HEALTH LITERACY MODEL IN EFFORTS TO PREVENT AND CONTROL PREECLAMPSIA IN PREGNANT WOMEN TO IMPROVE THE WELFARE OF MOTHER AND CHILD

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Abstract

Health problems that occur in Mothers and Children to date remain an international health problem whose handling is included in the Sustainable Development Goals (SDGs). One of the health problems during pregnancy that is still a serious concern is preeclampsia. Preeclampsia is hypertension that occurs in pregnant women at 20 weeks of gestation or after delivery, characterized by an increase in blood pressure to 140/90 mmHg. Preeclampsia is a major cause of maternal and perinatal morbidity and mortality. The general objective of this research is to analyze the health literacy model in an effort to prevent and control preeclampsia in pregnant women to improve the welfare of mothers and children. This study used 2 research methods, namely an analytic study with a cross sectional design and a Quasi Experiment with a Pretest–Posttest Design With Control Group design.

***Keywords**: Health Literacy, Preeclampsia, Mother and Child Welfare*

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1. Introduction

Health problems that occur in Mothers and Children to date remain an international health problem whose handling is included in the Sustainable Development Goals (SDGs). One of the health problems during pregnancy that is still a serious concern is preeclampsia. Preeclampsia is hypertension that occurs in pregnant women at 20 weeks of gestation or after delivery, characterized by an increase in blood pressure to 140/90 mmHg (Robson, 2018). Preeclampsia is a major cause of maternal and perinatal morbidity and mortality. Its prevalence has steadily increased over the last few decades. Preeclampsia frequently occurs in 5% to 7% of pregnancies, representing approximately 10,000,000 pregnancies per year worldwide. The incidence of preeclampsia increases by 25% in populations with risk factors such as being overweight (obese) before pregnancy, diabetes mellitus, multiple births, and increasing maternal age (Society for Maternal-Fetal Medicine (SMFM), 2021).

Other data reported by WHO, that globally around 12% of mothers die from preeclampsia. The incidence of preeclampsia is seven times higher in developing countries than in developed countries. The prevalence of preeclampsia ranges from 1.8% to 16.7% in developing countries (Mou, 2021).

The 2020 Indonesia Health Profile reports that the number of maternal deaths collected from the registration of the family health program at the Ministry of Health in 2020 is 4,627 deaths. This number shows an increase compared to 2019 of 4,221 deaths. Based on the cause, the majority of maternal deaths in 2020 are caused by 1,330 cases of bleeding, 1,110 cases of hypertension in pregnancy / preeclampsia, and 230 cases of circulatory system disorders (Kemenkes RI, 2021).

The incidence of preeclampsia in pregnant women in North Sumatra Province accounted for 23.7% of maternal deaths, and North Sumatra was included in the five regions that contributed the most to deaths in Indonesia (Khodijah & Lumbanraja, 2021). In detail, the

most cases of maternal death in North Sumatra Province in 2020 were caused by bleeding (73 people), hypertension during pregnancy/preeclampsia (54 people), other causes that are not detailed and the exact cause is known (47 people), infection (4 people), circulatory system disorders (8 people), and metabolic disorders (1 person) (Dinkes Provsu, 2021).

This research will be carried out in two hospitals in Labuhanbatu Regency, namely Rantauprapat Hospital and Elpi Al Azis Hospital. Based on data from the two hospitals, the number of women who had preeclampsia in the last 3 years has increased, as shown in the following table.

Table 1. Number of Preeclampsia Cases in Pregnant Women at Rantauprapat Hospital and Elpi Al Azis Hospital

No	Year	Rantauprapat Hospital		MSW Elpi Al Azis	
		Case	Death	Case	Death
1	Year 2019	14	1	11	1
2	Year 2020	19	2	10	0
3	Year 2021	12	1	6	2
Sum		45	4	27	3

Source: Rantauprapat Hospital and Elpi Al Azis Hospital

During the last 3 years, in Rantauprapat Hospital there were 45 cases of pregnant women with preeclampsia and 4 of them died, while in Elpi Al Azis General Hospital there were slightly more, namely 27 cases of preeclampsia and 3 cases of death. Approximately 20% of pregnant women who experience preeclampsia experience preterm labor. The causes of preeclampsia are not known for certain, but it is suspected that there are abnormalities in the development and function of the placenta, which is the organ that functions to distribute blood and nutrition to the fetus.

