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Development of A Self-Management Model Based on The Theory of Health Belief Model on Self-Care Behavior at Home in Hypertensive Patients

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Abstract
Introduction: *The main problem in hypertension management is the attitude or behavior towards the disease which tends to be disobedient in carrying out self-care. With good self-management, the patient's level of awareness in undergoing treatment will increase.* ***Objective:*** *The purpose of this study was to develop a self-management model based on the Health Belief Model theory of self-care behavior at home in hypertensive patients.* ***Methods:*** *This study has 2 stages. The first stage of factor analysis uses an explanatory survey. The samples obtained were 135 patients in Centro Saude Comoro Dili through cluster random sampling.* ***Results and analysis:*** *Overall the results of testing the hypothesis for the new findings in this study can be seen that there is a significant influence of demographic factors (occupation, level of education) on individual beliefs with a statistical T value of 12,440, a significant influence of structural factors (knowledge) on individual beliefs with a statistical T value of 5,078, a significant effect of individual beliefs on self-management with a statistical T value of 26,815 and the effect of self-management on self-care behavior with a statistical T value of 51,333. The second stage, namely FGD and expert consuls, is used as a basis for developing models and compiling self-management modules for people with hypertension.* ***Conclusion:*** *Demographic and structural factors have an influence on individual beliefs of hypertensive patients and individual beliefs themselves have an influence on self-management and self-care behavior. It is hoped that one of the suggestions from research for community nurses can utilize this module to improve the self-care behavior of hypertensive patients at home.*
Keywords: Hypertension; Self-Management; HBM; Self-care Behavior;

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Introduction

Hypertension is one of the non-communicable diseases that continues to increase both in the world and in Timor-Leste. This disease is most often found in primary health care. The main problem of hypertension management is the attitude or behavior towards the disease that tends to be non-compliant in carrying out self-care. This is because sufferers have different concepts and beliefs such as disease management knowledge is not applied for better behavior change (Motlagh et al., 2016). Hypertension is a silent killer where symptoms can vary in each individual and are almost the same as symptoms of other diseases. This disease can trigger the onset of other health problems, even death. Increased blood pressure that lasts for a long time can cause various complications such as damage to the kidneys, heart and brain if not detected early and if not received adequate treatment (Triyanto, 2014).

According to the World Health Organization (WHO), about 1 billion or 26.4% of adults in the world suffer from hypertension, two-thirds of which are in developing countries and are expected to increase to 1.56 billion or 29.2% by 2025 (WHO, 2019). The disease progresses rapidly in low- and middle-income countries. This increase is mainly due to an increase in hypertension risk factors in such populations (WHO, 2021). WHO reported hypertension deaths in Timor-Leste reached 156 or 2.21% of the total deaths. The age-adjusted mortality rate was 24.12 per 100,000 Timor-Leste's population (WHO, 2020). Communicable diseases in Timor-Leste are declining but non-communicable diseases are now accounting for 62% of all deaths in the country. According to a WHO survey (2014) says one-fifth of all adults have three or more NCD risk factors, including smoking, inadequate diet, high blood pressure, alcohol use, and inadequate physical activity (Cousins, 2020). The National Survey for Non-Communicable Disease Risk Factors and Injuries: Using WHO STEPS approach in Timor-Leste (2014) reports much higher tobacco use in men (70.6%) compared to women (28.9%). Older smokers outnumbered both men and women in the younger group. Alcohol consumption was exclusively among men 42.8% compared to women 2.0% (Soares Martins, J et al., 2015).

Timor–Leste Centro Saúde Comoro is one of the health centers with the highest prevalence of hypertension, every year hypertension cases increase compared to other cases. A preliminary study conducted at the CS Comoro Community Health Center showed that the prevalence of hypertension in 2020 was 4,645 people, while in 2021 cases increased by 7,897. Based on the age group, hypertension is most common at ages 40-70 years (69.075%) and least common at ages >70 years (7.79%). Thus, behavioral factors are the factors most related to the incidence of hypertension.

Based on a preliminary study conducted by researchers on 3 hypertensive patients in one of the patient's homes in the Centro Saúde Comoro area on May 9 2022, the results of the interview showed that one patient knew about high blood pressure and routinely controlled blood pressure at the community health center. Self-care behavior at home is non-compliant, such as a low-salt, low-fat diet and lack of exercise. One patient said he was bored of taking medication and was not on time in carrying out routine blood pressure

control because he was busy and sometimes forgot, the next patient already knew about his illness but was not always on time in carrying out blood pressure control, was not compliant with medication because he complained regarding the side effects of hypertension drugs such as frequent urination, headaches, and dizziness. Three of these patients had chronic hypertension. Efforts to control blood pressure at the health center have been carried out by health workers through primary and secondary prevention strategies. These efforts include oral hypertension management education when the patient goes to the health center for control, but visiting the community implementing the SISCA (Servico Integrado Saúde Comunitaria) program provides services, counseling as an effort to improve self-care at home to prevent complications.

These programs have been provided, but there are still many hypertension sufferers who cannot control their blood pressure. This is because lifestyles such as a diet high in fat, high in salt, smoking, lack of physical activity and alcohol use have become endemic in Timor-Leste. Another thing is the lack of regulations such as no minimum legal age limit for purchasing alcohol and no restrictions on aggressive advertising of alcohol such as beer, wine and other alcoholic drinks (Cousins, 2020). In research, Kassavou et al., (2020) said that non-compliance with hypertension management was due to medication, diet and blood pressure control accidentally due to forgetting. This research is in line with research by Rusminingsih & Dian (2018) which states that low compliance with hypertension management can be a barrier to achieving controlled blood pressure.

