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The Effect of Personal Hypertension Management Program (HMP) Education on Self-Efficacy in Hypertension Management

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ABSTRACT

This study aims to determine the effect of personal hypertension management program education on self-efficacy in hypertension management. This research is a quasy experiment design with a non-equivalent control group design. The number of samples in this study was 30 respondents who were divided into two groups, namely 15 intervention group respondents and 15 control group respondents. Sample grouping in this study was carried out randomly for the experimental group and the control groupThe intervention group is respondents who are given personal hypertension management program education and the control group is respondents who are not given personal hypertension management program education. The data analysis used was the T-test (Independent Sample T-Test). Personal education was conducted for 3 weeks by providing hypertension management program personal education one session per week, for 15-20 minutes. The study found that most respondents (60%) had poor self-efficacy in the intervention group respondents before being given personal education based on a hypertension management program and most respondents (93.3%) had efficacy after being given personal education based on a hypertension management program. From the bivariate analysis results, there is a mean change in self-efficacy in intervention group respondents with the control group, where the mean difference value is 3.067. The T-test value is 2.579 with a p-value = 0.015 where the p-value ≤ 0.05, which means that there is an effect of personal education based on HMP on self-efficacy in respondents after being given personal education interventions based on a hypertension management program. The provision of personal education interventions based on a hypertension management program shows the results of the average change in the self-efficacy of respondents in the intervention group before and after being given personal education based on a hypertension management program and there is no average change in the self-efficacy of respondents in the control group who are not given personal education based on a hypertension management program.

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INTRODUCTION

Hypertension is high blood pressure where systole ≥140 mmHg and diastole ≥90 mmHg [1]. Hypertension is the leading cause of premature death worldwide with a prevalence of 1.13 billion [2]. One third of adults worldwide have hypertension continues to increase every year, it is estimated that by 2025 there will be 1.5 billion people affected by hypertension and it is estimated that every year 9.4 million people die from hypertension and its complications [3]. In Indonesia, hypertension cases are ranked 8th with a prevalence of 26.5% in Asia [4]. According to the Indonesian Health Survey (2018), the prevalence of hypertension in Indonesia was 34.1%, the hypertension rate increased from 25.8% in 2013 to 34.1% in 2018 [5]. The prevalence of hypertension in West Sumatra was 25.1% and the prevalence of hypertension in Pariaman City reached 23.4%.

Hypertension is also called “the silent killer” and is generally known when complications or organ damage have occurred with signs of symptoms that often appear, namely palpitations, headaches, dizziness and visual disturbances [6]. In addition to food factors, behaviors such as lack of physical activity and exercise, smoking factors and stress factors can also cause an increase in blood pressure [7]. One of the efforts that can be made in controlling hypertension and preventing complications is that patients are able to manage themselves or be able to carry out self-care management independently [8]. One of the basic concepts of hypertension management is self-efficacy which will affect hypertensive patients to be able to make changes or adjustments to behavior in achieving hypertension treatment goals [9].

Self-efficacy is an individual's belief in his or her ability to organize and succeed in completing the desired task or being able to overcome a problem [10]. Poor self-efficacy will affect an action in solving health problems and ineffective self-care management behavior in hypertensive patients. One of the roles of nurses in increasing patient self-efficacy is by providing education about the Hypertension Management Program (HMP) to patients [11]. Education is a method used to help someone know the behavior that can affect their health so that they can carry out self-care independently in order to obtain optimal health so that they can apply it in their daily lives. HMP is a team-based and patient-centered integrated care model. One of the goals of HMP is to reduce the number of hypertensive patients with uncontrolled hypertension and to improve the health and well-being of hypertensive patients [12].

HMP is also a guide in overcoming gaps in knowledge or understanding of hypertensive patients, these gaps can be overcome by educating or providing health education to patients about hypertension management including home blood pressure measurement. The action of providing personal Hypertension management program (HMP) education is supported by the concept of nursing theory, namely Dorothea Orem's theory (1971) regarding self-care and self-care deficit where

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hypertensive patients are included in self-care deficit because hypertensive patients are unable to care for or fulfill self-care management effectively [13].