The scope of health services, especially those related to maternal and child health conditions, is indeed a serious concern for the government, but it still demands more strategic efforts. One form or method that is expected to be used is the health literacy model approach. Health literacy is a basic subject related to good health knowledge and has a very large influence on individual healthy behavior (Doyle & Fullam, 2012). According to Nutbeam (2006), Health literacy is a concept of health communication and health education based on behavior that has the aim of not only changing lifestyles from negative to positive lifestyles but also achieving awareness of the effects of health and encouraging individuals and communities to take action to overcome problems related to health. with health.

Based on evidence based, pregnant women with limited health literacy tend not to consume folic acid (Fe tablets) during pregnancy or do not perform pregnancy care at a later gestational age, and are more likely to be hospitalized (Endres, et.al, 2004). In addition, women with limited health literacy are less likely to breastfeed during the first two months after birth (Kaufman, et al., 2001). At the same time, women with adequate levels of health literacy have a better understanding of the dangers of smoking during pregnancy, and the prevention of preeclampsia in pregnancy (Arnold et al., 2001). For women with limited health literacy, written information about antenatal care is more difficult to understand. Thus, these women tend to make medical decisions not based on health information (Kilfoyle, et. al., 2016). The better a woman's health literacy, the greater the opportunity for her to find out information about women's health, in this case about preeclampsia. To improve maternal health literacy, health workers (doctors, nurses, midwives) can use brochures (leaflets) or pamphlets containing information on pregnancy and preeclampsia.

Based on data from the Center for Research on Education and Culture Policy (Puslitjakdikbud) in 2019, the level of literacy activity in Indonesian society is still relatively low. There are three dimensions showing low scores, namely the access dimension, the alternative dimension, and the cultural dimension, only the

skill dimension is good enough. Out of 34 provinces in Indonesia, 9 provinces (26%) fall into the moderate literacy activity category; 24 provinces (71%) are in the low category; and 1 province (3%) is in the very low category. This means that most of the provinces are at low literacy activity levels and none of the provinces are at high and very high literacy activity levels. The literacy index of the people of North Sumatra Province is included in low literacy activities with a score of 35.73 (index number between 20.01 – 40.00).

The low interest in reading or literacy that occurs in Indonesia is caused by several factors. The first factor, the low reading culture from an early age. Second, educational facilities/reading centers are still minimal. Finally, there is still a lack of book production in Indonesia (Anisa, et. al., 2021). In literacy, there are several levels of information that describe a person's position in understanding health information. At the basic level, individuals have adequate basic skills in writing and reading so that they function effectively in everyday life. The next level is called communicative or interactive literacy, at this level the individual has the skills to communicate the health information he already has to the surrounding environment in his daily activities. Furthermore, at the critical literacy level, individuals have the ability to critically analyze information, use this information to be able to control events and situations in their daily lives.

Literature Review

Preeclampsia is one of the main causes of maternal morbidity and mortality in the world. Preeclampsia is hypertension which generally occurs after 20 weeks of gestation accompanied by proteinuria. In the absence of proteinuria, preeclampsia was diagnosed in association with hepatic dysfunction, thrombocytopenia, pulmonary edema, new-onset renal dysfunction, or new-onset brain or visual disturbances. This can lead to severe morbidity, chronic disability, and even death for the mother and baby. Additionally, it is associated with an increased risk of cardiovascular disease and type 2 diabetes later in life (Mou, 2021).

Preeclampsia is hypertension that arises after 20 weeks of pregnancy (Wiknjosastro, 2018). Preeclampsia is hypertension in pregnancy which is characterized by blood pressure ≥ 140/90 mmHg after 20 weeks of gestation, accompanied by proteinuria ≥ 300 mg/24 hours (Saifuddin, 2015).

Health Literacy

The Great Indonesian Dictionary cited (Puslitjakdikbud, 2019) mentions two meanings of the term literacy, namely: (1) the ability to write and read; (2) knowledge or skills in a particular field or activity. The term literacy and its meaning seem to be an adaptation of the English language: literacy, which means: (1) The ability to read and write; (2) Competence or knowledge in a specified area.

Health Literacy or health literacy is broadly defined as "....the knowledge, motivation and competence of people to access, understand, assess and apply health information to make judgments and make decisions in everyday life regarding health care, disease prevention and promotion health to maintain or improve quality of life over the course of life" (Sorensen et al., 2012). The National Assessment of Adults Literacy in the United States defines health literacy, namely someone who is able to search, find, understand and assess health information from electronic sources and apply the knowledge that has been obtained to overcome or solve health problems. In essence, a person's health literacy is capable of having three skills, namely scientific literacy, media literacy and computer literacy (White, 2008).