Hypertension is a chronic disease, so Self-management is one of the elements in the chronic nursing model which refers to an individual's ability to manage symptoms, treatment, physical and psychological impacts, as well as getting used to changes in lifestyle behavior related to chronic conditions with the result being the ability to monitor conditions and influence cognitive, behavioral, emotional responses that are necessary to maintain satisfaction in quality of life (Primanda et al., 2011). Self-management for hypertension sufferers includes controlling blood pressure and medication, improving lifestyle and preventing complications that will occur (Sakinah et al., 2020). Self-management can be carried out by applying five components, namely: self-integration, self-regulation, interaction with health workers, self-monitoring and adherence to recommended treatment (Li et al., 2020). With good self-management, the patient's level of awareness in undergoing treatment will increase so that the treatment program can run effectively to maintain health and prevent more serious illnesses (Zhang et al., 2020).

An individual's ability to manage self-care is influenced by several factors such as age, gender, level of development, health status, family system, environmental and socio-cultural factors. Several studies have proven that the patient's ability to carry out self-management influences the blood pressure of hypertensive patients. In research by Isnaini & Lestari (2018), it was found that self-management helps reduce blood pressure in addition to taking antihypertensive drugs. Self-care management is needed to control blood pressure in hypertension sufferers (Friedberg et al., 2015). Therefore, patients must be responsible for carrying out self-management both to reduce symptoms and reduce the risk of complications (Shahaj et al., 2019).

Hypertension self-management behaviors recommended by JNC-8 are weight reduction in obese individuals, implementation of the Dietary Approaches to Stop Hypertension (DASH) diet, implementation of a low sodium diet, involvement in physical activity, and moderation in alcohol consumption. In Douglas & Howard's research this study found that certain demographic and socio behavioral characteristics were related to engagement in self-management behaviors. Therefore, self-management is needed to maintain blood pressure (Douglas & Howard, 2015). Factors that influence care behavior are age, gender, developmental conditions, health conditions, health systems, family factors, environmental factors, lifestyle and available resources such as economic resources, physical energy, community institutions, and sources of information or knowledge. (Alligood, 2017). health behavior factors are important in preventing and treating hypertension (Riyadina et al., 2019). Factors that have an important role in carrying out self-management in controlling blood pressure include the patient's knowledge of their health problems. Good patient knowledge will have a high level of self-confidence and build trust in hypertension treatment (Latifa, 2015). The better the patient's knowledge about the disease, the more the patient will understand and be aware of maintaining a healthy lifestyle and complying with medication consumption (Irazola et al., 2016). Research conducted by Schoenthaler et al., (2020) shows that what influences achieving compliance are beliefs about the disease, the need for treatment and treatment problems. Belief in the effectiveness of therapy, self-efficacy, social support, and communication between health workers and patients also influence self-management of hypertension patients (Isnaini & Lestari, 2018).

The Self-management concept above, this approach is expected to improve hypertension care behavior by using the Health Belief Model theory where this theory emphasizes individual attitudes and beliefs in health behavior (Glanz et al., 2008). To determine the individual's perception of whether they accept their health condition or not, according to Janz and Becker, 1984, the Health Belief Model is a concept that expresses an individual's reasons for wanting or not wanting to carry out healthy behavior (Notoatmodjo, 2007). Beliefs about health problems are one of the factors that influence a person's behavior. Self-confidence is an important factor in relation to hypertension self-care. In modifying their lifestyle, hypertensive patients must have high self-confidence and self-confidence to motivate and convince themselves that they are able to achieve a healthy lifestyle. So the Health Belief Model theory is used to look at hypertension sufferers' awareness of the disease they suffer from and the actions taken to prevent and reduce it (Keeping Up with the Kardashians, 2019).

The Health Belief Model contains several key concepts that predict actions to prevent, screen for, or control these disease conditions including susceptibility, seriousness, benefits and barriers to behavior, cues to action, and most recently self-efficacy. If individuals consider themselves vulnerable to a condition, believe the condition has potentially serious consequences, believing that the actions available to them will be beneficial in reducing their vulnerability or severity. condition, and believing

the anticipated benefits of taking action outweigh the barriers (or costs) of action, they are likely to take actions that they believe will reduce their risks (Glanz et al., 2008).

To reduce morbidity and mortality in hypertensive patients, it is important to help patients carry out self-management, namely controlling and managing themselves. There are two main principles for managing hypertension, namely standard treatment and changing lifestyle. Even though the management of hypertension with medication is currently progressing, cases of re-admission of hypertensive patients still occur (Kemenkes RI, 2019). No one has conducted research on the self-management model in Timor-Leste, especially CS Comoro. By studying the problems described above, researchers are interested in developing a self-management model based on the Health Belief Model theory for self-care behavior at home in hypertensive patients

Method

The research design uses an explanatory survey with a cross-sectional approach. Research is carried out by measuring or observing independent and dependent variable data only once at a time (Nursalam, 2017). To find events or symptoms that occur with the final result of getting a picture of the cause and effect relationship of the independent variable and the dependent variable (Suggestion, 2014). This research has 2 stages, namely stage 1 identifying factors through questionnaires, analyzing the influence of factors in self-management and getting a picture of the cause and effect relationship of the independent variables and dependent variables, with PLS analysis and stage 2 research, namely compiling a hypertension self-management module. based on the results of phase 1 research.