Personal self-care management education is provided based on the HMP and several components of self-care management consisting of self-integration, self-regulation, interaction with health workers and others, blood pressure monitoring and compliance with recommended rules [14]. Hypertension management program (HMP) also involves understanding one's own condition and actively participating in the treatment plan, making different lifestyle choices, such as eating habits, exercise choices, living conditions, and monitoring one's own symptoms.

METHOD

Research Design and Research Sample

This research is a quasi experiment design with a non-equivalent control group design. The sampling technique in this study was non probability sampling, namely purposive sampling. The sample in this study were patients with hypertension who were outpatients at 'Aisyiyah Pariaman Hospital in 2024 who met the inclusion and exclusion criteria with a total of 30 respondents. The sample grouping in this study was done randomly for the experimental and control groups.

This research was conducted in the Internal Medicine Poly room of 'Aisyiyah Pariaman Hospital and continued at the home of each respondent (homecare). Data collection and initial survey research began from May to June and this study was conducted for 4 weeks (October 11 to November 08, 2024). Personal education based on HMP was conducted in 3 sessions for 3 weeks (1 session per week) with the time needed for approximately 15-20 minutes per session and in week four a posttest measurement of self-efficacy was conducted.

Research Instruments

This study used a self-efficacy questionnaire in hypertensive patients designed using the General Self-Efficacy Scale (GSE) measurement scale and other instruments used in this study were observation sheets [15]. The GSE questionnaire has a total score ranging between 10 and 40, with a point value of 1: Not at all true, 2: Hardly true, 3: Quite true, 4: Very true. If the total score result is <50% of the total score limit) then the self-efficacy result is not good, if the total score is ≥20 (≥50% of the total score limit) then the result shows good self-efficacy [16].

Research Implementation Procedure

The study was conducted for 4 weeks and personal education based on HMP was conducted 3 sessions for 3 weeks (1 session a week) with the time needed for approximately 15-20 minutes per session and in week 4 (four) blood pressure measurements were taken and posttest measurements of self-efficacy. This research was conducted by providing direct education to patients using leaflets, employing the discussion method, and gathering feedback from respondents on what the researcher

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had presented. In providing personal education based on HMP, researchers use leaflets containing hypertension self-care management material based on HMP [17]. The description of the provision of personal self-care management education is as follows:

Table 1
Overview of personal education delivery based on HMP

Week	Session	Personal Education Material	Time
I	I	Material about hypertension	(15-20 minutes)
II	II	Materials about self care management based on HMP	(15-20 minutes)
III	III	Materials about the components of self-care management	(15-20 minutes)
IV	-	Blood Pressure Check	(5-10 minutes)

The final stage of this study was to conduct a posttest on respondents after receiving personalized education interventions based on HMP. Respondents were measured posttest using the general self-efficacy (GSE) scale questionnaire in week 4 (four). After the posttest assessment was carried out on the intervention group and control group respondents, the respondents' blood pressure was checked. And then the researcher will provide a module on self-care management based on HMP.

After 4 weeks of intervention, the researchers also provided a module on hypertension management to obtain better evaluation results and increase respondents' knowledge about hypertension management.

Data Analysis

Univariate Analysis

This analysis was carried out with descriptive statistical tests to determine the self-efficacy of intervention group and control group respondents before (pretest) and after (posttest) being given personal education based on HMP. In general, this analysis only produces a frequency distribution and percentage of each variable studied [18].

Bivariate Analysis

Bivariate analysis is used to prove the hypothesis. Before the analysis test was carried out to prove the hypothesis, the data normality test was first carried out using the Shapiro-Wilk test with a meaning value of $p>0.05$.

Table 2
Shapiro-Wilk Normality Test Results

Blood Pressure	Statistical Value	*P*	*α*	Description
Self-efficacy	0.907	0.123	0.05	Normal

From the results of the data normality test carried out, a value of $p = 0.123$ was obtained where $p > 0.05$, which means that the data was normally distributed. If the data is normally distributed, the analysis test used is a parametric test, namely the T test (independent sample t-test) with a meaning value of $p \leq 0.05$.

