

# Adherence to Consuming Medication for Hypertension Patients at Primary Health Care in Medan City

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## Abstract

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**Abbreviations:** ANOVA: Analysis of variance; BRS: brain relaxation scale; CVP: central venous pressure; MAP: mean arterial pressure; GDT: goal-directed fluid therapy; PPV: pulse pressure variation; SPSS: Statistical package for social science;

**BACKGROUND:** Hypertension is one of the major health issues among senior citizens considering the increase in the population of a senior citizen's over the age of 60 in Indonesia. The use of antihypertensive drugs alone has proved to be inadequate to exhibit long-term effects of blood pressure control if it is not supported by adherence.

**AIM:** This study aims to investigate the relationship between knowledge, attitude, action, and doctor's communication to adherence of hypertensive patient in taking medication.

**METHODS:** This is an analytical study with a cross-sectional design. The population of this study consist of patients who have been diagnosed with hypertension and are consuming antihypertensive drugs. Eighty samples were randomly recruited. The research data were collected using a guided interview questionnaire and were analysed using the chi-square test.

**RESULTS:** This study shows that the patient percentages with poor knowledge are 76.3%, 82.5% with a bad attitude, 82.5% for negative action, 56.3% for lack of doctor's communication, and 58% for poor levels of adherence. Chi-square test shows a significant relationship ( $p < 0.05$ ).

**CONCLUSION:** There is a relationship between knowledge, attitude, action, and doctor's communication towards the adherence of hypertensive patient in taking medication.

## Introduction

Hypertension is one of the major health issues among the increasing number of senior citizens over the age of 60 in Indonesia. Hypertension poses a high level of cardiovascular complications among the elderly such as heart failures and strokes. However, the blood pressure level among hypertensive patients is very low (38.4%) in Indonesia [1]. Hypertension or high blood pressure is defined as an increase in systolic blood pressure greater than 140 mmHg and diastolic blood pressure over 90 mmHg on two occasions with an interval of five minutes with enough rest/quiet. Increased blood pressure that takes place

in a long time (persistent) can cause damage to the kidneys (renal failure), heart (coronary heart disease) and the brain (causing a stroke) when not detected early and given treatment [2].

According to the American Heart Association (AHA), the American population aged over 20 who suffer from hypertension has reached up to 74.5 million, but almost about 90-95% of cases are of unknown cause. Hypertension is a silent killer whereby symptoms can vary for each individual and is similar to the symptoms of other diseases [2]. The symptoms that are headaches/heaviness in the nape, vertigo, palpitations, tiredness, blurred vision, ringing in the ears (tinnitus), and epistaxis. Based on the Health Research in 2013, the prevalence of

hypertension in Indonesia obtained through questionnaires is 9.4%. This shows that in 2013, using individual analysis units, 25.8% of Indonesia's population suffers from hypertension [2].

The goal of treating hypertension is to reduce mortality and morbidity of cardiovascular diseases. The decrease in systolic pressure should be a major concern because in most cases, the diastolic pressure will be controlled simultaneously when systolic blood pressure is under control [3].

Medication adherence in hypertensive patients is important because hypertension is a disease that is not curable; therefore, it must always be controlled to avoid complications that can lead to death. Noncompliance issues are common in the treatment of a chronic disease that requires long-term treatment such as hypertension. Antihypertensive drugs that exist today have shown to control blood pressure among hypertensive patients, and also lowering the risk of developing cardiovascular complications. However, the use of antihypertensive medications alone is insufficient to produce the effect of long-term blood pressure control if not supported by compliance in the use of antihypertensive drugs [4].

Therefore, this study is conducted to investigate the relationship between knowledge, attitude, action and physician communication and the rate of adherence by patients with hypertension in the working area of Primary Health Care in Medan, Indonesia.

## Methods

### *Design and Research Samples*

This research is an analytic study with a cross-sectional design conducted in Puskesmas Medan Tuntungan. Eighty randomly selected patients who have been diagnosed with hypertension were chosen for this study. The purpose and methodology of the study were explained to respondents through a written explanation sheet for approval. This study was approved by the ethics committee Faculty of Medicine, Universitas Sumatera Utara.

### *Characteristics of Respondents*

The characteristics of the respondents were obtained through interviews using a questionnaire. Characteristics of respondents consist of age, sex, years of treatment, drugs, knowledge, attitude, action, communication between doctor and levels of medication adherence. The level of medication adherence is determined based on the number of days the respondents forgot to take the medication in the last week (Bowling  $\leq$  3 days; Less Complying > 3

days).

