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**RESEARCH**

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## The Role of Community Nurses in the Prevention of Complications on Hypertension Patients in Integrated Health Centers

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### Abstract

Complications of hypertensive patients are expected to continue to increase. Integrated Health Center of Sikumana, Kupang City is one of the major health centers that have a high case of hypertension complications in Kupang City, NTT Province. The objective of this study is to determine the role of community nurses in the prevention of complications in hypertensive patients at the Integrated Health Center of Sikumana, Kupang City. The research method is descriptive with a survey design. The population in research is nurses in the Integrated Health Center of Sikumana, Kupang City comprising 21 people. The sample was taken from the total population with inclusion criteria of PNS (civil servant) and PTT (non-permanent employee) nurses from the government, minimum education of Nursing D-III, and working period  $\geq 2$  years. The results showed 52.4% of nurses assessed risk factors for complications in hypertensive patients, 81% formulated nursing diagnoses, 76.2% developed intervention plans, 76.2% implemented, 54.5% conducted community empowerment, 85.7% conducted health education, 95.5% conducted referral in prevention complications in hypertensive patients. It can be concluded that the role of community nurses in the prevention of complications in hypertensive patients in Integrated Health Center of Sikumana, Kupang City has largely been conducted well, and it is recommended that nurses at the Integrated Health Center have participated actively in following various training and work on the community nursing process to comply with the latest instructions and regulations.

**Keywords:** Role of community nurses, prevention of complications, hypertension

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## 1. INTRODUCTION

Hypertension is a type of chronic non-communicable disease that greatly affects the health status of the Indonesian people. The government states that the country of Indonesia is undergoing an epidemiological transition to double burden diseases, 10 where non-communicable and infectious diseases are at the same time a health problem which is an important concern in the community. Hypertension that is not treated properly will result in dangerous complications for sufferers (Kemenkes RI, 2014).

Complications of hypertension have caused about 9.4% of deaths worldwide every year. Deaths caused by coronary disease and stroke are serious complications experienced by hypertension patients which are predicted to continue to reach 23.3 million deaths in 2030 (Kemenkes RI, 2014). Sikumana Primary Health Center (Puskesmas) of Kupang City has quite a high case of hypertension complications in Kupang City. The medical record data found in the study of Israfil et al., (2018) shows the number of hypertension patients recorded in the Sikumana Primary Health Center in Kupang City as many as 292 people. The number of visits every month ranges from 199 to 270 people. As many as 40 patients were recorded as having experienced complications, 5 people died with complications in 2016, and 3 people died in 2017. The results of research at the Sikumana Primary Health Center also found that most of the complications that occur in hypertension patients at Sikumana Primary Health Center in Kupang City are Stroke Non-Haemorrhagic and coronary artery disease (Israfil et al., 2018). Complications of hypertension in hypertension patients at Sikumana Primary Health Center in Kupang City are caused by the lack of patient knowledge in preventing hypertension complications, low behavior/actions of patients in preventing hypertension complications, and low family health tasks in preventing complications in hypertension patients in Kupang City due to the lack of patient knowledge in preventing hypertension complications, low behavior/actions of patients in preventing hypertension complications, and low family health tasks in preventing complications in hypertension patients in Kupang City in the Sikumana Primary Health Center in Kupang City (Israfil et al., 2018).

Community Nursing is a professional nursing service aimed at people with a high-risk group emphasis on efforts to achieve optimal health status through health promotion, disease prevention, rehabilitation maintenance by ensuring the affordability of health services needed and involving clients as partners in planning, implementing and evaluating nursing services. The role of community nurses in Primary Health Center is an important factor in preventing complications of hypertension patients. A nurse is someone who has completed a tertiary education in nursing either domestically or abroad that has been recognized by the government of the Republic of Indonesia, is registered and given the authority to establish nursing practice in accordance with applicable laws and regulations. Constitution No. 38 of 2014 concerning nursing has mandated that in conducting their duties as a provider of nursing care in the field of public health efforts, nurses of Primary Health Center are authorized to conduct public health nursing assessments at the family and community groups, establish public health

nursing problems, assist in the discovery of disease cases, plan public health nursing actions, conduct public health nursing actions, conduct case referrals, evaluate the results of public health nursing actions, conduct community empowerment, conduct advocacy in public health care, establish partnerships in public health care, conduct counseling, manage cases, and conduct the management of complementary and alternative nursing (Undang-Undang RI, 2014). The objective of this study is to determine the role of community nurses in the prevention of complications in hypertension patients in the Sikumana Primary Health Center in Kupang City.

