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QUALITY OF LIFE FEMALE PATIENTS WITH HYPERTENSION, EFFORTS TO DEVELOP IT THROUGH EDUCATION AND BOOKLET

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Abstract

Background: Hypertension is a condition that can lead to a decrease in quality of life. If this happens, it will be a challenge to control because patients can experience complications such as cardiovascular disease and can even cause death. It was necessary to consider using hypertension self-management behavior to prevent the disease. Women are the gender that experiences hypertension more in Indonesia, and their quality of life is lower than men in several countries in the world and Indonesia. Objective: The study aimed to examine the factors of self-management behavior of hypertensive women and their impact on quality of life through hypertension self-management education with guidance through booklets. This study used a quasi-experimental design without a control group with a sample size of 46 participant women aged 18-70 years, experiencing hypertension, taking hypertension medication, communicating and reading in Indonesian, and agreeing to participate in the activity, with consecutive sampling techniques. Each participant received health education on self-management of hypertension in groups of 11 to 12 people. This study provided a booklet for each participant. Then, each participant received monitoring activities. Data analysis used the McNemar test for two categories, the Marginal Homogeneity Test if more than two, and the Paired t-test. Results: Research showed marked changes in the self-management behavior of hypertensive patients including regular consumption of antihypertensive drugs (p value 0.006), controlling blood pressure (p value 0.0001), doing physical activity (p value 0.005), consuming salt (p value 0.016) and managing stress (p value 0.008), and changes in quality of life (p value 0.0001). Conclusion: Self-management education in women with hypertension with booklets can be used as an effort to strengthen self-control behavior and improve quality of life.

Keywords: Quality of Life, Education, Booklet, Female with Hypertension.

INTRODUCTION

Hypertensive patients' quality of life is a vital issue today because if it is low, it will be a challenge in disease control programs(Ha et al., 2014). More than 1 billion people worldwide have hypertension, which is a category of adults (WHO, 2023).

There has been a significant increase in hypertension patients from 1990 to 2019, which is a group of adults aged 30-79 years. In 2019, the number of hypertension patients based on diagnosis was 59% (55–62) women and 49% (46–52) men, and based on treatment was 47% (43–51) women and 38% (35–41) men (Zhou et al., 2021).

This disease is a primary trigger for cardiovascular problems and rapid death worldwide(Mills et al., 2020). In Indonesia, the number of adult hypertension patients who have high blood pressure based on measurement results of 30.8% is much greater than those diagnosed at 8.6%. The self-control of this disease is still low within 20% (SKI, 2023).

Hypertension is a public health problem if the patient is unable to control his disease well. The cause is the lack of awareness of this disease and the minimal control (Mirzaei et al., 2020). For patients who can control hypertension, the possibility of coronary heart disease complications will decrease between 14%- 24% and vice versa. The risk of danger will decrease if the patient can control six or more risk factors compared to those who only controlled two or fewer.

Women have a lower ability to control the risk factors for this disease(Kou et al., 2024). Therefore, the self-management behavior of hypertensive patients is necessary to improve their ability to control their blood pressure (Li et al., 2020), and their quality of life (Wang et al., 2017).

Engagement in enhancing the quality of life through independence in managing chronic diseases is an opportunity in nursing science(Grady & Gough, 2014).

Women are a larger group experiencing hypertension, both from measurement results and from diagnosis results in Indonesia (SKI,2023). The quality of life of women with hypertension is lower than that of men in China (Liang et al., 2019), Kuwait (Badr et al., 2021), Indonesia(Gultom & Batubara, 2024).

Meanwhile, women's self-management behavior as empowerment is a primary contribution to sustainable development, as an investment, and has a long-term impact (Raman et al., 2022).

Based on the description, it was necessary to investigate efforts to improve the self-management behavior of hypertensive women to enhance their quality of life. The specific objective of this study was to analyze the factors of self-management behavior of hypertensive women and their impact on quality of life through hypertension self-management education with guidance through booklets.

METHOD

Participant and Research Design

This study used a quantitative method with a quasi-experimental design without a control group. The study was conducted in May-July 2024 in Deli Serdang Regency. The population was all female hypertension in the working area of the Kutalimbaru Health Center, Deli Serdang Regency.