Research and Discussions

Result

General Description of Research Locations

The research was carried out at the Centro Saúde Comoro Community Health Center, Dili-Timor-Leste, which consists of 8 health posts, namely Posto Sanitario Lemkari, Posto Sanitario Manleuana, Posto Sanitario Maloa, Posto Sanitario Tasi-toli, Posto Suco Fatuhada, Campo Alor, Anin Fuik & Posto Suco Bebobuk. Comoro Health Center is in Dili District with a population of 170,577 habitants. The working area of the Comoro Community Health Center consists of 4 sanitary posts, namely Manleuana sanitario post, Lemkari sanitario post, Maloa sanitario post, Tasi-tolu sanitario post and 4 suco posto, namely Bebonuk suco post, Campo-Alor posto suco, Fatuhada posto suco and post suco Anin-Fuik Beto. Comoro Dili Community Health Center has 46 general practitioners, 26 nurses spread across several rooms, 28 midwives, 9 pharmacists, 2 nutritionists and 8 dentists and 4 lab analysts. The programs implemented by the community health center are as follows: Maternal and Child Health, CDs (communicable diseases), NCDs (mental health, oral health, health of hypertensive patients), environmental health, health promotion, family health & the SISCa program.

Health Post activities include checking blood pressure, measuring height, weight and BMI, simple medication, health education. The results of phase 1 and phase 2 research are explained empirically. The results of Research 1 include the characteristics of the research site, subject characteristics and the results of the model development analysis. Descriptive analysis includes research data characteristics and inferential analysis using a structural equation modeling approach and Partial Least Square Path Modeling to determine the magnitude of the influence between research construct variables. Stage 2 research results explain the results of the analysis concluded through strategic issues and then proceed to stage. Focus Group Discussion (FGD) to be continued as a recommendation for a self-management model and module creation.

Results of Analysis of Respondents' Perceptions

Demographic Factors (X1)

Table 1

Results Description of Demographic Factors in Hypertension sufferers at Centro Saude Comoro Dili, Timor-Leste

Indicator	Category	Frequency	Percentage (%)
X1.1 Age	26 – 35 years old	18	13.3
	36 – 45 years old	51	37.1
	46 – 55 years old	29	21.5
	56 – 65 years old	33	24.4
	> 65 years old	4	3.0
	Total	**135**	**100.00**
X1.2 Gender	Male	50	37.0
	Female	85	63.0
	Total	**135**	**100.00**
X1.3 Genetics/Family History of Hypertension	None	76	56.3
	Exist	59	43.7
	Total	**135**	**100.00**
X1.4 Job	Not Working	23	17.0
	Farmer	23	17.0
	Merchant	57	42.2
	Civil servants	11	8.1
	Private	11	8.1
	Total	**135**	**100.00**
X1.5 Education level	did not pass elementary school	41	30.4
	Elementary School	42	31.1
	Middle School	26	19.3
	High School	14	10.4
	Total	**135**	**100.00**

The results of the calculation in table 1 show that of the 135 respondents, most of the respondents aged 36 – 45 years as many as 51 people or about 37.1% are female, as many as 85 people or about 63% do not have Genetics/History of Hypertension in the Family as many as 76 people or about 56.3%, most of the respondents work as traders and most of the respondents have the last elementary education.

Sociopsychological Factors (X2)

Table 2

Results of Sociopsychological Factor Description in Hypertension Patients in Centro Saude Comoro Dili, Timor-Leste

Indicator	Category	Frequency	Percent
X2.1 Personality	Introvert	7	5.2
	Extrovert	128	94.8
	Total	**135**	**100.00**
X2.2 Social class	Lower class	104	77.0
	Middle Class	14	10.4
	Upper class	17	12.6
	Total	**135**	**100.00**

The results of the calculation in table 2 show that out of 135 respondents, most of the respondents have an Extrovet Personality and are in the lower social class

Structural Factors (X3)

Table 3

Presents the results of the structural factors description in hypertensive patients at Centro Saude Comoro Dili, Timor-Leste

Indicator	Category	Frequency	Percent
X3.1 Knowledge	Insufficient	73	**54.1**
	Sufficient	47	34.8
	Good	15	11.1
	Total	**135**	**100.00**
X3.2 Previous Experience	Sufficient experience	0	0.0
	Insufficient experience	135	100.0
	Total	**135**	**100.00**

The calculation results in table 3 indicate that out of 135 respondents, the majority have insufficient knowledge and all respondents have experience in the insufficient category.

Individual beliefs (X4)

Table 4

Results of Individual Belief Description in Hypertensive Patients at Centro Saude Comoro Dili, Timor-Leste

Indicator	Category	Frequency	Percent
X4.1 *Perceived susceptibility*	Low	82	**60.7**
	Medium	28	20.7
	High	25	18.5
	Total	**135**	**100.00**
X4.2 *Perceived severity*	Low	82	**60.7**
	Medium	28	20.7
	High	25	18.5
	Total	**135**	**100.00**
X4.3 *Perceived barriers*	Less inhibited	28	20.7
	Quite hampered	65	**48.1**
	Highly hampered	42	31.1
	Total	**135**	**100.00**
X4.4 *Perceived benefits*	Not helpful	41	30.4
	Less helpful	65	**48.1**
	Helpful	29	21.5
	Total	**135**	**100.00**
X4.5 *Self Efficacy*	Low	67	49.6
	Medium	43	31.9
	High	25	18.5
	Total	**135**	**100.00**
X4.6 *Cues to Action*	Insufficient	67	**49.6**
	Sufficient	43	31.9
	Good	25	18.5
	Total	**135**	**100.00**

The calculation results in Table 4 indicate that out of 135 respondents, the majority have Perceived susceptibility, Perceived severity, self-efficacy, and Cues to Action in the low/insufficient category Additionally, most respondents have Perceived barriers categorized as moderately hindered, and Perceived benefits categorized as less beneficial

