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Research Article

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Effectiveness of Family Mentoring Model to Decrease Blood Pressure of Hypertensive Clients

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Abstract

Introduction: *Hypertension is the most common disease and usually arises without complaints so many clients do not know that they have suffered from hypertension. Until now Hypertension is still a major problem and is the first cause of death in the world. This study aims to find out the Effectiveness of Family Mentoring Model against decreased Blood Pressure of hypertensive clients.*

Method: *The research design used quasi-Randomized Control Group Pre-Test Post Test Design experiments on 120 hypertensive clients using purposive sampling. Model interventions are given for 8 weeks, and home visits are made once a week. Data analysis using independent and dependent t tests.*

Result: *The results showed that the model intervention effectively lowers the blood pressure of hypertensive clients. This was indicated by a systolic blood pressure decrease of 18.8 mmHg significantly after the model intervention and significantly different (p value: 0.0001).*

Conclusion: *Diastolic blood pressure showed a significant decrease of 11.1 mmHg after model intervention and significantly different (p_value: 0.0001). This model is recommended to be implemented in all areas of work of public health centers as an effort to control hypertension.*

Keywords: Family Mentoring Model, Hypertensive Client, Blood Pressure.

Introduction

Hypertension is a disease for most experienced people. Hypertension usually appears without any complaints so that many clients do not know that they had suffered from hypertension. Signs and symptoms are sometimes can't feel, so it is known as the silent killer. Hypertension also led to various complications of the blood vessels that can lead to coronary heart disease, kidney, and stroke later [1-3]. Complications or impacts that can be caused by hypertension vary widely, consist, have an impact on the physical, psychological, and socio-economic clients [4-7].

Hypertension remains a major problem worldwide, both in developed and developing countries, including Indonesia. The latest WHO data (2023) indicates that 1 in 3 adults worldwide suffers from hypertension (approximately 1.3 billion people) [8]. According to the American Heart Association (AHA), around 122.4 million adults in the United States live with high blood pressure (hypertension), or about 46.7% of all US adults, and approximately 600 million people (44%) are unaware of their condition [9]. The prevalence of hypertension in East Java Province has increased over the past three years to 14.10%, with women accounting for 52.3% [10]. According to SKI, 2023, the prevalence of hypertension in East Java Province remains high at 34.3%, which is higher than the national hypertension prevalence (SKI, 2023). The prevalence of hypertension in 2022 in Mojokerto Regency reached 30.4% [11].

Various attempts have been made to control hypertension, but

the prevalence of hypertension is still high, and many clients obtained various comorbidities hypertension or other complications. National program efforts have been made to control hypertension still led to preventive measures (prevention) and early detection of cases of hypertension, namely through the examination of blood pressure in the population aged over 15 years through an integrated coaching post activity (POSBINDU). It is closely associated with various causes that interrelated among them a lack of understanding and their wrong perceptions about hypertension, lack of awareness and willingness of individuals and families to care for hypertensive clients. The absence of efforts by local government programs to support the care of hypertension clients in the family and approach that is able to in the crease the participation of individuals and families in the care of hypertension clients is also the basic of this research [12].

Method

This research used quasi experiment design through Non-Randomized Control Group Pre-Test Post Test Design approach [13]. The population in this study was the entire family with hypertensive clients in Mojokerto district health center area which amounted to 120 respondents. Samples are taken with purposive sampling techniques. 60 respondents were taken from families with hypertension clients in the Dlanggu health center area as an intervention group and 60 families with hypertensive clients in the Bangsal health center area as a control group. The instrument used in this study was a sphygmomanometer. Supporting instruments in this research used workbooks, evaluation books and flyers on hypertension. This research starts from preparation, preliminary data collection (pretest), implementation of model intervention and final data collection (posttest). Model interventions are given for 8 weeks, and home visits are made once a week. The first 4 weeks are given health education and mentoring about hypertension and hypertension prevention efforts by giving flyers about hypertension and workbooks. The next 4 weeks are self-learning and evaluation is conducted in the last week. Data analysis techniques using dependent t test.

Results

Characteristics of Respondent

Table 1: Characteristics of Hypertension Clients by Gender, Education, Age and Long Knowing about Hypertension (n= 120)

Characteristics	Category	Treatment		Control		Total	Homogeneous Sig
		Sum	%	Sum	%	%	
Gender	Female	52	55.9	41	44.1	93 (77.5)	
	Male	8	29.6	19	70.4	27 (22.5)	0.707
	SD	4	33.3	8	66.7	12 (10.0)	
Level of Education	SMP	22	52.4	20	47.6	42 (35.0)	0.775
	SMA	34	57.6	25	42.4	59 (49.2)	
	PT	0	0	7	100	7 (5.8)	
Characteristics		Treatment		Control		Sig	
		Mean	SD	Mean	SD		
Age		45,08	5,47	45,66	4,70	0,341	
Long Knowing of HT		3,93	2,55	2,28	1,71	0,042	

Table 1 shows that the sex of hypertensive clients is mostly women, namely 77.57% and the two groups are equivalent (p_value: 0.707). Almost half of the hypertension clients have a high school education, namely 49.2%, and the two groups are equivalent (p_value: 0.775). Based on age, it shows that in the intervention group the average age is 45.08 and the control group is 45.66, the results of the analysis show that the two groups are equal (p_value: 0.341). Based on the length of knowing about hypertension, the intervention group had an average of 3.93 years, the control group was 2.55 and the results of the analysis showed that the two groups were not equal (p_value: 0.042). Based on table 1, it is found that most of the respondents are 21-25 years old (92%) with female gender (64%). Most of respondents did not work (82%), and the reason for studying from own desire (80%). Almost one hundred percent of them received the good parental support (96%), good practical facilities support (66%), and sufficient funds (76%).