The impact of low health literacy is as follows:

Having a poor health status, for example smoking in any place, not giving exclusive breastfeeding to their baby, and when the child is sick they don't come to the health service (Weist, 2007). Higher rates of hospitalization and death and longer stay in hospital (Baker, 2002). Reduced capacity to manage chronic diseases resulting in delays in the search for care. Non-compliance with the treatment plan. Tends to be wrong in treatment, this situation makes it more difficult for someone to take several types of drugs and makes patients who undergo less and too excessive treatment and patients will also experience the danger of drug side effects (Wolf & et. al., 2007).

A comprehensive health literacy conceptual model developed by Sorensen is based on 17 definitions of health literacy and 12 conceptual models. This model combines two models, namely the conceptual model and the logical

model to produce a health literacy concept based on evidence that can be used not only in health care but also in public health. Sorensen's health literacy model is described as follows:

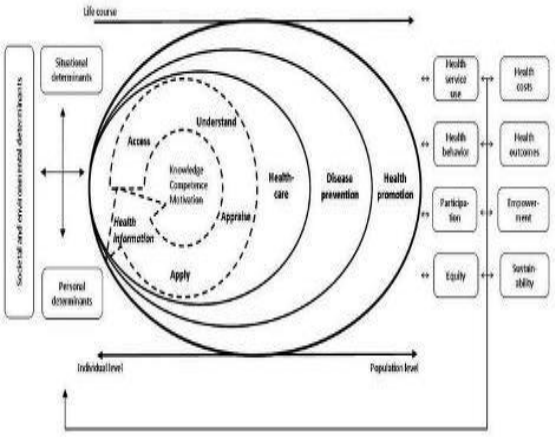

Figure 1. Health Literacy Integration Model from Sorensen et al., (2012)

According to Sorensen et al., (2012), Health literacy includes the knowledge, motivation and competence of the community to access, understand, evaluate and apply health information regarding health care, disease prevention and health promotion in order to maintain or improve the quality of life at the individual and community levels throughout their lives.

Formulation of the problem

1. What is the prevalence of the risk of preeclampsia in pregnant women and the relationship between personal determinants, social determinants, situational determinants and access to health information with the risk of preeclampsia in improving the welfare of mothers and children in Rantauprapat Hospital and Elpi Al Azis General Hospital?
2. How is health literacy preventing preeclampsia and the relationship between personal determinants, social determinants, situational determinants and access to health information with health literacy preventing and controlling preeclampsia in pregnant women in improving the welfare of mothers and children in Rantauprapat Hospital and Elpi Al Azis Hospital?
3. What is the health literacy model in efforts to prevent and control preeclampsia in pregnant women to improve the welfare of mothers and children at Rantauprapat Hospital and Elpi Al Azis Hospital?
4. Are there differences in health literacy (knowledge and skills) of pregnant women in preventing and controlling preeclampsia before and after being given educational interventions (pretest-posttest) at Rantauprapat Hospital and Elpi Al Azis Hospital?
5. Are there differences in the health literacy (knowledge and skills) of pregnant women in preventing and controlling preeclampsia in the intervention group and the control group at Rantauprapat Hospital and Elpi Al Azis Hospital?

Research Objectives

The general objective of this research is to analyze the health literacy model in an effort to prevent and control preeclampsia in pregnant women to improve the welfare of mothers and children at Rantauprapat Hospital and Elpi Al Azis Hospital.

Research Benefits

This research will produce a model and module of health literacy to prevent and control preeclampsia in pregnant women. The benefits of this research can help pregnant women in making decisions, pregnant women become more information literate, and can create new knowledge. The health literacy module can be a guide for health workers, especially midwives in educating pregnant women in efforts to prevent and control preeclampsia in improving maternal and child health.

2. Methods

This study used 2 research methods, namely an analytic study with a cross sectional design and a Quasi Experiment with a Pretest–Posttest Design With Control Group design. The analytic study with a cross-sectional design as stage I aims to identify the risk of preeclampsia in pregnant women, the level of health literacy in preventing preeclampsia and finding a model of health literacy in efforts to prevent preeclampsia. knowledge and skills of pregnant women in preventing and controlling preeclampsia before and after being given educational interventions (pretest-posttest) as well as comparing the knowledge and skills of pregnant women in the intervention group and the control group.