Self-Management (X5)

Table 5

Presents the results of the Self-Management description in hypertensive patients at Centro Saude Comoro Dili, Timor-Leste

Indicator	Category	Frequency	Percent
X5.1 Self-integration	Insufficient	73	54.1
	Sufficient	32	23.7
	Good	30	22.2
	Total	**135**	**100.00**
X5.2 Self-regulation	Insufficient	66	48.9
	Sufficient	37	27.4
	Good	32	23.7
	Total	**135**	**100.00**
X5.3 Interaction with healthcare professionals	Insufficient	65	48.1
	Sufficient	46	34.1
	Good	24	17.8
	Total	**135**	**100.00**
X5.4 Self-monitoring	Insufficient	66	48.9
	Sufficient	37	27.4
	Good	32	23.7
	Total	**135**	**100.00**
X5.5 Compliance with recommended rules	Insufficient	64	47.4
	Sufficient	42	31.1
	Good	29	21.5
	Total	**135**	**100.00**

The calculation results in table 5 indicate that out of 135 respondents, most of them have self-integration, self-regulation, interaction with healthcare professionals, self-monitoring, and compliance with recommended rules in the insufficient category

Self-care behavior (Y1)

Table 6

Description of Self-Care Behavior in Hypertensive Patients at Centro Saude Comoro Dili, Timor-Leste

Indicator	Category	Frequency	Percent
Y1.1 Physical activity	Insufficient	79	58.5
	Sufficient	42	31.1
	Good	14	10.4
	Total	**135**	**100.00**
Y1.2 Diet DASH	Insufficient	50	37.0
	Sufficient	38	28.1
	Good	47	34,8
	Total	**135**	**100.00**
Y1.3 Healthcare control	Insufficient	88	65.2
	Sufficient	32	23.7
	Good	15	11.1
	Total	**135**	**100.00**
Y1.4 Take medication as prescribed	Insufficient	21	15,6
	Sufficient	67	49.6
	Good	47	34.8
	Total	**135**	**100.00**
Y1.5 Quit smoking	Insufficient	76	56.3
	Sufficient	44	32.6
	Good	15	11.1
	Total	**135**	**100.00**
Y1.6 Management Stress	Insufficient	65	48.1
	Sufficient	55	40.7
	Good	15	11.1
	Total	**135**	**100.00**

The calculation results in table 6 indicate that out of 135 respondents, most of them fall into the insufficient category for Physical Activity, DASH Diet, Health Service Control, Smoking Cessation, and Stress Management However, the respondents do have a habit of Taking Medication as Advised in the sufficient category

Evaluation Outer Model

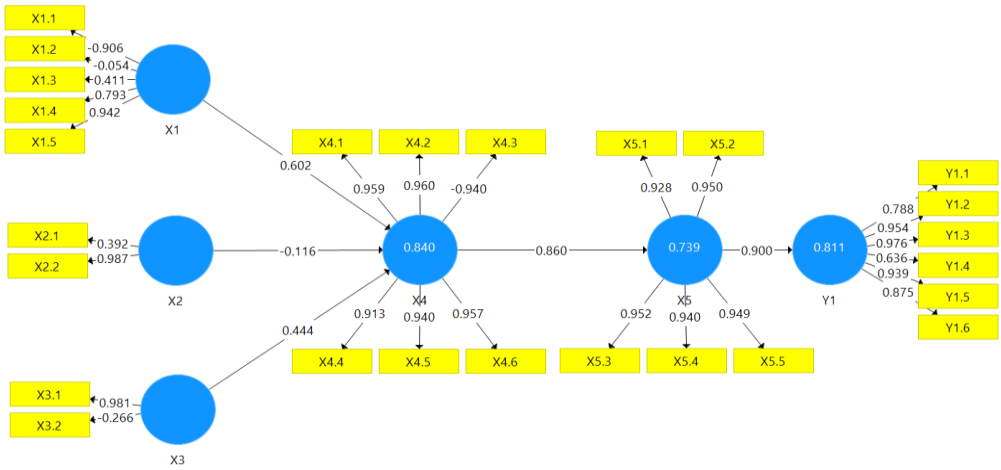


Image 1 Constructing the Outer Model

Converge Validity Test

Table 7
Convergent Validity Test Results

Variable	Indicator	Loading Factor	BIRD
Demographic Factors (X1)	X1.1 Age	-0.906	0,502
	X1.2 Gender	-0.054	
	X1.3 Genetics/ Family History of Hypertension	0.411	
	X1.4 Work	0.793	
	X1.5 Education Level	0.942	
Sociopsychological Factors (X2)	X2.1 Personality	0.392	0,564
	X2.2 Social Class	0.987	
Structural Factors (X3)	X3.1 Knowledge	0.981	0,516
	X3.2 Previous Experience	-0.266	
Individual Confidence (X4)	X4.1 *Perceived susceptibility*	0.959	0,893
	X4.2 *Perceived severity*	0.960	
	X4.3 *Perceived barriers*	-0.940	
	X4.4 *Perceived benefits*	0.913	
	X4.5 *Self Efficacy*	0.940	
	X4.6 *Cues to Action*	0.957	
Self-Management (X5)	X5.1 Self-integration	0.928	0,891
	X5.2 Self-Regulation	0.950	
	X5.3 Interaction with health workers	0.952	
	X5.4 Self-Monitoring	0.940	
	X5.5 Compliance with recommended rules	0.949	
Treatment Behavior Diri (Y1)	Y1.1 Physical Activity	0.788	0,756
	Y1.2 Diet DASH	0.954	
	Y1.3 Healthcare Control	0.976	
	Y1.4 Take Medication as Recommended	0.636	
	Y1.5 Quit	0.939	
	Y1.6 Management Stress	0.875	

