



## Assessment of Hypertension Knowledge Among Pharmacists in Medan City, North Sumatera

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**Abstract:** Hypertension is the most common health problems in the community and is one of the diseases that should be given special attention by health professionals including pharmacists. The study was conducted to assess the knowledge of pharmacists against hypertension and its treatment. This study conducted a descriptive survey to assess knowledge of pharmacists on hypertension included etiology, risk factors, treatment, complications and antihypertensive medications. A total of 96 pharmacists participated in this study. The majority of respondents were female (82.3), and the average age of 36.22 years. A total of 97.9% of pharmacists knew about the definition of hypertension; 78.1% of pharmacists said that hypertension can be caused by stress and excessive fear but only 26.0% were aware that hypertension is a hereditary disease. More than 80% of pharmacists understood the hypertension risk factors such as smoking, obesity and diet in high salt and fat. Knowledge of pharmacists in the management of hypertension was still low, because there were as many as 58.3% of pharmacists believed that antihypertensive drugs are taken only while ill and 54.2% of pharmacists believed that antihypertensive drugs do not need to be taken every day. Pharmacists involved in this study had fairly good knowledge about the complications of hypertension and antihypertensive medications. Based on the results of the study, it can be concluded that the knowledge of pharmacists on hypertension still needs to be improved so that the role of pharmacists in the community as health professionals can provide good impact in improving the level of public health.

**Key Words:** Hypertension, Pharmacists Knowledge, Medan City.

### Introduction

Hypertension is a common health problem in society in the world. Hypertension affects nearly 1 billion people in the world and is rapidly growing, especially in developing countries and will continue to increase to 1.56 billion by 2025<sup>1,2</sup>. The results showed that almost 35% of the adult population in Southeast Asia suffering from hypertension and caused the death of 1.5 million people annually, and Indonesia has the highest prevalence of hypertension, which reached 41.1%<sup>3</sup>. Meanwhile, in 2013, study of Riskesdas showed that 25.8% of adult patients suffering from hypertension based on the results of measurements carried out in the health centers<sup>4</sup>.

Knowledge of hypertension is very important in the development of health policy that includes prevention, control and early diagnosis of disease, so it can reduce morbidity and mortality caused by hypertension. A survey of knowledge on hypertension indicated a decrease in awareness, treatment and control

of hypertension<sup>5</sup>. This condition can increase the morbidity and mortality of hypertension. The phenomenon of this decline can be attributed to lack of knowledge of the public and health workers against hypertension.

Health workers play an important role in the prevention, control and treatment of hypertension. Pharmacists as one of the health workers who directly interact with patients to ensure the treatment of hypertension performed by patients successful, must have good knowledge about hypertension considering the number of hypertensive patients is increasing. Therefore, it can reduce morbidity and mortality in hypertensive patients. Several studies have proven the role of pharmacists in helping and improving compliance in the use of drugs in hypertensive patients quite successfully with the increase of awareness and compliance of the patients in the treatment<sup>6,7</sup>.

The aim of this study was to assess the level of knowledge included the etiology, risk factors, treatment, complications and hypertension drugs, of the pharmacists in Medan, Indonesia.

## Method

This study was a cross-sectional observation study to assess the hypertension knowledge and its treatment among pharmacist who attended in a social service activity which held at the Faculty of Pharmacy, University of Sumatera Utara. The selection of pharmacists as a respondent in this study, due to the pharmacist is a health worker that must have good knowledge about the disease and its management to support duties of a pharmacist in pharmaceutical care. The study was done using a validated questionnaire. The Questionnaire was written in Indonesian Language. The Questions were adapted from previous studies<sup>1,5</sup>. The Questionnaire consisted of demographic data (gender, marital status and work field in Pharmacy) and 5 Parts on hypertension knowledge. Part A consisted of 6 questions related to general knowledge of hypertension, Part B consisted of 5 questions related to knowledge on the risk factors of hypertension, Part C consisted of 8 questions related to knowledge on the treatment and prevention of hypertension. Part D consisted of 5 questions related to knowledge on complication of hypertension and Part E consisted of 5 questions related to knowledge on hypertension medication. Respondents marked either yes, no or do not know. The Questionnaire was distributed to pharmacists and given about 15 minutes for them to answer. Data was analyzed using Microsoft excel and descriptive statistic was appropriately used and presented as percentages.

## Results and Discussion

A total of 96 pharmacists were involved in the study, the majority were female (82.3%), married (60.4%) and almost 80% were pharmacists who worked in health care facilities both pharmacies and hospitals, where as many as 41.7 % working as a pharmacist in a community pharmacy. The data was shown in Table 1.

**Table 1. Pharmacists Socio-demographic Characteristic**

Variable	Frequency	Percentage (%)
<b>Sex</b>		
Male	17	17.7
Female	79	82.3
<b>Marital Status</b>		
Married	58	60.4
Not Married	38	39.6
<b>Work field</b>		
Community Pharmacy	40	41.7
Hospital	27	28.1
Lecture	12	12.5
Industry	17	17.7

**Table 2. Pharmacists' General Knowledge on Hypertension**

Question	Yes	No	Do Not Know
Hypertension is a disease characterized by the increase of blood pressure above 140/90 mmHg	94 (97.9)	1 (1.0)	1 (1.0)
In patients with hypertension, diabetes and kidney failure that use antihypertensive drugs, the ideal blood pressure is <130/80 mmHg	71 (74.0)	16 (16.7)	9 (9.4)
Hypertension is a hereditary disease	25 (26.0)	69 (71.9)	2 (2.1)
Hypertension is a disease caused by food poisoning	3 (3.1)	89 (92.7)	4 (4.2)
Hypertension can be caused by several types of drugs	73 (76.0)	14 (14.6)	9 (9.4)
Hypertension caused by excessive stress and fear	75 (78.1)	17 (17.7)	4 (4.2)

Table 2 showed the general knowledge of pharmacists about hypertension. In general, pharmacists had a fairly good knowledge about hypertension. 97.9% of them were well acquainted with the definition of hypertension defined by JNC 7. More than 70% of them knew that hypertension could be caused by several types of drugs and the excessive stress and fear but only 26% of them were aware that hypertension could be caused by heredity.

