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Relationship between Individual Beliefs and Hypertensive Patient Behavior when Performing Blood Pressure Control

GratsiaViktoria Fernandez[1], I KetutSudiana[2], IkaYuni Widyawati[1*]

Abstract--- *The control of blood pressure in the context of hypertension remains an important health problem and finding strategies to overcome it is a worldwide problem. It is generally believed that a person will take actions to prevent, reduce, and control health problems depending on kind of health belief that they have. The purpose of this study is to find out the relation between the individual beliefs and blood pressure control behavior of hypertensive patients. This study used a cross-sectional design. The subjects were hypertensive patients at the primary health center in Kupang, NTT (n = 67). The independent variable was individual beliefs (perceived threat, perceived benefit, perceived barrier, and perceived self-efficacy) and the dependent variable was blood pressure control behavior. In this study, each respondent was interviewed by the researchers using the individual belief questionnaire and the Hypertension Self-Management Behavior Questionnaire (HSMBQ). The data was analyzed using Chi-square analysis. There was a significant relation between individual beliefs and the blood pressure control behavior of hypertensive patients (X^2 values all > 3,841). Perceived barriers had the highest estimated value (OR = 28,889) which shows that the perceived barriers have the biggest relation with blood pressure control behavior. The indicators of individual beliefs of perceived threat, perceived benefit, perceived barrier and perceived self-efficacy will influence the behavior of hypertensive patients when they seek to control their blood pressure.*

Keywords--- *Behavior; Hypertension; Perceived*

I. INTRODUCTION

Hypertension is called a "silent disease" because there are no signs or symptoms showing the damage to the blood vessels that cause health problems [1]. Controlling the blood pressure in relation to hypertension remains an important health problem. Meanwhile, finding strategies to cope with it is a global problem [2]. Several studies from several countries around the world have shown that the hypertension sufferers' awareness of the importance of blood pressure control is still very low. Efforts to prevent and control hypertension must begin by increasing the level of public awareness and making lifestyle changes. To understand and practice the right lifestyle and to avoid disease, individuals and society need to learn the right behaviors[3].

[1]*Faculty of Nursing, Universitas Airlangga, Surabaya, Indonesia*
[2] *Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia*

Corresponding Author :
Ika Yuni Widyawati
Email: ika-y-w@fkp.unair.ac.id

The World Health Organization (WHO) reported that there were at least 839 million cases of hypertension in 2012. It is estimated to be 1.15 billion by 2025 or about 29% of the total world population, where women sufferers number higher (30%) than men (29%). On the other hand, around 80% of hypertension cases occur particularly in developing countries [4]. The Indonesian population of adults aged 18 and over totals 649,625 people and the hypertension prevalence in Indonesia has reached 34.1% in this group. Meanwhile, the hypertension prevalence of NTT has reached 24.6% of the 18 and over group [5].

Effective self-care behaviors such as medication adherence, dietary restrictions, smoking cessation, exercise, and the regular monitoring of their blood pressure are important components of disease management in patients with uncontrolled hypertension [6]. Acculturated patients were more obedient to medication, physical activity, eating a healthy diet, and following lifestyle changes to gain better blood pressure control [7]. The longer the duration of treatment, the lower the patient's adherence to the treatment. This caused resistant hypertension [2]. Based on the impact of these problems, the identification of the relationship between individual belief in hypertension patients according to the theory of The Health Belief Model and the hypertensive patients' behavior of controlling their blood pressure is necessary to find out how much influence the individual confidence of hypertension sufferers has an impact on controlling their blood pressure.

The Health Belief Model consists of several key concepts which were able to be used to predict why people take actions to prevent, filter, or control their medical conditions including vulnerability, severity, the benefits and the barriers to behavior, and self-efficacy [8]. Generally, it is believed that a person takes action to prevent, reduce, and control the health problems based on their Health Belief [9]. The aim of this study was to discover the relationship between individual belief and the hypertensive patients' behavior of controlling their blood pressure.

AI. METHODS

An explanatory survey with a cross-sectional approach was used in the study. The subject of this research was patients with hypertension in a public health clinic in Kupang, NTT totaling 67 patients. The criteria for the patients was that they were hypertensive patients with pain that had lasted for at least 3 months, who were 56-60 years old and able to write, read and understand Indonesian language. Patients with crisis hypertension, patients with complications from acute hypertension, pre-eclampsia and any mental disorders were excluded. In this study, the researcher used non-probability sampling with a consecutive sampling technique.