### *Statistical Analysis*

Characteristics of respondents are determined using descriptive statistics. The relationship between knowledge, attitude, action, communication between doctors with medication adherence levels were tested using chi-square tests of hypothesis with SPSS. A p-value of < 0.05 was used to determine the significance level in statistical analysis.

## Results

The demographic characteristics of patients with hypertension in Puskesmas Tuntungan of 80 samples with the age sample in the range of 50-59 years are as many as 48 people (60.0%). Of this sampling, 43 patients (53.8%) are female patients. Patients who have been receiving treatment for more than 5 years amounted to 43 patients (53.8%). The type of drug prescribed to 55 (68.8%) patients and the most widely used is amlodipine. Through the study, it is found that as much as 61 (76.3%) of patients have less knowledge about the importance of consuming medication, 59 (73.8%) of patients have negative attitude towards consuming medication, 66 (82.5%) of patients have less action towards consuming medication and 45 (56.3%) patients adhere to consuming medication as a result of good communication with doctors (Table 1 and 2).

**Table 1: Characteristics of Respondents**

Characteristics of Respondents	Respondents n = 80
Age, n (%)	
30-39	3 (3.8)
40-49	24 (30.0)
50-59	48 (60.0)
60-65	5 (6.3)
Gender, n (%)	
Man	37 (46.3)
woman	43 (53.8)
Years of Treatment, n (%)	
<5 years	37 (46.3)
> 5 years	43 (53.8)
Medication type, n (%)	
Amlodipine	55 (68.8)
Captopril	25 (31.3)

From Table 2, it is found that 31 (93.9%) of patients with less knowledge and about medication and Hypertension had poor adherence in consuming medication. A group of 30 (90.9%) of patients have bad attitudes towards consuming medication but dutiful in consuming medication. A total of 35 (74.4 %) of patients have a bad action towards consuming medication for hypertension. 33 (70.2%) of patients have shown to have bad/less communication with doctors, but they are dutiful in consuming medication. The results of chi-square analysis showed a p-value

of  $< 0.05$ , which shows that there is a relationship between attitude, knowledge, action, and communication with a doctor to the level of adherence in consuming medication among hypertensive patients in Tuntungan Puskesmas, Medan.

**Table 2: Knowledge about medication and Hypertension**

Variable	Respondents (n = 80)
Knowledge, n (%)	
Well	21 (26.3)
Bad	59 (82.5)
Attitude, n (%)	
Well	19 (23.8)
Bad	61 (76.3)
Action, n (%)	
Well	35 (43.8)
Bad	45 (56.3)
Communication with Doctor, n (%)	
Well	14 (17.5)
Bad	66 (82.5)
Compliance level, n (%)	
Well	33 (41.3)
Bad	47 (58.7)

About 76.3% of patients have low knowledge compared to 23.8% of patients who have a high knowledge of hypertension. Based on values obtained by the chi-square test  $p < 0.05$  ( $p = 0.002$ ), it shows that there is a significant relationship between patients' knowledge about hypertension and adherence to antihypertensive medication.

Eighty-two-point five percent 82.5% of patients have shown to have bad attitude compared to 26.3% of patients who have a good attitude towards consuming medication dutifully. Based on the statistical Chi-Square test results,  $p$ -value = 0.003 ( $p < 0.05$ ), was obtained from the 80 respondents in identifying the relationship between attitude and adherence to hypertension medication.

**Table 3: Relationship between the levels of Knowledge, Attitudes, Actions, and Communications with Doctors Against the Adherence of Consuming Medication among hypertension patients**

Factor	Dutiful n (%)	Less Dutiful n (%)	The p-value
Knowledge			
Good	17 (36.1)	2 (6.06)	0.002
Less	30 (63.8)	31 (93.9)	
Attitude			
Good	3 (9.09)	18 (38.2)	0.003
Bad	30 (90.9)	29 (61.7)	
Action			
Good	2 (6.06)	12 (25.5)	0.024
Bad	31 (93.9)	35 (74.4)	
Physician communication			
Good	14 (29.7)	21 (63.6)	0.003
Bad	33 (70.2)	12 (63.6)	

Around 82.5% of patients have shown to have bad action compared to 17.5% of patients who have shown good action. Based on the statistical test Chi-Square results obtained from the 80 respondents to determine the relationship of action with adherence of hypertension medication, a result of  $p$ -value = 0.024 ( $p < 0.05$ ) was obtained.