Table 3 revealed that the majority of pharmacists knew the risk factors of hypertensive disease such as smoking, obesity, excessive salt intake, high fat diet, and family history. It showed that the knowledge of pharmacists towards the risk factors of hypertension was fairly good, so it will increase the awareness in the treatment of hypertension.

**Table 3. Pharmacists' knowledge on the risk factors of hypertension**

Question	Yes	No	Do Not Know
Smoking is a risk factor for hypertension	88 (91.7)	7 (7.3)	1 (1.0)
Obesity is a risk factor for hypertension	91 (94.8)	5 (5.2)	0
High-salt diet can affect hypertension	88 (91.7)	6 (6.3)	2 (2.1)
High-fat diet can affect hypertension	82 (85.4)	11 (11.5)	3 (3.1)
Have a family history of cardiovascular disease is a risk factor of hypertension	79 (82.3)	14 (14.6)	3 (3.1)

**Table 4. Pharmacists' knowledge on the treatment and prevention of hypertension**

Question	Yes	No	Do Not Know
Hypertension can be cured completely	29 (30.2)	65 (67.7)	2 (2.1)
Patients with hypertension should take antihypertensive drugs for lifetime	55 (57.3)	39 (40.6)	2 (2.1)
Patients with hypertension should consume antihypertensive medications every day	41 (42.7)	52 (54.2)	3 (3.1)
Hypertensive patients taking antihypertensive medications only when they are sick	56 (58.3)	37 (38.5)	3 (3.1)
Consuming fruits and vegetables can help prevent hypertension	88 (91.7)	5 (5.2)	3 (3.1)
Changing lifestyle and maintaining a healthy weight will help prevent hypertension	95 (99.0)	1 (1.0)	0
If by taking antihypertensive medications successfully control the blood pressure, it is not necessary to change the life style	6 (6.3)	89 (92.7)	1 (1.0)
Increased blood pressure is the aging process; therefore the antihypertensive drugs are not needed.	6 (6.3)	88 (91.7)	2 (2.1)

Pharmacists as one of the health workers should have good knowledge in the management and prevention of hypertension in the community. Based on this research, the knowledge of pharmacists in Medan was still unsatisfactory. It was shown by less than 60% of them understood that the patient must take medication every day and taking antihypertensive drug for life. More than 50% of them said that the antihypertensive drugs were taken only when sick. It showed the lack of knowledge of pharmacists to the treatment of hypertension. This poorly and unsatisfying knowledge can harm patients with hypertension. The complete data was shown in Table 4. It was in contrast with pharmacist's knowledge for some action in the prevention of hypertension, over 90% of them realized that eating fruits and vegetables and change into a healthier lifestyle can prevent an increase in blood pressure.

Table 5 showed that pharmacists had fairly good knowledge about the complications that can be caused by hypertension. Almost all pharmacists knew that hypertension can lead to complications of heart attack and stroke. But 13.5% were not aware that hypertension can lead to kidney disorders.

**Table 5. Pharmacists' knowledge on complication of hypertension disease**

Question	Yes	No	Do Not Know
Hypertension can lead to death	90 (93.8)	5 (5.2)	1 (1.0)
Hypertension can lead to heart disease such as heart attack	96 (100.0)	0	0
Hypertension can lead to stroke	94 (97.9)	2 (2.1)	0
Hypertension can lead to kidney failure	83 (86.5)	12 (13.5)	1 (1.0)
Hypertension can lead to impaired vision	76 (79.2)	16 (16.7)	4 (4.2)

**Table 6. Pharmacists' knowledge on hypertension medication**

Question	Yes	No	Do Not Know
One of the drugs used in the treatment of hypertension is diuretic drug class.	94 (97.9)	1 (1.0)	1 (1.0)
Spirolactone is a potassium-sparing diuretic	75 (78.1)	10 (10.4)	11 (11.5)
Antihypertensive drug class of beta-blocker is not recommended for patients with hypertension who suffer from asthma.	69 (71.9)	13 (13.5)	14 (14.6)
ACE inhibitors have side effects of cough	72 (75.0)	13 (13.5)	11 (11.5)
Nifedipine is an antihypertensive drug class of Calcium Channel Blocker	74 (77.1)	10 (10.4)	12 (12.5)

Table 6 showed that more than 70% of pharmacists knew some types of antihypertensive medications such as diuretics, beta-blockers and Calcium Channel Blockers. Most of them knew that the side effect of Captopril is coughing. Meanwhile, 13.5% of them were not realized that antihypertensive drug class of beta-blockers is not recommended for patients with hypertension who suffer from asthma.

## Conclusion

It can be concluded that the knowledge of pharmacists on hypertension still needs to be improved so that the role of pharmacists in the community as health professionals can provide good impact in improving the level of public health.

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