In this study, face-to-face interviews were done by the researcher using questionnaires. The individual belief questionnaire was arranged by the researcher based on a component of the health belief model (HBM) that consists of 21 item questions with 4 alternative answers measured by a Likert scale with the optional answers of strongly agree=4, agree= 3, disagree= 2, and strongly disagree= 1. Meanwhile, the blood pressure control behavior questionnaire used the Hypertension Self-Management Behavior Questionnaire (HSMBQ) [10] that consists of 38 questions with optional answers "never"= 1, "sometimes"= 2, and " often"= 3. Each questionnaire was evaluated for content validity and reliability using the product moment correlation test and they were found to have acceptable validity and reliability. This test was conducted on 30 respondents. Each questionnaire was declared to be valid if the value of r count> r table (0.361 with a significant level of 5%) while for the reliability test, the questionnaire was declared to be reliable as the Cronbach's Alpha value was more than 0.6. After finding out the data, the data itself was analyzed using Chi square (the significance level (α) of 5% or 0.050) through data analysis software. Ethical clearance was obtained from the Ethical Review Committee in the Faculty of Nursing, Airlangga University, Indonesia (No. 1862-KEPK) prior to the commencement of the study.

BI. RESULTS

An overview of the individual beliefs of the patients with hypertension has been presented in Table 1. Based on Table 1, individual beliefs include perceived threat, perceived benefit, perceived barriers and perceived self-efficacy. The results of the research show that out of the 67 hypertension's victims, most of the respondents experience low perceived threat (92,5%), low perceived benefits (56,7%), low perceived self-efficacy (67,2%) and (91,0%) high perceived barriers.

Table 1. Individual Beliefs of the Hypertensive Patients Related to Blood Pressure Control

No	Individual Beliefs	Frequency (n = 67)	%
1	Perceived threat		
	High	5	7,5
	Low	62	92,5
2	Perceived benefit		
	High	29	43,3
	Low	38	56,7
3	Perceived barriers		
	High	61	91,0
	Low	6	9,0
4	Perceived self-efficacy		
	High	22	32,8
	Low	45	67,2

The description of blood pressure control in hypertensive patients has been presented in Table 2. Based on Table 2, the blood pressure control behavior of the hypertensive patients is mostly (79,1%) in the low category.

Table 2. Behavior of Blood Pressure Control in Hypertensive Patients

Behavioral of Blood Pressure Control	Frequency	%
Good	14	20,9
Poor	53	79,1
Total	67	100,0

Table 3 shows the results of the cross tabulation and statistical analysis undertaken between individual beliefs and the behavior of blood pressure control in hypertensive patients. Based on Table 3, the majority of hypertensive patients have low perceived threat (93%), low perceived benefit (57%) and low perceived self-efficacy (67%) in addition to poor blood pressure control behavior. Meanwhile, the majority of hypertensive patients who have a high perceived barrier result (91%) have poor blood pressure control behavior (64%). All of the Chi square values calculated that perceived threat, perceived benefit, perceived barrier and perceived self-efficacy are greater than the value of the Chi square table for the value of degrees of freedom (df) = 4 at the significance (α) 5% or 0.050 is 3.841 (X^2 values all > 3,841). This means that there is a significant relationship between individual beliefs (perceived threat, perceived benefit, perceived barriers and perceived self-efficacy) with the blood pressure control behavior of hypertensive patients. Based on the estimated OR (Odd Ratio) and common odds ratio values, perceived barriers has the highest estimated value (OR = 28,889 and common odds ratio = 277,020). This shows that the perceived barriers have the biggest relation with blood pressure control behavior.

Table 3. Results of the Cross Tabulation and the Statistical Analysis between Individual Beliefs and the Behavioral Control of Blood Pressure in Hypertensive Patients

		Blood Pressure Control Behavior - Total Results of the Statistical Analysis				Total	%	Statistical Analysis Results			
		Less	%	Good	%			Pearson Chi-Square (X^2) (df = 1 sig 5%)	Estimate OR	Common Odds Ratio	
										Lower	Upper
Perceived Threat	low	51	96	11	79	62	93	4,999	6,955	1,036	46,690
	high	2	4	3	21	5	7				
Total		53	100	14	100	67	100				
Perceived Benefit	low	34	64	4	29	38	57	5,711	4,474	1,234	16,224
	high	19	36	10	71	29	43				
Total		53	100	14	100	67	100				
Perceived Barrier	low	1	2	5	36	6	9	15,543	28,889	3,013	277,020
	high	52	98	9	64	61	91				
Total		53	100	14	100	67	100				
Perceived Self-efficacy	low	41	77	4	29	45	67	11,952	8,542	2,268	32,168
	high	12	23	10	71	22	33				
Total		53	100	14	100	67	100				

IV. DISCUSSION

This research shows that the individual belief of the hypertensive patients affects the behavior taken to control their blood pressure. This is in line with the research done by Setiyaningsih that showed that perceived threat, perceived benefit, perceived barriers and perceived self-efficacy are directly related to hypertension prevention behaviors [3]. According to Hee, the patients' belief in the treatment can influence the patients' attitude towards the treatment itself [11]. The better the belief of the hypertensive patients related to the benefits of the hypertension treatment, the better the patients' compliance when doing the treatment.

