



## The Effectiveness of Health Education on Increasing Patient Knowledge About Hypertension in Kutalimbaru Village, Deli Serdang Regency

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### Abstract

Hypertension has consistently been a major cause of morbidity and death in various countries and its prevalence continues to increase. This study aims to determine the effectiveness of health education in increasing the knowledge of hypertensive mothers about hypertension in Kutalimbaru Village, Deli Serdang Regency. The research design is a Quasi-experiment with a pre-and post-test design. 70 Systematic random sampling of hypertensive mothers where the treatment group ( $n = 35$ ) and the control group ( $n = 35$ ). The research data is the level of knowledge about hypertensive mothers. Statistical analysis was analysed The SPSS software independent t-test The results showed that after counselling there was an increase in the knowledge of hypertensive mothers about hypertension ( $p\text{-value} = 0.001$ ). Health education is effective in increasing family knowledge about hypertension.

## Introduction

Hypertension contributes to more cardiovascular disease events (CVD) and disability-adjusted life years than any other modifiable risk factor worldwide. The prevalence of hypertension increases with age and the lifetime risk for hypertension exceeds 80% among adults. Decades of research has produced evidence that genetic and environmental exposures contribute to blood pressure (Muntner, 2021; Pramono & Masita, 2021). WHO data in 2012 reported that as many as 74 million people in the world have hypertension, which causes around 51% of elderly deaths due to stroke and 45% of coronary heart disease. Management of hypertension can be done in the form of taking antihypertensive medication, managing diet, exercising, reducing stress, avoiding alcohol, and smoking (Putri & Nasrullah, 2020).

Hypertension is a health problem that causes high maternal morbidity and mortality (Islami et al., 2022). Hypertension is estimated to be the cause of death for around 7.1 million people worldwide or around 23% of total deaths (Dodson et al., 2018; Mills et al., 2016). The prevalence in Indonesia in 2017 was 31.7%, one in three people had hypertension, 76.1% of them were not aware that they had hypertension. The 2018 Riskesdas prevalence of hypertension was 50,162 people, mostly in women 27,021 people, based on the results of measurements in the population aged 18-44 years 14,984, aged 45-55 years 12,560 people and aged over 55 years 22,618 people, and reported 8.8% who were diagnosed, while the rest are undiagnosed (Kishore et al., 2016).

Hypertension that occurs in the long term and continuously can trigger strokes, heart attacks, heart failure and is the main cause of chronic kidney failure. Stroke attacks 36% of the elderly in Indonesia, specifically for haemorrhagic strokes caused by uncontrolled hypertension. The number of deaths due to coronary heart disease caused by uncontrolled hypertension is 42.9%.

So it can be seen that the high rate of complications is the result of ineffective or uncontrolled hypertension treatment at home. This is also related to health knowledge in the family (Prasetya, 2015). Fulfilment of public knowledge about hypertension one way with health education. Health education is an effort to influence and or influence other people, both individuals, groups, or communities, to carry out healthy life behaviors, while operationally, health education is an activity to provide and or improve knowledge, attitudes and community practices in maintaining and improving their own health (Damayanti et al., 2019; Suirvi et al., 2022).

## **Methods**

Researchers conducted a prospective cross-sectional intervention study to determine the effectiveness of health education in increasing the knowledge of mothers with hypertension. Treatment of respondents was carried out in Kutalimbaru Village and Pasar Ten Village, Deli Serdang Regency. A total of 70 samples from all research loci, namely the intervention group (n = 35) and the control group (n = 35). The evaluation was carried out to assess the knowledge of mothers with hypertension (pre test-post test) through a questionnaire. Research in the intervention group was carried out using lecture, role play, and discussion methods. The researchers developed a training curriculum and syllabus before the intervention. The material presented was about hypertension and hydrotherapy. To assess success, a pre-test was carried out before 536ounselling, and a post-test after 536ounselling. The training was carried out for one day. In the control group, before 536ounselling, a pre-test and post-test were carried out to measure the mother's knowledge of hypertension using the same instrument as the intervention group.

## **Results and Discussion**

Kutalimbaru Village is a village in Deli Serdang Regency, with a majority population of the Karo ethnic group, followed by the Javanese, Batak and Mandailing ethnic groups. Residents remain domiciled in the area. Kutalimbaru Village has four hamlets with a population of 1362 men and 2211 women, with 898 heads of households, consisting of three hamlets. The boundaries of the area are to the north of Sukarende Village, to the south of Pasar Ten Village, to the west of Sampe Cita Village, and to the east of Kuala Lau Bicik Village. The distribution of the population is more along the road in Kutalimbaru Village.

To find out the research objectives in Kutalimbaru Village and Pasar Ten Village, certain steps need to be taken, such as conducting a preliminary survey of geographical locations/locations, obtaining information about the condition of the local community, specific information about the condition of women in the climacteric period, and conducting interviews with three women in the climacteric period. Ask about feelings and illnesses experienced. Two out of the three answered that they often experience high blood pressure due to obesity, perhaps these three women said, and what to do if you have high blood pressure, two people answered that you handle it yourself through traditional medicine, one person answered that you sometimes buy medicine at shops/stalls.