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RESULTS AND DISCUSSION

Univariate Analysis

General Characteristics Of Respondents

The characteristics used for both the intervention and control groups were age, education level, gender, and occupation. Based on the results of univariate analysis, most (43.3%) respondents were in the age range of 51-60 years, most (60%) respondents were female, most (40%) respondents had a high school education, most (40%) respondents worked as housewives, most (66.7%) respondents were married, and most respondents (70%) never had a history of smoking.

Characteristics Of Respondents Based On Disease

Based on the results of univariate analysis based on the respondent's disease, it shows that most respondents (53.3%) have a family history of hypertension and most respondents (73.4%) experience hypertension in the range of 1-5 years.

Intervention group

Frequency distribution of respondents' self-efficacy before (pretest) and after (posttest) being given personal education based on HMP

Table 3
Frequency distribution of respondents' self-efficacy before (pretest) being given personalized education based on HMP

Self-efficacy	n	%
good	6	40.0
Less Good	9	60.0
Total	15	100

Table 3 shows that most respondents (60%) have poor self-efficacy.

Frequency distribution picture of respondents' self-efficacy after (posttest) given personal education based on HMP

Table 4
Frequency distribution of respondents' self-efficacy after (posttest) given HMP personal education

Self-efficacy	n	%
good	14	93.3
Less Good	1	6.7
Total	15	100

Table 4 shows that most respondents (93.3%) had good self-efficacy after being given personalized education based on HMP.

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Control group

Frequency distribution of respondents' self-efficacy before (pretest) in the control group who were not given personal education based on HMP

Table 5
Frequency distribution of self-efficacy of respondents before (pretest) who were not given HMP personal education

Self-efficacy	n	%
good	6	40.0
Less good	9	60.0
Total	15	100

Table 5 shows that most respondents (60%) have poor self-efficacy.

Frequency distribution of respondents' self-efficacy after (posttest) in the control group who were not given personal education based on HMP

Table 6
Frequency distribution of self-efficacy of respondents after (posttest) who were not given HMP personal education

Self-efficacy	n	%
good	7	46.7
Less good	8	53.3
Total	15	100

Table 6 shows that most respondents (53.3%) had poor self-efficacy in the control group who were not given personalized education based on HMP..

Bivariate Analysis

Table 7
Effect of personal education based on HMP on respondents' self-efficacy

Self- efficacy	n	*mean*	Df	t	*p-value*
Intervention Group	15	23.07	3.067	2.579	0.015
Control Group	15	20.00			

n : number of samples; t : $t_{calculated}$; *Degree of Freedom* (df)

Table 7 shows that there is a mean change in self-efficacy in the intervention group respondents with the control group, where the mean difference value is 3.067 and the tcount value is 2.579 with the result of p-value = 0.015 where p-value ≤ 0.05, which means that there is an effect of personal education based on HMP on self-efficacy in respondents after being given a personal education intervention based on HMP.

Discussion

Univariat Analysis

An overview of the average change in respondents' self-efficacy before (pretest) and after (posttest) providing personalized HMP education in the intervention group.

Based on univariate analysis conducted on respondents' self-efficacy before (pretest) given personal education based on HMP, it is known that most (60%) respondents have poor self-efficacy and significantly increased to good (93.3%) after (posttest) with an average change in respondents' self-efficacy before (20.07) and after (23.07) given personal education based on HMP, which means that there is an increase in respondents' self-efficacy in the intervention group after being given personal education based on HMP. Poor self-efficacy will affect an action in solving health problems and behavior based on HMP in hypertensive patients becomes ineffective.

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One of the roles of nurses in increasing patient self-efficacy is by providing education about self-care management to patients. Self-care (hypertension management) at home involves various behavioral changes that require optimal and effective treatment adherence, self-efficacy, and prevention of complications. Recent systematic reviews on hypertension self-care management have focused on the use of electronic-based technologies, the influence of self-care advances, and health promotion interventions for hypertension prevention [19].

Providing personal education based on the Hypertension Management Program (HMP) is one method of health education where educators directly provide health education directly to individuals [20]. This personal education method is considered more effective because the education provided is carried out directly and more intensively to the patient, so that the education provided will be more effective. One of the efforts to improve patients' hypertension self-management behavior is to increase patient involvement in managing hypertension. The strategy to achieve this, namely by conducting hypertension self-management education for hypertensive patients. The strategy carried out is education about hypertension management by increasing empowerment-based knowledge and skills to patients [21].