3. Results and Discussion

Table 1. Pre-test and Post-test Results in the Experimental Group and Control Group

Table of experimental group pre-test data values

Min Value	Value Max	Average Rating	Value Standard Deviation	Variance Value	Value Median
23	40	30,66	5,126	26,227	30,00

Table of *experimental group* post-test data values

Min value	value Max	average rating	value Standard Deviation	Variance value	Value Median
28	43	36,05	3,937	15,497	37,50

Control group *pre-test* data value table

Min value	value Max	average rating	value Standard Deviation	Variance value	Value Median
25	38	30,53	3,960	15,680	30,00

Table of post-test *data values of* the control group

Min Value	Value Max	Average Rating	Value Standard Deviation	Variance Value	Value Median
30	45	36,18	3,437	12,061	37,50

Based on the analysis of the table above, it can be seen that the descriptive results of the experimental group Pre-test experimental group of 19 participants minimum value 23 maximum value 40 mean value 36.66 standard deviation value 5.126 variant value 26.279 median value 30.00 while post value -test experimental group 19 participants minimum value 28 maximum value 43 average 36.05 standard deviation value 3.937 variant value 15.497 median value 37.50.

While descriptive data from the control group (pre-test control group) from 19 participants minimum score 25 maximum score 38 mean value 30.53 standard deviation value 3.960 variant value 15.680 median value 30.00 and post-test value of the control group from 19 participants minimum score 30 maximum score 45 average value 36.18 standard deviation value 3.473 variant value 12.061 median value 37.50.

Normality Test

Table 2. Normality Testing

Tests of Normality

Kolmogorov-Smirnov[a]	Shapiro-Wilk					
	Statistic	Df	Sig.	Statistic	Df	Sig.
Preeks	,130	19	,200*	,943	19	,299
Poseks	,222	19	,014	,936	19	,226
Prekon	,184	19	,088	,903	19	,056
Poskon	,194	19	,057	,927	19	,151

Based on the table above, it can be explained that the significant value (Pvalue) of the pre-test in the experimental group is greater than the value of a (5%) or 0.05 in other words Sig > a (0.76

> 0.05) the significant value (Pvalue) post-test is greater than the value of a (5%) or 0.05 in other words Sig > a (0.62 > 0.05) and based on the table above it can be explained that the significant value (Pvalue) of the pretest in the control group is greater than the value of a (5%) or 0.05 in other words Sig > a (0.54 > 0.05), the significant value (Pvalue) of the post-test greater than the value of a (5%) or 0.05 in other words Sig > a (0.67 > 0.05) therefore the calculation of the difference test uses the t-test."

In the experimental group, the pre-test of the experimental group of 19 participants had a minimum score of 23, a maximum score of 40, an average value of 36.66, a standard deviation value of 5,126, a variant value, 26,279, a median value of 30.00, while the post-test score for the experimental group, 19 participants, a minimum value of 28 points. maximum 43 mean 36.05 standard deviation value 3.937 variant value 15.497 median value 37.50. while in the control group, the pre-test control group of 19 participants had a minimum score of 25 a maximum score of 38 an average value of 30.53 a standard deviation value of 3.960 a variant value of 15.680 a median value of 30.00 and a post-test control group score of 19 participants a minimum value 30 maximum value 45 average value 36.18 standard deviation value 3.473 variant value 12.061 median value 37.50.

And based on table 2 it is known that the pre-test significance (Pvalue) in the experimental group is greater than the value of a (5%) or 0.05 in other words Sig > a (0.299 > 0.05), a significant value (Pvalue) post-test greater than the value a (5%) or 0.05 in other words Sig > a (0.226 > 0.05) and based on the table above it can be explained that the pre-test significant value (Pvalue) in the control group is greater than the value a (5%) or 0.05 in other words Sig > a (0.56 > 0.05), the post-test significant value (Pvalue) is greater than the value of a (5%) or 0.05 in other words Sig > a (0.151 > 0.05).

4. Conclusion

There is a significant effect of the application of the health literacy model in efforts to prevent and control preeclampsia in pregnant women to improve the welfare of mothers and children as evidenced by the calculation of the normality test using the Kolmogorov-Smirnov method, Significance is greater than alpha (.000 > 0.05).

The magnitude of the influence of the health literacy model in efforts to prevent and control preeclampsia in pregnant women to improve the welfare of mothers and children is based on calculating the percentage of influence between the pretest and post-test results with a score of 17% for the experimental group and 18% for the control group.

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