Table 8
Results of Convergence Validity Testing After Reduction

Variable	Indicator	Loading Factor	BIRD
Demographic Factor (X1)	X1.4 Jobs	0.793	0,819
	X1.5 Education level	0.942	
Sociopsychological Factors (X2)	X2.2 Social Class	0.987	1,000
Structural Factors (X3)	X3.1 Knowledge	0.981	1,000
Individual Confidence (X4)	X4.1 *Perceived susceptibility*	0.959	0,899
	X4.2 *Perceived severity*	0.960	
	X4.4 *Perceived benefits*	0.913	
	X4.5 *Self Efficacy*	0.940	
	X4.6 *Cues to Action*	0.957	
Self-Management (X5)	X5.1 Self-integration	0.928	0,891
	X5.2 Self-Regulation	0.950	
	X5.3 Interaction with Healthcare Workers	0.952	
	X5.4 Self-Monitoring	0.940	
	X5.5 Compliance with recommended rules	0.949	
Self-Care Behavior (Y1)	Y1.1 Physical Activity	0.788	0,756
	Y1.2 Diet DASH	0.954	
	Y1.3 Healthcare Control	0.976	
	Y1.4 Take Medication As Recommended	0.636	
	Y1.5 Quit Smoking	0.939	
	Y1.6 Management Stress	0.875	

Discriminant Validity Test

Table 9
Results of Cross Loading Discrimination Validity Test

Indicator	X1	X2	X3	X4	X5	Y1
X1.4	**0.866**	0.623	0.587	0.639	0.642	0.568
X1.5	**0.942**	0.703	0.914	0.949	0.915	0.872
X2.2	0.736	**1.000**	0.718	0.659	0.657	0.597
X3.1	0.858	0.718	**1.000**	0.853	0.835	0.801
X4.1	0.912	0.708	0.881	**0.966**	0.897	0.864
X4.2	0.918	0.683	0.866	**0.967**	0.907	0.868
X4.4	0.814	0.500	0.706	**0.894**	0.743	0.723
X4.5	0.804	0.582	0.759	**0.949**	0.765	0.747
X4.6	0.824	0.629	0.814	**0.962**	0.781	0.757
X5.1	0.795	0.621	0.789	0.786	**0.928**	0.853
X5.2	0.817	0.633	0.786	0.804	**0.950**	0.826
X5.3	0.851	0.634	0.790	0.828	**0.952**	0.825
X5.4	0.843	0.587	0.778	0.840	**0.939**	0.874
X5.5	0.859	0.627	0.797	0.836	**0.949**	0.868
Y1.1	0.681	0.444	0.649	0.748	0.766	**0.788**
Y1.2	0.834	0.541	0.789	0.823	0.893	**0.954**
Y1.3	0.750	0.581	0.746	0.779	0.843	**0.976**
Y1.4	0.493	0.220	0.490	0.474	0.495	**0.636**
Y1.5	0.802	0.646	0.787	0.786	0.875	**0.939**
Y1.6	0.671	0.591	0.669	0.705	0.746	**0.875**

Construct Reliability

Table 10
Construction Reliability Test Results

Variable	***Cronbach's Alpha***	***Composite Reliability***
Demographic Factor (X1)	0.786	0.900
Sociopsychological Factors (X2)	1.000	1.000
Structural Factors (X3)	1.000	1.000
Individual Confidence (X4)	0.972	0.978
Self-Management (X5)	0.969	0.976
Self-Care Behavior (Y1)	0.931	0.948

Inner Model Evaluation

Predictive Relevance (Q2)

Table 11

Predictive Relevance Test Results (Q2)

Variable	SSO	SSE	Q^2 (=1-SSE/SSO)
Individual Confidence	645.000	162.676	0.748
Self-Management	645.000	215.148	0.666
Self-Care Behavior	774.000	306.657	0.604

Coefficient of Determination (R2)

Table 12

Determination Coefficient (R2) Results

Dependent Variables	R Square	*R Square Adjusted*
Individual Confidence	0.842	0.839
Self-Management	0.753	0.751
Self-Care Behavior	0.811	0.809

Table 12 shows that the R-square value of the Individual Belief variable (X4) is 0.842 or 84.2%. This shows that the Individual Confidence variable (X4) can be explained by the Demographic Factors (X1), Sociopsychological Factors (X2), and Structural Factors (X3) variables amounting to 84.2%. Or in other words, the contribution of the influence of the Demographic Factors (X1), Sociopsychological Factors (X2), and Structural Factors (X3) to the Individual Belief variable (X4) is 84.2%. Meanwhile, the remaining 15.8% is the contribution of other variables not discussed in this research.

The R-square value of the Self-Management variable (X5) is 0.753 or 75.3%. This can show that the diversity of the Self-Management variable (X5) can be explained by the Individual Confidence variable (X4) of 75.3%. Or in other words, the contribution of the influence of the Individual Confidence variable (X4) to the Self-Management variable (X5) is 75.3%. Meanwhile, the remaining 24.7% is another contribution variable which is not discussed in this research.

The R-square value of the Self Care Behavior variable (Y1) is 0.811 or 81.1%. This shows that the diversity of the Self-Care Behavior variable (Y1) can be explained by the Self-Management variable (X5) of 81.1%. Or in other words, the contribution of the influence of the Self-Management variable (X5) to the Self-Care Behavior variable (Y1) is 81.1%. Meanwhile, the remaining 18.9% is another contribution variable which is not discussed in this research.