## 2. RESEARCH METHOD

This research is a descriptive study with a survey design to discover the role of community nurses in the prevention of complications in hypertension patients. The population and study sample were nurses who worked at Sikumana Primary Health Center in Kupang City as many as 21 people. The study sample was taken from the total population with inclusion criteria of PNS (Civil Servants) and PTT (temporary employees) nurses from the government, minimum education of Nursing DIII, working period  $\geq 2$  years. Voluntary nurses were not included in the study sample. Variables in this research are the role of community nurses in preventing complications of hypertension patients, which are assessing the risk factors for hypertension complications, formulating nursing diagnoses, preparing intervention plans, implementing, community empowerment, health education, and conducting case referrals. Data collection was implemented using questionnaires, interviews and observations of patient care documents and patient care. The research data were identified and analyzed descriptively to determine the role of community nurses in the prevention of complications in hypertension patients in Sikumana Primary Health Center in Kupang City.

## 3. RESULTS AND DISCUSSION

Table 1. Characteristics of respondents based on level of education, employment status, years of service, assessment, nursing diagnosis, nursing intervention, nursing action, community empowerment, health education and referral at the Sikumana Primary Health Center in Kupang City on September-October 2019.

No	Respondents' Characteristics	Total	Percentage (%)
<b>1</b>	<b>Educational Level</b>		
	S2 of Nursing/Specialist	0	0
	DIV/ S1 Nursing Ns	2	9.5
	DIII Nursing	19	90.5
	Total	21	100
<b>2</b>	<b>Employee Status</b>		
	PNS (Civil Servant)	19	90.5
	PTT (Temporary Employee)	2	9.5

Total	21	100
<b>3 Working Period</b>		
< 5 years	4	19
>5 – 10 years	6	28.6
> 10 years	11	52.4
Total	21	100
<b>4 Assessment</b>		
Not conducted	0	0
Hasn't been conducted	1	4.8
Partly conducted	9	42.9
Completely conducted	11	52.4
Total	21	100
<b>5 Nursing Diagnosis</b>		
Not conducted	2	9.5
Hasn't been conducted	1	4.8
Partly conducted	1	4.8
Completely conducted	17	81.0
Total	21	100
<b>6 Nursing Intervention</b>		
Not conducted	2	9.5
Hasn't been conducted	1	4.8
Partly conducted	2	9.5
Completely conducted	16	76.2
Total	21	100
<b>7 Nursing Action</b>		
Not conducted	0	0
Hasn't been conducted	1	4.8
Partly conducted	4	19.0
Completely conducted	16	76.2
Total	21	100
<b>8 Community Empowerment</b>		

Not conducted	1	4.8
Hasn't been conducted	2	9.5
Partly conducted	6	28.6
Completely conducted	12	54.5
Total	21	100
<b>9 Health Education</b>		
Not conducted	0	0
Hasn't been conducted	1	4.8
Partly conducted	2	9.5
Completely conducted	18	85.7
Total	21	100
<b>10 Referral</b>		
Not conducted	1	4.8
Hasn't been conducted	0	0
Partly conducted	2	9.5
Completely conducted	18	95.5
Total	21	100

**Table 1** shows that the majority of respondents (90.5%) had DIII Nursing education, (90.5%) were Civil Servants, and (52.4%) had ten years of service. Most respondents (52.4%) conducted an assessment of risk factors in the prevention of complications in hypertension patients. The majority of respondents (81.0%) formulated a nursing diagnosis in the prevention of complications in hypertension patients. the majority of respondents (76.2%) devised nursing interventions in the prevention of complications in hypertension patients. The majority of respondents (76.2%) fully implemented nursing actions in the prevention of complications in hypertension patients. The majority of respondents (54.5%) implemented community empowerment in preventing complications in hypertension patients. The majority of respondents (85.7%) conducted full health education in the prevention of complications in hypertension patients and the majority of respondents (95.5%) conducted referrals in the prevention of complications in hypertension patients at the Sikumana Primary Health Center in Kupang City.

The results shows that the majority of respondents (52.4%) conducted a study of risk factors in the prevention of complications in hypertension patients in Sikumana Primary Health Center in Kupang City. The assessment was completed by interviewing risk factors for complications, physical examination, examination of vital signs, and examination of laboratory test results. Risk factors for hypertension complications that were implanted are physical activity habits, hereditary history, compliance with anti-hypertension medication consumption, dietary patterns; consumption of fatty foods,

high in sugar and salt, smoking, alcohol, and stress. There was an examination of cytolic and diastolic blood pressure, and observation of blood glucose and blood cholesterol examination results. The results of the assessment of risk factors for complications were documented in the nursing care documentation (patient status) integrated with the medical records provided at the Primary Health Center.