Perceived threat is a combination of perceived susceptibility and perceived severity. Susceptibility or risk refers to someone's subjective perception regarding the risks related to his/her health condition. In the case of a medical ailment, this dimension covers the acceptance of the diagnosis result, the personal estimation of the existence of re-susceptibility, and their susceptibility towards general illness. The greater the perceived risk, the greater the possibility of reducing the risk [12]. The Health Belief Model predicts that individuals who feels vulnerable to certain health problems will be engaged in behaviors to reduce the risk of said problems [13]. People with low perceived vulnerability can deny that they have a risk of contracting certain diseases. Individuals who believe that they have a low risk of contracting disease are more likely engage in unhealthy or risky behavior. Individuals who have a high risk will be personally affected by certain health problems when trying to reduce the risk [14]. Perceived severity is related to the patient's belief about the seriousness of a disease, including their evaluation of the clinical and medical consequences and the social consequences that may possibly occur due to the disease having an effect on their life [13]. Based on previous research, hypertensive people still consider it to be a common and harmless disease. This is consistent with the study by Udompittayason et al showing that hypertensive patients still think that it is a common disease. This is caused by people's perspective of hypertension being focused on the symptoms. Hence for as long as hypertension does not cause symptoms that interfere their daily activities, they will consider hypertension to be a harmless disease [15]. Patients who directly or indirectly experience high blood pressure complications mostly experience fear and anxiety about their high blood pressure. However, fear and anxiety do not always lead to a negative effect and this can force the patients to engage in positive

health behaviors [16]. Individuals who believe that certain health problems are a serious issue are more likely to engage in behavior to prevent said health problems (or to reduce their severity). Perceived seriousness includes beliefs about the disease itself (for instance, whether it is life-threatening or can cause disability or pain) as well as the wider impact of the disease on their ability to function in terms of their work and social roles.

Perceived benefit refers to an individual's belief of the benefits perceived from the various measures available to reduce the threat of the disease or the benefits perceived when undertaking health efforts. This will affect the acceptance of an individual and their susceptibility to a condition that is believed to have a perceived threat. This will drive them to produce a supportive force towards behavior change [2]. An individual will tend to adopt healthy behaviors when he believes that the new behaviors will reduce their risk of developing a disease. Based on the results of this research, there are still many people with hypertension who do not know the benefits of treatment, namely to avoid complications. This is in line with Shamsi, Nayeri, & Esmaeli's research which showed that some patients ignored doctor's orders and only used drugs when their blood pressure symptoms occurred. This can cause complications such as cardiovascular or cerebrovascular diseases [16].

Perceived barriers refer to the barriers to change when the individual deals with obstacles when they are taking actions [9]. In this study, the perceived barriers of the hypertensive patients were in the high category, showing that the hypertensive patients experience obstacles when seeking to control their blood pressure. Moreover, perceived barriers are one indicator of individual beliefs that heavily influences blood pressure control behavior. This is in line with the research by Kamren et al which showed that perceived barriers have a direct relationship with the behavior of hypertensive patients in which the erroneous attitude and perception toward controlling their blood pressure will affect the behavior of the hypertensive patients in maintaining their health [17]. The potential negative aspects of certain health actions can act as obstacles to performing the recommended behavior. Economic problems are a major obstacle for the patients when it comes to accessing the appropriate healthcare services and adherence to drug use [16]. Moreover, ethnic and cultural differences also become obstacles in relation to controlling blood pressure [15]. The wrong perception of the disease can cause obstacles in seeking to obtain healthy behavior.

Perceived self-efficacy is an individual's belief that he can act or perform a certain behavior that leads to certain results [13]. The belief in their skills includes confidence, the ability to adjust, cognitive capacity, intelligence, and the capacity to act on a situation under pressure [18]. The results showed that perceived self-efficacy also has a significant relationship with the blood pressure control. This is in line with Giena et al's research which showed that self-efficacy presents as having a positive relationship with the hypertensive patients' behavior to recover their health [19]. It shows that the behavior of the hypertensive patients to control their blood pressure can be increased by self-efficacy improvement. According to Kamran et al., self-efficacy can motivate a person to change their behavior [17]. Considering that they have the sufficient skills to do a behavior is more likely to motivate and encourage the individual to act compared to the moments when the person feels that they are not efficient. Self-efficacy refers to the belief in the extent to which a person estimates his abilities when carrying out or completing a necessary task to accomplish a certain result.

V. CONCLUSION

The conclusion of this research is that the indicators of individual belief, namely perceived threat, perceived benefits, perceived barriers and perceived self-efficacy, will affect the behavior of hypertensive patients when controlling their

blood pressure. The changes in behavior should be successful if an individual feels threatened by their current behavior pattern (susceptibility and severity perceived) and if they believe that certain changes will obtain valuable results. They must feel competent when seeking to overcome the perceived obstacles.

CONFLIC OF INTEREST

No conflicts of interest have been declared.

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