Hypothesis Testing

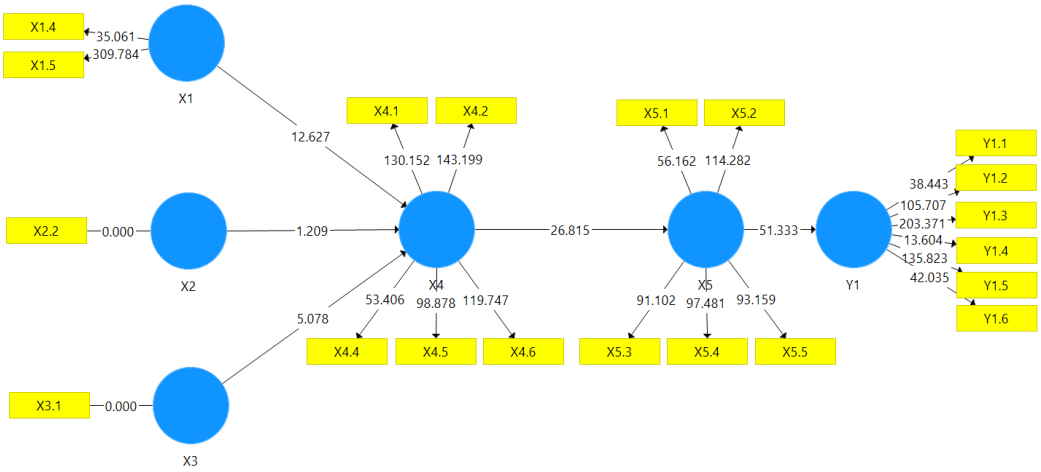


Image 2 Inner Model Construct

Table 13
Results of Hypothesis Testing Directly

Influence	Coefficient	T Statistics (|O/STDEV|)	P Values	Information
Demographic Factors (X1) -> Individual Beliefs (X4)	0.685	12.627	0.000	Significant
Sociopsychological Factors (X2) -> Individual Beliefs (X4)	-0.074	1.209	0.227	Insignificant
Structural Factors (X3) -> Individual Confidence (X4)	0.318	5.078	0.000	Significant
Individual Confidence (X4) -> *Self-Management* (X5)	0.868	26.815	0.000	Significant
Self-Management (X5) -> Self-Care Behavior (Y1)	0.900	51.333	0.000	Significant

Influence of Demographic Factors (X1) on Individual Beliefs (X4)

Testing the influence of Demographic Factors (X1) on Individual Confidence (X4) produces a T statistics value of 12.627 with a p-value of 0.000. The test results show that the T statistics value is > 1.96 and the p-value is < 0.05. This means that there is a significant influence of Demographic Factors (X1) on Individual Confidence (X4). The resulting coefficient value is positive, namely 0.685. Thus, it can be interpreted that in terms of demographic factors, the better the level of education & employment, the more likely it is to increase the patient's individual confidence (X4).

Influence of Sociopsychological Factors (X2) on Individual Beliefs (X4)

The test of the influence of Sociopsychological Factors (X2) on Individual Beliefs (X4) produced a T statistical value of 1.209 with a p-value of 0.227. The test results

showed that the T value of statistics < 1.96 and the p-value > 0.05. This means that there is no significant influence of Sociopsychological Factors (X2) on Individual Beliefs (X4).

Influence of Structural Factors (X3) on Individual Beliefs (X4)

Testing the influence of Structural Factors (X3) on Individual Confidence (X4) produces a T statistics value of 5.078 with a p-value of 0.000. The test results show that the T statistics value is > 1.96 and the p-value is < 0.05. This means that there is a significant influence of Structural Factors (X3) on Individual Confidence (X4). The resulting coefficient value is positive, namely 0.318. Thus, it can be interpreted that the better the Structural Factors (X3), the more likely it is to increase Individual Confidence (X4).

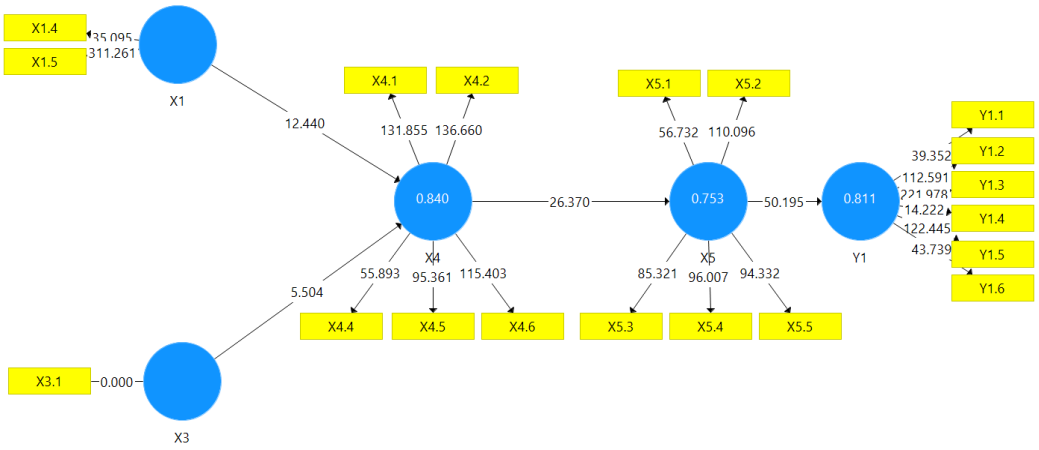
The Influence of Individual Confidence (X4) on Self-Management (X5)

Testing the influence of Individual Confidence (X4) on Self-Management (X5) produces a T statistics value of 26.815 with a p-value of 0.000. The test results show that the T statistics value is > 1.96 and the p-value is < 0.05. This means that there is a significant influence of Individual Confidence (X4) on Self-Management (X5). The resulting coefficient value is positive, namely 0.868. Thus, it can be interpreted that the better the Individual's Confidence (X4), the greater the tendency to improve Self-Management (X5).