Nursing care standard guidelines set out in the Constitution number 38 of 2014 concerning nursing stipulate that nurses are responsible for conducting nursing studies to patients and documenting the results of the studies conducted ([Undang-Undang RI, 2014](#)). A complete assessment will produce accurate data. A complete assessment can also increase patient confidence in nurses which has an effect on patient satisfaction in receiving nursing care. It is supported by the results of research conducted by [Astar \(2018\)](#) who found that there is a positive and significant influence between nursing assessment and patient satisfaction, if the assessment of nurses is good then patient satisfaction will increase.

The results of this study indicate that almost all respondents (81.0%) said formulating a nursing diagnosis in the prevention of complications on hypertension patients. The nurse determined the nursing diagnosis by paying attention to the risk data, complicating the problem, and determining the cause. Nurses know that patients who have been examined have a nursing diagnosis of the risk of hypertension complications but nurses have not been able to formulate an appropriate nursing diagnosis in accordance with Indonesian nursing diagnosis standards. Nurses also have not documented the nursing diagnosis in the patient nursing care document (patient status) integrated in the Primary Health Center.

The inability of nurses to determine an appropriate nursing diagnosis on patients at risk of hypertension complications can be caused by the level of education, length of service of nurses in Primary Health Center, nursing laws, and guidelines for the Indonesian nursing diagnosis standard (SDKI). The results of this study found that the majority of nurses at the Primary Health Center had a nursing DIII education with a length of work >10 years. The nurse also said that he had never received any information about the standard of diagnosis in Indonesian nursing. Documentation of nursing diagnoses was not done because there was no clue about the documentation of nursing diagnoses in the status document (patient medical record). This condition is not in line with the expectation that an appropriate nursing diagnosis must be established and documented in an effort to prevent complications in hypertension patients. Indonesian nursing diagnosis standards (SDKI) have established various nursing diagnoses ([PPNI, 2016](#)). There are two main nursing diagnoses that are most appropriate for patients at risk of hypertension complications: Risk of Ineffective Myocardial Perfusion Code D0014 and Risk of Cerebral Perfusion Ineffective Code D.0017 which can interfere with myocardial metabolism. This nursing diagnosis is very precise because based on the results of research by [Israfil et al., \(2018\)](#) it was found that 30% of hypertension patients have complications of Coronary Artery Diseases (CAD). These diseases occur in hypertension patients due to ineffective myocardial perfusion. Nursing diagnosis of

ineffective cerebral perfusion risk is a condition where hypertension patients are at risk of decreasing blood circulation to the brain which results in a stroke complication. This is supported by the results of [Yonata & Pratama, \(2016\)](#) which explained that the relationship between the onset of hypertension and the complications of hypertension. During hypertension, a series of changes in action in the cardiovascular system are working including cerebral circulation. Changes that occur in renovation include vasculature, inflammation, oxidative stress, and dysfunction in the flexural effect contribute to stroke pathogenesis caused by hypertension.

The results of this study showed that the majority of respondents (76.2%) arranged nursing interventions to prevent complications in hypertension patients. The results of data collection found that most nurses had arranged nursing interventions by setting long-term goals and planning activities. The planned activities set out in efforts to prevent complications of hypertension were generally home visits, blood pressure, blood glucose testing, counseling, Maternal Health Units for the elderly and joint sports in prolanis (program of chronic disease management) activities. All of these intervention plans are documented in the program book for non-communicable disease management activities (PTM management) but have not been recorded in integrated patient care documentation (patient status) at the Primary Health Center.

The results of this study are in accordance with the guidelines for nursing care standards stipulated in Constitution number 38 of 2014 concerning nursing that nurses are responsible for composing nursing interventions to patients and documenting all planned intervention plans ([Undang-Undang RI, 2014](#)). Although the intervention documentation has not been included in the integrated patient status (medical record) document, but the nurse has conducted the intervention planning documentation in an effort to prevent complications of hypertension patients in a special documentation book. This condition can occur due to lack of guidance, socialization and training about the nursing process to nurses at the health center in an effort to prevent complications in hypertension patients. It is supported by the results of [Yeni's \(2014\)](#) research which found that nursing process training can improve nurses' ability to do nursing care documentation where the average nursing documentation ability before training is 4.72 increasing to 8.68 after training.

The results of this study showed that the majority of respondents (76.2%) fully implemented nursing actions in the prevention of complications in hypertension patients at Sikumana Primary Health Center in Kupang City. The results of data collection found that most nurses performed home visits, giving and monitored treatment according to medical interventions, counseling and joint exercises through prolanis at the Primary Health Center. All actions that have been taken were not documented in the patient's nursing care documentation (patient status) but were documented in a special book managing non-communicable disease programs ([Widyastuti, 2019](#)).