Sampling Procedure

The sample of this study were female hypertensive patients who met the inclusion criteria, women aged 18 - 70 years, experiencing hypertension, and have ever taken antihypertension medication, able to read and communicate in Indonesian, and willing to be research respondents, taken using consecutive sampling techniques. Prospective participants who agreed to participate in the research activities signed an informed consent.

Sample Size

The sample size was calculated using the minimum single sample size formula in hypothesis testing using the correlation coefficient (r). The level of confidence (α) and research power (zβ) were determined by the researcher. The desired level of confidence was 99% with $\alpha = 0.05$ so that $z\alpha = 1.960$.

The research power is set at 90%, so that zβ = 1.282. The r value is an estimate of the existing correlation coefficient obtained from the literature study. In the literature study, the correlation coefficient of self-care behavior with hypertension quality of life was 0.196(Bairami et al., 2017).

$$n = \left(\frac{1,960+1,282}{0.5\ln(1+0,196)/(1-0,196)} \right)2 + 3 = 45,058 = 46 \text{ sample}$$

The sample in this study was 46 respondents.

Measurement

This intervention was designed by conducting two days of activities consisting of one day of educational activities using a hypertension self-management booklet and one day of monitoring at each participant's home. Furthermore, the booklet provided during education becomes a guide for participants in carrying out hypertension self-management behavior at home.

One day before education, each participant underwent a guided interview and examination using a questionnaire to assess self-management behavior and quality of life, height and weight measuring instruments, and a digital blood pressure monitor. After six weeks of education, self-management behavior and quality of life were assessed using the same methods, questionnaires, and tools.

Self-management behaviors included checking blood pressure by dividing it regularly if the check is at least once a month and vice versa, consuming antihypertensive drugs by dividing it regularly if consuming according to the rules once a day, maintaining body weight by measuring BMI divided into normal (18.5-24.9), over (25-29.9), obesity (≥ 30), controlling blood pressure divided into normal (<140/<90 mmHg), grade 1 (140-159/90-99 mmHg), grade II (160-179/100-109 mmHg), grade III (≥280/≥ 110 mmHg), doing physical activity by measuring the International Physical Activity Questionnaire-Short Form consisting of low (<600 MET), moderate (600-1500 MET), high (>1500 MET), consuming salt by dividing it bad if >1 teaspoon per day and vice versa and managing stress using the Perceived Stress Scale questionnaire divided into light (score 0-13), moderate (score 14-26), severe (score 27-40). Quality of life using the WHOQOL-BREF questionnaire with a range of 0 to 100.

For educational activities carried out in one day, and the next day monitoring was carried out at each participant's home. In the education process, participants were divided into four groups, where 1 group consisted of 11-12 participants (2 groups consisted of 12 participants, and the remaining two groups consisted of 11 participants). Each participant received a booklet as a guide in carrying out hypertension self-management behavior at home.

This booklet contained hypertension self-management behavior with an emphasis on nursing. The booklet begins with an explanation of the description and complications of hypertension based on the development of a literature review and previous research.

Education began by providing information about the picture of hypertension followed by themes of self-management behavior, including blood pressure checks, consumption of antihypertensive drugs, maintaining body weight (BMI) with a healthy diet, doing physical activity, consuming salt, and managing stress.

Data Analysis

This study used quantitative data analysis techniques, Bivariate analysis for the McNemar test if two categories, Marginal Homogeneity Test if more than two, and Paired t-test using IBM Statistical Package and Service Solution (SPSS) software version 22.0 for Windows. Significance was p-value ≤ 0.05 with a 95% confidence interval.

Research Ethics and Permit

This research has received ethical approval from the Health Research Ethics Commission of the Health Polytechnic Ministry of Health, Medan in Number 01.25 737/KEPK/POLTEKKES KEMENKES MEDAN 2024.

This research was completed from the Kutalimbaru Health Center, Deli Serdang Regency in a reply letter 755/TU/KL/VIII/2024.

RESULTS AND DISCUSSION

Results

Table 1 showed that participants were mostly aged 61-70 years (58.7%), had elementary school education (52.2%), were farmers (60.9%), were married (67.4%), had hypertension for <3 Year (69.6%), and had no comorbidities (71.7%) and had comorbidities (63.0%). Table 1 shows respondent characteristics.