Effect of Self-Management (X5) on Self-Care Behavior (Y1)

Testing the influence of Self-Management (X5) on Self-Care Behavior (Y1) produces a T statistics value of 51.333 with a p-value of 0.000. The test results show that the T statistics value is > 1.96 and the p-value is < 0.05. This means that there is a significant influence of Self-Management (X5) on Self-Care Behavior (Y1). The resulting coefficient value is positive, namely 0.900. Thus, it can be interpreted that the better Self-Management (X5), the more likely it is to increase Self-Care Behavior (Y1).

New Research Finding



Discussion

The influence of demographic factors (occupation & education level) on individual beliefs regarding hypertensive patients

The assessment of demographic factors in this research is employment and education level. These parameters are obtained from respondents' answers to the demographic questionnaire, respondents fill in according to their current situation, employment status and education level. Demographic factors (occupation and level of education) influence individual confidence in hypertensive patients in carrying out self-care behavior at home. In this study, testing the influence of demographic factors on individual beliefs produced a T statistics value of 12.627 with a p-value of 0.000. The test results show that the T statistics value is > 1.96 and the p-value is < 0.05. This means that there is a significant influence of demographic factors on individual beliefs. The resulting coefficient value is positive, namely 0.685. Thus, it can be interpreted that the better the education and work, the more likely it is to increase individual confidence.

Education is related to positive perceptions of maintaining mental and physical fitness levels. The higher the education of hypertensive patients will influence the use of health facilities based on each person's self-perception (Friebe & Schmidt-hertha, 2019). The high risk of developing hypertension in people with low education is possibly due to a person with low education's lack of knowledge regarding health and difficulty or slow acceptance of information (counseling) provided by nurses so that it has an impact on healthy behavior or lifestyle. The level of education according to Wang et al (2018) also reveals that a person's education influences the patient's condition in obeying the orders of health workers, the higher the education, the more understanding and knowledge regarding their own health.

The results of this study showed that education was a risk factor related to self-care behavior. Most of the respondents in this study had elementary school education. The higher the level of education, the easier it will be for individuals to obtain information about their own health, this is related to hypertension patients adopting healthy lifestyle behaviors. Research by Wang et al (2018) explains the same thing found in this study, respondents who have a good level of education and disease perception have quite good lifestyle compliance.

The influence of structural factors (knowledge) on individual beliefs in hypertensive patients

Factors that have an important role in carrying out self-management in controlling blood pressure include the patient's knowledge of their health problems. The results of this research showed that most respondents had insufficient knowledge, 54.1%, so only 11.1% had good knowledge, therefore education was a risk factor related to self-care behavior. Based on tests of the influence of structural factors on individual beliefs in this research, the T statistics value was 5.078 with a p-value of 0.000. The test results show that the T statistics value is > 1.96 and the p value is < 0.05. This means that there is a significant influence of structural factors on individual beliefs. The resulting coefficient

value is positive, namely 0.318. Thus, it can be interpreted that the better the Structural Factors, the more likely it is to increase Individual Confidence.

Education can bring insight or knowledge to a person. In general, someone with higher education will have broader knowledge, therefore with this knowledge a person will be aware of their health and take preventive action (Notoatmodjo, 2014). Good patient knowledge will have a high level of self-confidence and build trust in hypertension treatment (Latifa, 2015). The better the patient's knowledge about the disease, the more the patient will understand and be aware of maintaining a healthy lifestyle and complying with medication consumption (Irazola et al., 2016). Good knowledge and health-related information obtained will be able to change the lifestyle of hypertensive patients as early as possible, can change behavior as expected, and have internal factors such as motivation and positive perceptions (Jankowska-Polańska et al., 2016). Research by DiCarlo et al., (2016) states that the better the knowledge and information obtained by respondents regarding hypertension, the better the respondent's efforts to control the hypertension they suffer from. The structural factors of knowledge and information of hypertension patients are good, the better the internal factors individuals tend to find out. health problems, the knowledge and information obtained will increase so that they are able to overcome their health problems.

The influence of individual beliefs (perceived susceptibility, perceived severity, perceived benefits, perceived self-efficacy, cues to action) on self-management in hypertensive patients.

In the results of this research, it was found that low perceived susceptibility was 60.7%, low perceived severity was 60.7%, less useful perceived benefit was 48.1%, and less cues to action were 49.6%, low self-efficacy of all components in the health belief model are in the low category. Based on the test of the influence of individual beliefs on Self-Management, it produces a T statistics value of 26.815 with a p-value of 0.000. The test results show that the T statistics value is > 1.96 and the p-value is < 0.05. This means that there is a significant influence of individual beliefs on self-management. The resulting coefficient value is positive, namely 0.868. Thus, it can be interpreted that the better the individual's confidence, the greater the tendency to improve self-management in hypertension sufferers.

Perceptions of illness include perceived perceptions associated with a person's condition, beliefs about the duration of the illness, its consequences, perceived ability to control the condition and the extent to which treatment is effective in controlling the illness, understanding of the condition, emotional responses and concerns about the condition, and beliefs. about the possible causes of this condition (Bayrami et al., 2017).