Nursing actions taken by nurses in an effort to prevent complications in hypertension patients have been done well. Home visits conducted in community health care program were conducted so that hypertension patients were well cared for by the family to prevent complications. It is supported by the results of [Israfil's research \(2018\)](#) which found that the role of family health care has a significant relationship with

the case of complications in hypertension patients. Giving and monitoring drug consumption is an important nursing measure in efforts to prevent complications in hypertension patients. It is consistent with the results of [Artiyaningrum's research \(2015\)](#) which found that there was a significant relationship between the consumption of anti-hypertension drugs with the incidence of uncontrolled hypertension complications. The results also found that drug consumption has a significant relationship with risk factors for complications in hypertension patients ([Israfil, 2018](#)). Gymnastic or sports with hypertension patients is an important nursing action in efforts to control hypertension and prevent complications. [Hasanudin's research results \(2018\)](#) found that there was a significant relationship between physical activities with blood pressure of hypertension sufferers. Physical activity can maintain blood pressure in the normal range. It is also supported by the results of [Hernawan's research \(2017\)](#) which stated that there was a significant effect between hypertension gymnastics on the reduction in blood pressure of hypertension patients. Decreased blood pressure will protect patients from the risk of hypertension complications.

The results of this study indicate that the majority of respondents (54.5%) conducted full community empowerment in preventing complications from hypertension patients in Sikumana Primary Health Center, Kupang City. The results of the data collection found that the type of empowerment undertaken by the Primary Health Center nurses in preventing complications of hypertension patients was family empowerment about the hypertension patient's diet, and family empowerment to monitor the treatment of hypertension patients.

The family has been known as a major factor influencing the successful treatment of hypertension patients at home. The better the family care support for hypertension patients, the more likely those hypertension patients will not experience complications. It is consistent with the results of the study which found that there was a significant relationship between the role of family health care and the incidence of complications in hypertension patients. This study was also supported by the results of [Bisnu et al., \(2017\)](#) who found that there was a significant relationship with family support with the degree of hypertension. Family empowerment to monitor the treatment of hypertension patients is an appropriate empowerment for Primary Health Center nurses. The results of [Koyongian's research \(2015\)](#) prove that there is a significant relationship between the role of the family and the compliance with hypertension treatment. Compliance with treatment increases the protection of hypertension patients from the risk of complications. Family empowerment about the diet of hypertension patients is also an appropriate community empowerment. The results of [Novian's research \(2013\)](#) found that there was a significant relationship between the role of family and dietary compliance of hypertension patients. Adherence to diet will prevent hypertension patients from the risk of complications.

The results of this study indicate that the majority of respondents (85.7%) carry out full health education in the prevention of complications in hypertension patients at the Sikumana Primary Health Center in Kupang City. The data collected found that

health education that has been done is counseling about hypertension, counseling about the dangers of hypertension complications, and counseling about how to handle hypertension complications.

The results of this study are in accordance with the results of the study of [Andini et al., \(2018\)](#) who found that the role of nurses as educators in Primary Health Center was done well. Health education about hypertension, the dangers of complications and ways to prevent complications are important promoting actions by nurses in the prevention of complications on hypertension patients. The results of this study are supported by the results of [Kurniawati's research \(2017\)](#) which proves that there is a significant influence in the provision of health education on the compliance of hypertension patients in the hypertension diet. The better the health education provided by the Primary Health Center nurse is, the better the knowledge of hypertension patients in preventing complications is. It is supported by the results of research by [Novian \(2013\)](#) who found that there was a significant relationship between patient knowledge and diet adherence to hypertension patients. The hypertension diet is one of main ways in preventing complications in hypertension patients.

The results of this study indicate that the majority of respondents (95.5%) have played a role in implementing referrals in preventing complications in hypertension patients at the Sikumana Primary Health Center in Kupang City. The data collected found that the referral was conducted to receive further treatment and follow-up by a specialist.

Referral is done by Primary Health Center nurses in collaboration with Primary Health Center doctors so that patients who are detected as having the risk of hypertension complications receive more optimal service. Referral is conducted to receive further treatment by a specialist doctor as well as appropriate supporting examinations by a specialist. The results of the study are in accordance with the results of [Alawi's research \(2017\)](#) which found that the adequacy of drugs is one of the factors in the high referral of patient cases at the Primary Health Center. The appropriate medicine can be obtained if the patient has been referred after being examined and further examined by the specialist doctor on health facilities for the intended referral.

#### **4. CONCLUSION**

Based on the results of the study above, it was concluded that the role of community nurses in preventing complications on hypertension patients at the Sikumana Primary Health Center in Kupang City was mostly well done, but it was recommended that nurses at the Primary Health Center participate actively in participating in various training and workshops for the community nursing process so that they comply with the latest regulations.

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