Table 1: Participant Characteristics

Variable	F	%
Age		
- 41 – 50	7	15.2
- 51 – 60	12	26.1
- 61 – 70	27	58.7
Education		
- Elementary	24	52.2
- Junior	8	17.4
- High	11	23.9
- College	3	6.5
Occupation		
- Housewife	14	30.4
- Farmer	28	60.9
- Teacher	2	4.3
- Self-Employed	1	2.2
- Retiree	1	2.2
Marital Status		
- Unmarried	1	2.2
- Married	31	67.4
- Widow	14	30.4
Duration of Hypertension		
- < 3 Years	32	69.6
- ≥ 3 Years	14	30.4

Table 2 showed significant changes in self-management behavior of hypertensive patients including regular consumption of antihypertensive drugs (p 0.006), controlling blood pressure (p 0.0001), doing physical activity (p 0.005), consuming salt (p 0.016) and managing stress (p 0.008), and changes in quality of life (p 0.0001)

Table 2: Changes in self-management behavior of hypertensive patients

BLOOD PRESSURE CHECK		After		Total	P Value
		Irregular	Regular		
Before	Irregular	14	9	23	0.267*
	Regular	4	19	23	
Total		18	28	46	
CONSUMPTION OF ANTIHYPERTENSION MEDICATION		**After**		**Total**	**P Value**
		Irregular	**Regular**		
Before	Irregular	16	11	27	0.006*
	Regular	1	18	19	
Total		17	29	46	
BODY MASS INDEX		**After**			
		Normal	**Over Weight**	**Obese**	**Total**	**P Value**
Before	Normal	19	0	0	19	0.157**
	Over Weight	0	16	0	16	
	Obese	0	2	9	11	
Total		19	18	9	46	
BLOOD PRESSURE		**After**				**Total**	**P Value**
		Normal	**Level I**	**Level II**	**Level III**		
Before	Level I	11	20	1	0	32	0.0001**
	Level II	1	4	5	0	10	
	Level III	0	2	1	1	4	
Total		12	26	7	1	46	
PHYSICAL ACITIVITY		**After**			**Total**	**P Value**
		Low	**Medium**	**High**		
Before	Low	17	5	0	22	0.005**
	Medium	0	17	3	20	
	High	0	0	4	4	
Total		17	22	7	46	
SALT CONSUMPTION		**After**		**Total**	**P Value**
		Bad	**Good**		
Before	Bad	13	7	20	0.016*
	Good	0	26	26	
Total		13	33	46	
STRESS MANAGEMENT		**After**			**Total**	**P Value**
		Low	**Medium**	**High**		
Before	Medium	3	38	0	41	0.008**
	High	0	4	1	5	
Total		3	42	0	46	

*McNemar Test, **Marginal Homogenity Test

Table 3 showed a significant influence of hypertension self-management education accompanied by a booklet on quality of life. The p-value for the physical, psychological, environmental, and overall quality of life dimensions is 0.0001, and for the social dimension, it is 0.001.

Table 3: Changes in Quality of Life Before and After Educational Intervention

Quality of Life	Min	Max	Mean ± SD	Mean Difference	P Value
Physical dimension before interventioan	25	81	54.96±10.91	7.15	0.0001*
Physical dimension after intervention	38	88	62.11±11.12		
Psychological dimension before intervention	19	94	57.33±16.65	9.33	0.0001*
Psychological dimension after intervention	31	94	66.65±15.66		
Social dimension before intervention	25	81	51.24±11.09	4.83	0.001*
Social dimension after intervention	25	81	56.07±12.97		
Environmental dimension before intervention	19	75	52.22±12.34	4.67	0.0001*
Environmental dimension after intervention	25	81	56.89±12.36		
Overall quality of life before intervention	36	75	53.85±9.28	6.59	0.0001*
Overall quality of life after intervention	39	83	60.43±9.94		

*Paired T Test

Participant Characteristics

The dominant characteristics of respondents were the age of 61-70 years at 58.7%. The highest prevalence of hypertension was in the age of 60 years and above and is not significantly different between men and women at 75.2% and 73/9% (Ostchega et al, 2020). The interaction of age with hypertension incidence was a significant result. The underlying condition was structural changes, namely collagen deposition, which was increasing, coupled with the emergence of oxidative stress and fibrosis in the older age group (Bruno et al., 2017).