The Effect of Health Belief Model-based Self-Management on Self-Care Behavior of Hypertensive Patients

Self-management based on the Health Belief Model for the self-care behavior of hypertensive patients has several variables, namely self-integration, self-regulation, interaction with health workers, self-monitoring and compliance with recommended rules. Based on the results of the analysis, it was found that self-management of hypertensive patients was mostly lacking, 54.1% of respondents lacked self-integration, 48.9% of respondents lacked self-regulation, 48.1% of respondents lacked interaction with health workers, 48.9% of respondents lacked monitoring. themselves, and 47.4% of respondents lacked compliance with the recommended rules. Of all the components of self-management it is in the low category. The analysis results of the test of the influence of Self-Management on Self-Care Behavior produced a T statistics value of 51.333 with a p-value of 0.000. The test results show that the T statistics value is > 1.96 and the p-value is < 0.05. This means that there is a significant influence of Self-Management (X5) on Self-Care Behavior (Y1). The resulting coefficient value is positive, namely 0.900. Thus, it can be interpreted that the better self-management, the more likely it is to increase self-care behavior.

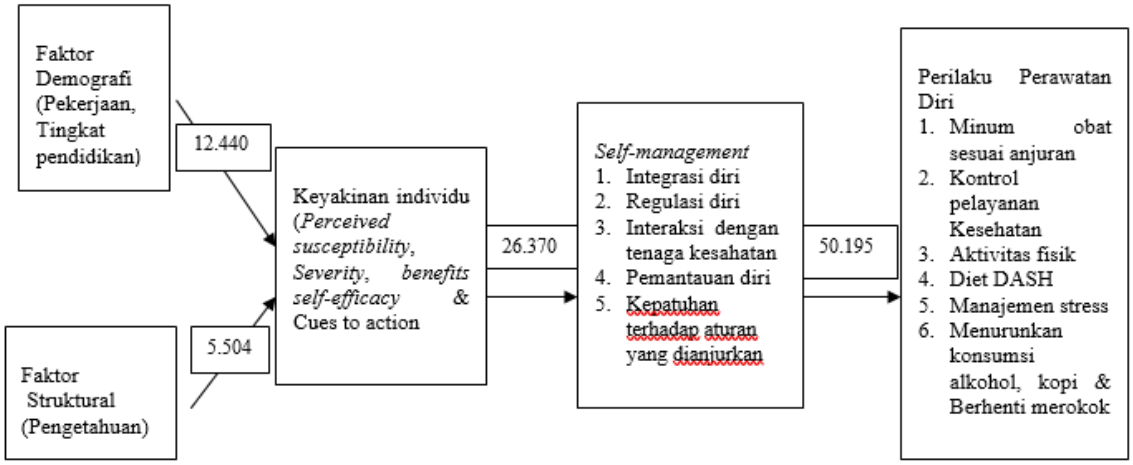
Development module of the Self-Management Model based on the Health Belief Model towards self-care behavior in hypertensive patients

Modules are subject matter that is prepared and presented in writing so that you can absorb the material independently or require help from other people. The title of the module compiled in this research is "Self-Management Module based on the Health Belief Model for self-care behavior at home for hypertensive patients"

The aim of this module is as a Self-management Model Intervention based on a health belief model for self-care behavior at home which is useful for increasing patient and community knowledge regarding lifestyle compliance to control blood pressure, and knowing, improving and applying self-care behavior efforts for hypertensive patients in self-management model based on the health belief model. It is hoped that this module can later be used as a guide for nurses or health workers to use as a guide for educational interventions to help patients improve patient self-management to change the self-care behavior of hypertensive patients.

Module material Based on the results of the FGD and expert consultations carried out by researchers, the material used to compile this module is as follows: Self-Management Concept, Health Belief Model Concept, Hypertension Concept, Self-care Behavior Concept, Self-management Guide based on the health belief model towards self-care behavior, Closing and attachments to the Research questionnaire

New Research Findings



Research Findings Development of a self-management model based on a health belief model on self-care behavior at home for hypertension patients

Conclusion

Demographic factors in hypertensive patients have a positive influence and are interconnected with self-management based on the health belief model. The better the demographic factors of hypertensive patients, the better the self-management based on the health belief model and vice versa.

Structural factors in hypertensive patients have a positive influence and are interconnected with self-management based on the health belief model. The better the structural factors that hypertensive patients have, the better the self-management based on the health belief model, on the other hand.

Individual beliefs have a positive influence and are interconnected with hypertension self-care. Because the Health Belief Model contains several key concepts that predict actions to prevent, screen, or control these disease conditions including vulnerability, seriousness, benefits and barriers to behavior, cues to action, and most recently self-efficacy. If individuals consider themselves vulnerable to a condition, believe the condition has potentially serious consequences, believing that the actions available to them will be beneficial in reducing their vulnerability or severity. condition, and believing the anticipated benefits of acting outweigh the barriers (or costs) of action, they are likely to take actions that they believe will reduce their risk.

Self-management based on the health belief model has a positive influence and is interconnected with hypertension self-care. Self-management helps lower blood pressure in addition to taking antihypertensive drugs. Self-care management is needed to control blood pressure in hypertension sufferers. Therefore, patients must be responsible for carrying out self-management both to reduce symptoms and reduce the risk of complications. Self-management can be carried out by applying five components, namely: self-integration, self-regulation, interaction with health workers, self-monitoring and adherence to recommended treatment. With good self-management, the patient's level of awareness in undergoing treatment will increase so that the treatment program can run effectively to maintain health and prevent more serious illnesses.

Self-management development module based on a health belief model for self-care behavior in hypertensive patients is a benchmark for knowing, improving, and can be applied in carrying out self-care behavior for hypertensive patients well

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