortality in Indonesia is still dominated by three main causes of death, namely bleeding, hypertension in pregnancy (HDK), and infection. The current proportion has changed, where bleeding and infection tend to decrease while hypertension in pregnancy (HDK) has increased in proportion. More than 25% of maternal deaths in Indonesia in 2013 were caused by hypertension in pregnancy [6].

East Nusa Tenggara Province (NTT) is one of the provinces where maternal mortality and morbidity rates are high with an increase in MMR in 2010 from 306 per 100,000 live births to 536 per 100,000 live births. When compared with the national figure of 259 per 100,000 live births, AKI in NTT province is very high, therefore through the Governor's Regulation, the Provincial Health Service launched the Revolusi KIA (Revolusi KIA) health program in 2009 to reduce maternal mortality and morbidity. This program is quite successful because according to the Provincial Health Service Profile report, MMR in East Nusa Tenggara during the 2011-2014 period decreased from 200 per 100,000 live births to 169 per 100,000 live births. It is inversely proportional to the Maternal Mortality Rate (MMR) in Kota Kupang which experienced an increase in 2014, namely 81 / 100,000 live births, when compared to 2013 which amounted to 61 / 100,000 live births. The absolute number of maternal deaths in 2014 was 7 cases consisting of 3 deaths of pregnant women caused by bleeding, one case of death of pregnant women due to tuberculosis, one case of death of pregnant women due to heart problems, one case of pregnant women due to sepsis, one case of death pregnant women because of kidney failure [3, 13].

Oesapa Health Center is one of the health centers in the city of Kupang which has a wide working area. Based on data obtained from the Oesapa Central Health Community, number of pregnant women's visits in 2014 amounted to 1640, the number of pregnant women with pre-eclampsia was 41 people. In 2015 the number of visits of pregnant women in 1732 with the number of pre-eclampsia reached 51 people. The cause of pre-eclampsia is not yet known. Factors associated with pre-eclampsia include maternal age, education, gravida status, poor economy, pre-eclampsia Record, multiple pregnancies, diabetes, pregnant women with concurrent pregnancy disease [9, 12]. Mild pre-eclampsia that is not treated properly will lead to severe pre-eclampsia, causing eclampsia which can endanger the safety of the mother and fetal growth, causing premature birth [12].

Events Hypertension in pregnancy varies in various regions, especially those related to diet and general health. The custom of NTT people, especially pregnant women who often consume foods with high salt, is one of the causes of pre-eclampsia during pregnancy. In addition, there are some customs that harm health such as childbirth that is still being helped by traditional healers. Nurses as health workers must address this matter wisely, so that they don't offend cultural wisdom that has existed for a long time. The role of nurses as educators is very important in providing health education not only for mothers of pregnant women and their families but the wider community.

2. Method

The design of this study is observational analytic with a case control research design through a retrospective approach. The retrospective approach is an approach that tries to look back, meaning that data collection starts from the effects or consequences that have occurred which are then traced back to the cause or the variables related to that effect [10].

The case samples in this study were pregnant women who suffered from preeclampsia recorded in the medical record at the Oesapa Community Health Center for the period January-December 2015, which was 51 cases. While the control samples in this study were some pregnant women who did not suffer from preeclampsia recorded in the medical record at the Oesapa Health Center for the period of January to December 2015, as many as 102 people. The sampling technique used was purposive sampling. Sampling is based on criteria determined by the researcher to be considered to represent the population characteristics of the population. Data analysis was done by uni-variate, bivariate with statistical tests used were Chi Square (α = 0.05) and multivariate with Logistic Regression test to see the most influential independent variables.

3. Results and Discussion

Table 1: Distribution of frequency of age, education, gravid status, occupation, record of hypertension In the family of pregnant women

Variable		Amount	Percentage (%)
Age :	< 20 and > 35 years old	78	51
	20-35 years old	75	49
Education	Lower to Average	134	87,6
	Upper	19	12,4
Gravida	Primigravida	55	35,9
	Multigravida	98	64,1
Occupation	Unemployed	110	71,9
	Employed	43	28,1
Record of family hypertension	No record	114	74,5
	Health record	39	25,5

Based on Table 1, it is known that most pregnant women aged <20 and> 35 years are 78 people (51%). Most pregnant women have a lower secondary education level of 134 people (87.6%), most pregnant women have multigravida gravid status of 98 people (64.1%), most of the non-working pregnant women as many as 110 people (71.9 %), most pregnant women do not have a record of hypertension in the family of 114 people (74.5%).