The highest education level of participants was elementary school. Older individuals will be healthier for those with higher education than lower, related to hypertension awareness and treatment effectiveness (Zacher, 2023). The majority of participants' occupations were farmers. Work and hypertension were related to challenging working conditions (Khonde Kumbu et al., 2023), working hours (Cheng et al., 2021). The marital status of the majority of participants was married. Marital status in hypertensive women is a direct independent risk factor (Tuoyire & Ayetey, 2019).

Another different study stated that a significant risk factor for hypertension was never being married (Ramezankhani et al., 2019). The duration of hypertension is mostly less than three years. The presence of hypertension patients was greater regardless of gender, starting from a duration of illness of less than one year to three years, more than the range above this(Hailu Jufar et al., 2017).

Changes in Self-Management Behavior of Female Patients with Hypertension Before and After Intervention

The results of the study showed significant changes in the self-management behavior of female patients with hypertension before and after the intervention of hypertension self-management education accompanied by a booklet including consuming antihypertensive drugs, doing physical activity, consuming salt, and managing stress. The other two factors did not show significant changes. Health promotion enables individuals to increase control over their health to benefit from protecting health and quality of life by addressing and preventing the root causes of disease, rather than just focusing on treatment and cure (WHO,2016).

The principles of health promotion consist of a body of knowledge and the use of concepts and theories based on research results. Health empowerment is a method used in health promotion to try to develop the capacity of participants to make decisions, referring to counseling, and community development, using social learning theory with a strong emphasis on certain learning methods (Hubley et al., 2021).The use of booklets attempts to transmit messages about self-behavior in controlling hypertension to participants by designing it as attractively as possible. Using appropriate media and social marketing methods in health campaigns will provide significant benefits in combating disease problems and bad habits (Sari, 2021).

Two self-management behaviors for hypertension have not shown significant results, including blood pressure checks and maintaining body mass index through a good diet, although the cross-table shows that several respondents have experienced changes. Behavior change requires the presence of motivation, self-regulation, resource support, habits, and environment(Kwasnicka et al., 2016). Another thing is related to time. Some patients change their health behavior quickly in 3 weeks, and usually, the average change is in 10 weeks (Gardner et al., 2012).

Changes in Quality of Life of Female Patients with Hypertension Before and After Intervention

The study showed significant changes in the quality of life of female patients with hypertension before and after self-management hypertension education by booklets in physical, psychological, social, and environmental dimensions and overall quality of life. Education forms a unique dimension of social status, the quality of which makes it so fundamental for health.

Education trains individuals to acquire, evaluate, and use information and develops learned effectiveness that enables self-direction toward all the health values sought. Well-educated people seek to take control of their lives, encouraging and sustaining healthy lifestyles that improve the quality of health (Mirowsky, 2017).

Health education is related to changes in quality of life-based on three directions. First, increasing knowledge power, and analytical skills that individuals use to guide their behavior. Second, changing individual choices, and third, changing obstacles into opportunities (Land et al., 2012).

Efforts to empower women through education will encourage better decision-making power and ultimately support improving the quality of life (Abdulmughni dan Al-Abyadh,2023). This study has differences from previous studies, previous studies used Orem's theory approach and were conducted for eight weeks(Khademian et al., 2020).

RESEARCH LIMITATIONS

This study has limitations because the control of participant similarity is only through female gender, hypertension diagnosis, and history of antihypertensive drug consumption. Meanwhile, the arrangement of characteristics and quality of life is not good with the same score or category. Another limitation is the study period.

CONCLUSION

Education, monitoring, and provision of hypertension self-management booklets showed significant changes in several self-management behaviors of female participants with hypertension involving the behavior of consuming antihypertensive drugs, doing physical activity, consuming salt, and managing stress. The quality of life of participants also experienced significant changes through this intervention.

Further studies are needed to increase support for participants in implementing self-management behaviors such as family support, cadres, and health workers. Therefore, we recommend that health workers in charge of each fostered village, with the help of cadres periodically provide education, monitoring, and booklets so that self-management behavior and quality of life of women with hypertension can be maintained and improved.

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