## Discussion

It was found that respondents with a high level of knowledge of hypertension have high adherence. The respondents with a low level of knowledge of hypertension had lower medication adherence. Another study shows that there is a relationship between knowledge and attitudes towards the patients' compliance in taking medication. The more knowledge the patient has about hypertension, the higher the level of consciousness of the patient in consuming medication. Another study has also concluded that the level of knowledge about the disease affects the patient's adherence to medication [5]. However, this is different from the study of Wahyuni et al., (2018) [6], which states that there was no association between knowledge and medication adherence, this might be because patients had received a lot of information from various sources not only from medical workers. It has also been proven that increasing patient knowledge, both about their disease and about the drugs consumed, will result in better compliance with the drug. Involving patients in their care by providing appropriate knowledge, often makes patients more concerned about their health, where this can be achieved through patient counselling and health care, as well as good interactions between doctors and patients [7].

Patients with hypertension have a poor attitude to adhere to hypertension medication. It shows that there is a relationship between attitude and medication adherence among patients with hypertension. A study has been carried out in the field that indicates a link between the levels of adherence to the attitude of patients in the treatment of chronic diseases [6]. Patients who understand about the disease will instil an attitude that will increase the level of patient compliance in taking medication [8]. Attitude is the tendency to act, perform and feel in the face, objects, ideas, situations or value. Attitude is not the behaviour, but it is a tendency to behave in certain ways to the object [9]. Attitude is a person's response to a stimulus or a closed object. It involves factors such as opinions, and emotions of either happy or sad, agree or disagree, good or bad, positive and negative aspects [10].

Similarly, a study by Wahyuni et al., (2018)[6] which states that the main factor linking patients to behavioral compliance is the patient's attitude to treatment ( $p \leq 0.05$ ). Of the 55% of patients who adhere to treatment, 67% have a positive attitude (good). Patients with good attitudes will be 3.7 times more obedient than patients with less good attitudes. There was a strong relationship between adherence to taking good medication and the respondent's attitude towards antihypertensive treatment. A good attitude towards treating hypertension will prevent misunderstandings, which can lead to non-compliance in taking medicine. People who have good attitudes

can make the right choices and appropriate lifestyle modifications that will motivate respondent compliance [11].

Based on research conducted by Ginting (2008) [12] in the district of Medan, Belawan showed that patients with hypertension have less action in adhering to hypertension medication. Logically, a patient's action will be exhibited in the form of behaviour, but this does not mean that the attitudes and behaviours have a systematic relationship. Knowledge or good attitude is not necessarily manifested good action or behaviour (overt behaviour). To turn an attitude into action, a condition or motivation is needed to enable a person to exhibit their knowledge [13].

The Chi-Square test obtained a p-value of 0.003, which means there is a significant relationship between communication and adherence. This is consistent with previous studies, such as a research in PHC Kintap, Tanah Laut, South Kalimantan, which indicated that the correlation between the provision of drug information to adherence of drug consumption and there is a relationship between compliance with systolic blood pressure ( $p = 0.003$ ,  $r = 0.398$ ) and diastolic ( $p = 0.045$ ,  $r = 0.274$ ) [14]. Another study conducted at the Gatoel Hospital also shows that communication in the form of interviewing (motivational counselling) compared leaflets improve medication adherence, shown by the increase in MMS score 8 in the test group with the interviewing method [14]. Another study conducted in Northeastern State Ethiopia at Dessie Hospital shows that there is a relationship between communication and adherence of consuming hypertension medication among patients with the p-value of 0.023 [15]. The Antoinette et al., (2009) [16] study also showed that physician communication considered by patients to be more collaborative significantly gave a better value to better medication adherence ( $p = .003$ ). Higher levels of symptoms and depression ( $p < .001$ ) were significantly associated with poorer medication adherence and doctor communication assessed by patients was less collaborative. Other studies outside of hypertension cases by Wahyuni et al., (2018)[6] regarding patient compliance with taking asthma drugs, also shows that patients who are not serious in understanding disease and doing asthma treatment are caused by the influence of less established communication between doctors and patients.

In conclusion, there is a significant relationship between knowledge, attitude, patient, and physician communication actions towards the level of medication adherence among hypertensive patients in Puskesmas Tuntungan, Medan.

We suggest:

1. It is expected that hypertension patients look for information related to the importance of compliance in taking antihypertensive medication every day because there are still many patients who

have a poor level of knowledge about consuming anti-hypertensive drugs.

2. It is expected that health officers further improve the socialisation and counselling about the importance of always adhering antihypertensive medication which may prevent complications due to uncontrolled high blood pressure.

3. It is expected that hypertensive patients always come back to the health centre or to Puskesmas to establish good communication with health care providers and adhere to medication and making sure their blood pressure is always in control.

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