Table 2: Relationship of age, education, gravid status, occupation, record of hypertension in families of pregnant women with the incidence of pre-eclampsia in pregnant women

No	Variable	Pre-eclampsia case				Total		*P value*
		Cases		**Control**				
		n	%	n	%	N	%	
1	**Age**							
	<20 and > 35 y old	41	52,6	37	47,4	78	100	0,000
	20-35 years old	10	13,3	65	86,7	75	100	
2	**Education**							
	Middle	46	34,3	88	65,7	134	100	0.488
	High	5	26,3	14	73,7	19	100	
3	**Gravid Status**							
	Primigravida	28	50,9	27	49,1	55	100	0,001
	Multigravida	23	23,5	75	76,5	98	100	
4	**Occupation**							
	Unemployed	37	33,6	73	66,4	110	100	0,889
	Employed	14	32,6	29	67,4	43	100	
5	**Record of family hypertension**							
	No record	12	10,5	102	89,5	114	100	0,000
	Health record	39	100	0	0,0	39	100	

Based on table 2, the analysis of the relationship between age and the incidence of pre-eclampsia in pregnant women was obtained by respondents aged <20 years and> 35 years experiencing pre-eclampsia in pregnancy as many as 41 people (52.6%) and respondents aged 20-35 years of having pre-eclampsia in pregnancy were 10 people (13.3%). Chi Square statistical test results obtained p = 0,000 (p <α) can be concluded statistically there is a relationship between the age of pregnant women with the incidence of pre-eclampsia. The results of this study are reinforced by the results of research conducted by Haryani [5], which states that there is a relationship between age and the incidence of pre-eclampsia.

The results of this study prove the Lowdermilk theory [12] states that prospective young mothers who are less than 15 years old have a 60% mortality rate compared to women over the age of 20 years. The increased

likelihood of chronic diseases and complications that arise makes older women at risk. Pre-eclampsia is one of the complications of an age that is too young and old. The results of this study also prove the theory of Sastrawinata and his colleagues [14] which states that the age below 20 years and over 35 years is a risky age. The ideal age for a woman to get pregnant is 20-35 years old because at this age is a healthy age of reproduction where all reproductive organs are mature so a woman can accept her pregnancy. A woman who is pregnant at the age of adolescence and at an older age is at risk of complications during pregnancy, childbirth and the puerperium, wherein the teenage reproductive organs are not yet mature and pregnant women with old age have a reduced reproductive condition. At the age of too old pregnant women also tend to get other diseases in their bodies such as pre-eclampsia and eclampsia.

The results of the analysis of the relationship between education and the incidence of pre-eclampsia in pregnant women were 46 respondents (34.3%) and those with a higher education background who experienced pre-eclampsia in pre-eclampsia in pregnancy. eclampsia in pregnancy was 5 people (26.3%). The results of the Chi Square statistical test showed that $p = 0.488$ ($p > \alpha$) can be concluded statistically there was no correlation between the age of pregnant women and the incidence of pre-eclampsia. The results of this study are different from the pre-eclampsia study Setiawati and his colleagues [17] which states that there is a significant relationship to the education variable.

The results of this study are different from the opinion of Notoadmojo [10] which states that education is an attempt to influence others so that the formation of health behavior with better knowledge, then the behavior is getting better. But the results of this study are the same as the same research as Saraswati [15] who stated that education has no significant relationship with the incidence of pre-eclampsia in pregnant women.

Education is not a risk factor that is directly related to pre-eclampsia. However, if pregnant women are exposed to information about their pregnancies, then it can make pregnant women understand more about maintaining health during pregnancy and knowledge also becomes the basis for pregnant women to adhere to regular pregnancy checks. Based on the observations of researchers during the field, respondents who suffer from pre-eclampsia do not necessarily have low knowledge, especially about pre-eclampsia, because every pregnant woman who is at risk of pregnancy is always given health education by health workers to carry out regular antenatal examinations, so there is no relationship between the education of pregnant women and the incidence of pre-eclampsia.

The results of the analysis of the relationship between gravida status and the incidence of pre-eclampsia in pregnant women were 28 people (50.9%) out of 55 respondents in the primigravida group who experienced pre-eclampsia in their pregnancy. While as many as 23 people (23.5%) of the 98 respondents in the multigravida group experienced pre-eclampsia in their pregnancy. Chi Square statistical test results obtained $p = 0.001$ ($p < \alpha$) can be concluded statistically there is a relationship between the gravida status of pregnant women with the incidence of pre-eclampsia. The results of this study are consistent with the study of Kurniasari [7] which states that there is a relationship between gravida status and the incidence of preeclampsia. The results of this study prove Lowdermilk [12], states that pre-eclampsia is generally a primigravid disease which may not be the same cause in all women. According to Manuaba [8] internationally the incidence of hypertension in pregnancy in

primigravida is 7-12% while multigravida pregnancy is 5½-8%.