One of the goals of the HMP is to reduce the number of hypertensive patients with uncontrolled hypertension and to improve the health and well-being of hypertensive patients. HMP is a program that aims to increase the level of blood pressure control and overcome obstacles in controlling hypertension. Based on the researcher's assumption that personal Hypertension Management Program (HMP) education is very effective in increasing self-efficacy in hypertension management because hypertensive patients really need confidence in order to carry out self-care effectively in improving self-care management in hypertension management. Self care management is self-care management carried out by individuals in dealing with their health problems, this is also related to Orem's theory which states that self-care is an individual's behavior to be able to carry out self-care independently.

Overview of the mean change in respondents' self-efficacy before (pretest) and after (posttest) in the control group

Based on univariate analysis conducted on the level of self-efficacy of respondents in the control group who were not given personal self-care management education, the results obtained before (pretest), namely most (60%) respondents had poor self-efficacy and the results of measurement after (posttest), namely most (53%) respondents still had poor efficacy with the average change in respondents' self-efficacy before (19. 67) and after (20.00) in the control group with a difference of 0.33 with the results of the P-Value: 0.055 (>0.05), which means that there is

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no increase in the self-efficacy of respondents in the control group who are not given personal education based on HMP.

Based on the researcher's assumption that personal education based on HMP is very beneficial for hypertensive patients in increasing self-efficacy. The education provided is an effort to increase people's knowledge and behavior in order to achieve optimal health status in self-care management. Providing this education also provides benefits to reduce the risk of an increase in hypertension cases among the community. This is evidenced by the fact that there was no increase in self-efficacy in the control group who were not given personalized education based on HMP.

Self care management also involves understanding one's own condition and actively participating in a self-care plan, making different lifestyle choices, such as eating habits, exercise choices, and living conditions, and monitoring symptoms of the disease experienced by oneself. And it can be concluded that the higher the knowledge about hypertension self-care management, the better the level of patient self-efficacy in hypertension management [22].

Bivariate Analysis

Effect of personalized education based on HMP on self-efficacy in hypertensive patients

The results of the research conducted by the researcher found that there is an effect of personal education based on HMP on self-efficacy in hypertension management, this can be seen in table 5 after statistical testing using the Independent Sample T Test, the p-value = 0.015, where the p-value ≤ 0.05, which means that it significantly shows that the hypothesis is accepted and there is an effect of personal education based on HMP on respondents' self-efficacy. HMP personal education is a behavior in the management of hypertension that is influenced by external factors, namely from the environment and internal factors (from within oneself), one of the main internal factors that can affect self-care management is knowledge and self-efficacy. Hypertension management is one of the programs in the treatment of hypertension. One of the goals of this program is for patients to adhere to the treatment program and maintain a healthier lifestyle [23].

Based on Dorothea Orem's theory which says that self care aims to increase client independence so that clients can function optimally. Orem explains that nursing care is carried out with the belief that everyone learns the ability to care for themselves so that it can help individuals to meet life needs, maintain health and well-being [24]. Based on the researcher's assumption, the patient's lack of knowledge about self-care management can cause the patient to be less than optimal and the patient's self-efficacy to be less good in managing hypertension at home. Increasing knowledge about self care management of hypertension can increase patient confidence in the management of hypertension. Pariaman City is one of the coastal cities and is known for its typical sala lauak food and foods that contain excess coconut milk such as gulai lauak and

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rendang. These foods have become a culture/tradition for the people of Pariaman City. But we also cannot deny that foods containing excess fat and coconut milk that are cooked repeatedly are also unhealthy because of the risk of increased cholesterol and the risk of increased blood pressure [25].

CONCLUSION

1. There is a mean change in the self-efficacy of respondents in the intervention group before and after being given personal education based on HMP.
2. There is a mean change in the self-efficacy of respondents in the intervention group before and after being given personal education based on HMP.
3. There is an effect of HMP personal education on self-efficacy in the management of hypertension in outpatients at 'Aisyiyah Pariaman Hospital in 2024 with the results of p Value = 0.015 ($p \leq 0.05$).

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