Client's Blood Pressure Before Intervention

Table 2: Client's Blood Pressure Value Before Intervention (n: 120)

Variable	Group	n	Mean	SD	SE	p_Value
Sistolic BP	Treatment Control	60 60	154,2 149,9	8,9 8,1	1,15 1,05	0,007
	Total	120	152,0	8,7	0,79	
Diastolic BP	Treatment Control	60 60	93,4 92,9	4,8 4,4	0,62 0,57	0,556
	Total	120	93,1	4,6	0,42	

Table 2 shows that the client's systolic blood pressure before the intervention averaged 152 mmHg and both groups (intervention and control) had no equivalent p value: 0.007. Intervention average diastolic blood pressure of the client before the intervention was 93.1 mmHg and both groups (intervention and control) were equivalent to p_value: 0.556.

Changes in Client's Blood Pressure Before and After Intervention

Table 3: Client's Blood Pressure Value Before and After Intervention (n: 120)

Variable	Group	N	Pre		Post		Diff. Mean	p_ Value	Effectiveness (%)
			Mean	SD	Mean	SD			
Sistolic	Treatment	60	154,2	8,9	135,4	5,7	-18,8	0.0001	18.8
	BP	60	149,9	8,1	147,6	8,4	-2,3	0.029	
Diastolic	Treatment	60	93,4	4,8	82,3	4,2	-11,1	0.0001	11.1
	BP	60	92,9	4,4	92,6	5,4	-0,3	0.616	

Table 3 illustrates that the systolic blood pressure (systolic BP) of hypertensive clients showed a decrease of 18.8 mmHg (from 154.2 mmHg to 135.4 mmHg) significantly after the intervention model and was significantly different (p_value: 0.0001). In the control group, there was a significant decrease of 2.3 mmHg (from 149.9 mmHg to 147.6 mmHg) after the intervention model and was significantly different (p_value: 0.029). The effectiveness of the model on the reduction of systolic blood pressure in hypertensive clients was 18.8%. Diastolic blood pressure (diastolic BP) of hypertensive clients showed a decrease of 11.1 mmHg (from 93.4 mmHg to 82.3 mmHg) significantly after the model intervention and significantly different (p_value: 0.0001). In the control group there was a significant reduction of 0.3 mmHg (from 92.9 mmHg to 92.6 mmHg) but not significantly different (p_value: 0.616). The effectiveness of the model to decrease diastolic blood pressure in hypertensive clients was 11.1%.

Discussion

Intervention model for 8 weeks through the learning process with mentoring, namely through the provision of health education, mentoring by providing leaflets and flyers hypertension and home visits once a week is able to lower blood pressure Systolic and Diastolic hypertensive clients. This following the research of Hamilton, et al explaining that the Health Coaching management provided to hypertensive patients can increase client knowledge of hypertension and be able to reduce blood pressure both systole and diastole [14]. Fauzia research on hypertensive patients in the work area of the Medan City Health Center explained that providing education can improve the implementation of healthy behavior and control of blood pressure in hypertensive patients [15]. The results of Erci et al (2013) showed that the intervention of the Caring Watson model for 3 months and home visits for once a week showed an increase in the quality of life of hypertensive patients and a decrease in blood pressure in hypertensive patients. This is also by the results of research [16]. which show that family assistance for 1 month and assisting every week can reduce the client's blood pressure.

These results are in line with Priscilla Naamomo Otubuah's 2022 research on Effects Of Health Coaching On Self-Care Monitoring Among Ghanaians With Hypertension Living In Southern California which shows that Based on the results of the repeated measures ANOVA, there was a significant increase in all respondents; after the intervention, the treatment group showed a significantly greater improvement compared to the control group, from baseline to Week 4 [17]. Research results from Rotheram-Borus et al (2023) show that family coaches are community members and paraprofessionals trained in common elements of EBPP. Family Coaching has specific goals, is short term, and has definable outcomes. Coaches frame the program's goals to be consistent with the family's values, normalize the family's experience, assess their strengths, and help the family set goals and develop skills and routines to problem solve challenging situations. Broad dissemination of EBPP will be facilitated with delivery formats that are flexible to meet families' priorities and providers' desires and capacities to tailor programs to local contexts.

Another supporting study is the research by Arifin et al on E-Coaching Intervention in Improving Family Support for Individuals with Mental Disorders, which shows that Overall, e-coaching significantly improved the family's ability to recognize problems, make decisions, care for patients with MDs, modify the environment, and utilize health facilities. The study by Kalinowski J. et al on-stress management in relation to increased blood pressure outcomes in Black women shows Comprehensive lifestyle interventions were also efficacious for reducing blood pressure, although the relative contribution of stress management versus behavior modification could not be evaluated [18, 19]. Research by Williams EM. et al on evidence-based self-management interventions combining social support and health education has reduced pain, improved function, and delayed disability in lupus patients [20]. This article presents an argument that peer mentoring may be a highly effective intervention approach for AA women with SLE [21, 22].

Based on the description, it can be concluded that the Intervention model mentoring family over 8 weeks, with 4 weeks of guidance and 4 weeks of self-learning, is able to reduce the systolic and diastolic blood pressure of clients with hypertension.

Conclusion

Intervention Model mentoring family effectively lowers the blood pressure of hypertensive clients, both systolic blood pressure and diastolic blood pressure.

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