The total number of postmenopausal women with hypertension in Pasar Ten village was recorded at 78 people, while in Kutalimbaru village there were 92 people. Most of them live in hamlets one, two and three which are close to taxes and health facilities. From the results of research on the treatment group and the control group it can be seen the characteristics of the respondents as follows:

Table 1. Characteristics of Respondents Based on Education and Occupation

No	Variable	Treatment		Control	
		n	%	n	%
1	Education				
	Elementary	4	5,7	19	27,1
	Middle School	18	25,7	13	18,6
	High School	13	18,6	3	4,3
2	Occupation				
	of Housewives	28	40,0	16	22,9
	Ministry	0	0,0	6	8,6
	Agriculture	0	0,0	12	17,1
	Trade	3	4,3	1	1,4
	Private employee	4	5,7	0	0,0

From table 1 it can be seen that the description of the respondents in the treatment group on the education variable is mostly junior high school 25.7%, while the most jobs are housewives 28%. Based on the description of the respondents in the control group, the most educational variable was SD, 27.1%, while the work variable was mostly housewives, 22.9%.

Table 2. Characteristics of Respondents Based on Age, Weight, Height and BMI

Variable	Minimum	Value Maximum Value	Average	SD
Age (years)	40	65	51,74	6,13
Weight (Kg)	50	89	65,57	7,44
Height (cm)	145	165	153,90	5,28
BMI	22	38	27,75	3,40

From table 2 it can be seen that the average age group of respondents was 51.74, the average weight group of respondents was 65.57, the average height group of respondents was 153.90 and the average BMI of respondents was 3.40.

Table 3. Effect of counseling on knowledge of hypertensive mothers in Kutalimbaru Village, Deli Serdang Regency

Variable	Treatment Mean±SD (n= 35)	Control Mean±SD (n=35)	p value between group
<b>Knowledge</b>			
Prior	57,60 ± 16,00	45,02 ± 7,422	0.001 <sup>a)</sup>
After	80,00 ± 10,862	45,88 ± 7,525	0.048 <sup>a)</sup>

\*Difference within groups (before and after) using paired t test, at significance level of 5%

Difference However, after the intervention was carried out in each treatment group, there was a difference in the mean education knowledge of hypertensive mothers. Statistical t-test shows that the educational knowledge of hypertensive mothers has increased.

Education has a very important role in determining human quality, with education humans gain knowledge and information. The higher a person's education level, the higher the quality of life (Hurlock, 2007). Most of the respondents' occupations are housewives (28%). According to (Mubarak et al., 2006) work affects knowledge. Judging from the type of work that often interacts with other people, they are exposed to more information or knowledge when compared to people without any interaction with other people. Most of the age of the

respondents is the average age group of respondents 51.74. Late adulthood is a time when humans are considered mature, both physiologically, psychologically and cognitively, so that late adulthood is the right age in analyzing and receiving information (Potter & Perry, 2010). A person's age greatly affects a person's ability to receive information and the way one thinks about the information obtained. Increasing age will affect a person's ability to receive information so that a person's mindset will further develop. Most of the respondents' last education was junior high school, meaning that the majority of respondents' educational level was still low. One of the factors that influence knowledge is the level of education, where a higher level of education affects one's perceptions in making decisions and acting (Notoatmodjo, 2011).

The results of the research that has been conducted (Chen et al., 2020) aims to evaluate the effectiveness of health education interventions for controlling blood pressure in the elderly with hypertension. The results of the study showed that before counseling was carried out, most of the respondents had a low level of knowledge, this was probably caused by the mother's lack of knowledge about various hypertension problems that were being experienced, besides that this lack of knowledge was caused by various factors, including: the level of education that was still low, age, and ability to care. The behavior of a person or community regarding, for example health, is determined by the knowledge, attitudes, beliefs, traditions and so on of the person or community concerned. In addition, the availability of facilities, attitudes and behavior of health workers will also support and strengthen the formation of behavior (Lawrence & Marshall, 1991). Health education training on increasing patient knowledge about hypertension increased the mean value of knowledge by 22.4 and participants were in the category good knowledge 80%. Several studies suggest that there is an increase in knowledge between values before and after counseling (Murtadho et al., 2019; Purnomo et al., 2018). This is in line with research put forward by (Lu et al., 2015) interactive education is the most effective strategy in health promotion education programs for hypertensive patients in increasing patient knowledge about hypertension and reducing clinical risk factors to prevent complications related to hypertension. In addition (Connell et al., 2008; Long et al., 2017) Health education is associated with increased knowledge about hypertension. (Tan et al., 2019) Through education, health literacy is increased, thereby increasing compliance so that education increases health literacy which is directly proportional to optimal disease management. (Xiong et al., 2018) Our systematic review found evidence that mHealth interventions improve medication adherence and blood pressure control among people with hypertension.

## Conclusion

Health education is effective in increasing family knowledge about hypertension. Suggestion for academics to be able to conduct research using complementary medicines that exist around the community in improving health status.

## Suggestion

It is necessary to conduct further research with qualitative methods so that the nurse's experience can be explored more deeply.

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