A woman who has a high number of pregnancies, the number of births is also high so that it will cause a decrease in the function of the reproductive organs so that the risk of complications during pregnancy, especially in the old multigravidas. In primigravida tend to experience stress in the face of labor so that it will cause the release of the hormone corticotropic-releasing hormone (CRH) in the hypothalamus which stimulates increased blood pressure. In pre-eclampsia pregnancies, the refractory power of blood vessels in vasoconstriction decreases, so the ability of blood vessels to be sensitive to vasopressor material.

The results of the analysis of the relationship between work and the incidence of pre-eclampsia in pregnant women obtained 37 respondents who had a non-working background experience pre-eclampsia in their pregnancies (33.6%) and 14 respondents who worked pre-eclampsia in their pregnancies. people (32.6%). The results of the Chi Square statistical test showed that p = 0.899 (p <α) can be concluded statistically there is no correlation between employment status and the incidence of pre-eclampsia. The results of this study are different from Wardani's pre-eclampsia study [20] which states that there is a significant relationship between the work of pregnant women and the incidence of preeclampsia. The results of this study are different from the opinion of Arsinah [1] which states that economic levels affect the condition of pregnant women both physically and psychologically. Mothers with good economic conditions can meet nutritional needs and are not burdened with labor costs. According to the assumption that researchers of pregnant women who have jobs can fulfill adequate nutritional needs for the growth and development of their babies and at the same time prepare the mother to face childbirth safely. Poor economic conditions or poverty not only cause pregnant women to experience difficulties in meeting balanced nutritional needs, but will prevent pregnant women from making antenatal care visits. The results of this study are the same as the study of Saraswati [15] which states that work does not have a significant relationship with the incidence of pre-eclampsia.

Analysis of the relationship between hypertension in families with the incidence of pre-eclampsia in pregnant women was obtained as many as 12 people (10.5%) of 114 respondents who did not have a Record of hypertension having pre-eclampsia in their pregnancy. While as many as 39 people (100%) of 39 respondents who had a Record of hypertension had pre-eclampsia in their pregnancy. This study is in accordance with Saraswati [15] which states that there is a relationship between the Record of hypertensive ancestry in families with the incidence of preeclampsia. The results of this study prove that Sarwono's theory [16] which states the family Record of having pre-eclampsia is one of the factors associated with pre-eclampsia. The mother's genotype determines the occurrence of hypertension in pregnancy. Where mothers with pre-eclampsia 26% of their daughters will experience pre-eclampsia and 8% of their daughters-in-law will experience pre-eclampsia. Hereditary Record of hypertension is one of the factors that influence the occurrence of pre-eclampsia in pregnant women. But when viewed from the habits of the people of East Nusa Tenggara, especially pregnant women who like to consume high-salt foods such as salted fish, lifestyle is one of the supporting factors in pregnant women who initially have a Record of hypertension. People in this era are more concerned with taste by ignoring the quality of food consumed. So it is important for pregnant women who already have a risk, to pay attention to their diet in order to improve the health of babies and mothers, especially in the face of labor and the initial capital of breastfeeding.

Table 3: Results of multivariate analysis of factors related to the incidence of pre-eclampsia in pregnant women

	B	SE	Wald	Df	Sig	Exp (B)
Age	-1,755	0,435	16,247	1	0,000	0,173
Gravid Status	-0,568	1,963	1,963	1	0161	0,567

Table 3. shows that the most significant factor associated with the incidence of pre-eclampsia is the value of p <0.05 is the age of pregnant women (p = 0,000). The results of this study are in accordance with the study of Novianti [11], where there is an influence against pre-eclampsia with the value of Nagelkerke R square 0.234.

4. Conclusions And Suggestions

The results showed that the majority of respondents aged <20 years and> 35 years were 51%. The majority of respondents with secondary education level were 87.6%, respondents with multigravida gravid status were 64.1%, and respondents did not have hypertension in the family as much as 74.5%, respondents did not work as much as 72%. There is a relationship between age, education, gravid status, and the work of mothers with the incidence of pre-eclampsia at Oesapa Health Center. The independent variable that most influences the incidence of pre-eclampsia in Oesapa Health Center is the age factor.

For health workers, it is necessary to further improve antenatal care in the form of education for every pregnant woman, so that they can take preventive measures for all pregnant women who are at risk. Health workers can also work with the church especially the family apostolate section during wedding courses to provide information on reproductive health, especially preparation for healthy pregnancies. Further research is expected to be able to use primary data and look at other factors related to pre-eclampsia such as economics, multiple pregnancies, hydatidiform mole, and research on the knowledge and attitudes of health workers to the incidence of pre-eclampsia.

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