

# Exploring the primary health facility availability, health control, drug consumption, and healthy living behavior among patients with hypertension

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## Abstract

Hypertension has been identified as a causative factor for cardiovascular disease, a leading global cause of death. The accessibility of health services plays a pivotal role in shaping community awareness and engagement in hypertension management. This research aimed to explore the availability of primary health facilities, health control practices, drug consumption, and healthy living behaviors among individuals with hypertension. Utilizing a correlation study with a cross-sectional design, the sample comprised 130 hypertensive individuals selected through purposive sampling. Statistical analysis used the Spearman rho correlation test. The findings revealed that significant correlations between primary health facility availability and health control behavior ( $\alpha=0.000$ ,  $r=0.310$ ), antihypertensive drug consumption behavior ( $\alpha=0.000$ ,  $r=0.461$ ), and healthy lifestyle behavior ( $\alpha=0.000$ ,  $r=0.478$ ) among hypertensive patients. These results underscore the relationship between the availability of primary health facilities and the behavior of hypertensive patients in terms of health control, drug consumption, and healthy lifestyle choices within the community. While the full implementation of these behaviors among hypertensive patients may not be optimal, the observed good availability of primary health facilities serves as an initial step to promote improved behaviors in the management and prevention of hypertension complications within the community.

## Introduction

Hypertension is a chronic non-communicable disease diagnosed based on high blood pressure examination results reaching  $\geq 140/90$  mmHg or higher. Hypertension sufferers may not feel any symptoms, so the only way to find out if there is an increase in blood pressure is to carry out routine blood pressure checks.<sup>1-3</sup> Hypertension that is not adequately controlled will damage blood vessel walls, causing thickening and stiffness of blood vessel walls, accumulation of fatty atherosclerotic plaque, and ultimately causing various complications such as coronary heart disease, angina pectoris, myocardial infarction, heart failure, retinopathy, and kidney failure.<sup>4-6</sup> Hypertension has also become a causative factor for cardiovascular disease, one of the causes of death globally.<sup>7-9</sup>

One of the global targets for non-communicable diseases is reducing hypertension prevalence by 33% between 2010 and 2030.<sup>1</sup> It is estimated that 1.28 billion adults aged 30-79 years worldwide suffer from hypertension, and around 46% of people with hypertension are not aware that they have hypertension. Less

than half, or 42%, of hypertension sufferers have been diagnosed and have received treatment. However, only 1 in 5 people who suffer from hypertension can control their blood pressure well.<sup>1</sup> In Indonesia, the prevalence of hypertension continues to increase.<sup>10</sup> The five-year national health research of the Ministry of Health of the Republic of Indonesia in 2018 found that hypertension in Indonesia had increased from 25.8% in 2013 to 34.1% in 2018. The prevalence of stroke had increased from 7% in 2013 to 10.9% in 2018, and the prevalence of heart disease reached 1.5% in 2018.<sup>11</sup>

Health checks and blood pressure measurements, taking anti-hypertensive medication, and changing to a healthier lifestyle are essential efforts that must be made to control blood pressure within normal limits and reduce the risk of complications. The level of education, knowledge, and access to health services can influence community awareness and participation in controlling hypertension.<sup>12-14</sup> Health facilities that do not have adequate equipment will affect the success of treating hypertension in the community.<sup>15</sup> Health Service Facilities are tools and/or places used to provide health service efforts, whether promotive, preventive, curative, or rehabilitative to patients.<sup>16</sup> The main challenges in managing hypertension in primary health facilities are shortages of equipment and personnel, drug stockouts, and poor patient attendance at health care visits.<sup>17</sup>

Primary healthcare facilities in Indonesia known as community health centers are a type of first-level health service that is easily accessible to the community, especially in areas with a gap in health development background with larger urban areas.<sup>18</sup> The availability of primary healthcare facilities or Community Health Centers is the first door to discovering various cases of non-communicable diseases in the community, including hypertension.<sup>19</sup> Accessibility to primary health services is an essential factor influencing the success of hypertension management in the community.<sup>18</sup> Inadequate availability of primary healthcare facilities is the cause of the low level of handling of hypertension cases in the community at various stages, namely screening, diagnosis, treatment, and follow-up efforts to treat hypertensive patients.<sup>19</sup> The research aimed to explore the primary health facility availability, health control, drug consumption, and healthy living behavior among patients with hypertension.

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## Materials and Methods

### Research design

This research was a correlation study with a cross-sectional design. A cross-sectional design was adopted to examine correlations between different elements without manipulating variables over time.

### Population, sample, sampling

The population in this study were hypertensive patients in the community. The sample size was 130 people taken using the purposive sampling technique. Hypertensive patients who have suffered from hypertension for > 6 months, have not experienced complications, can read and write, do not experience mental disorders, and are willing to be respondents are the inclusion criteria for this study. This research was carried out in the work area of 11 Kupang City Health Centers, East Nusa Tenggara province, in the eastern part of Indonesia, from September to November 2022.

### Variable

The independent variable of this research was the availability of primary health facilities, and the dependent variables were health control behavior, drug consumption behavior, and healthy lifestyle behavior in hypertension patients

### Instrument

Data collection was carried out using a questionnaire that had been developed by the research team from several sources, and validity and reliability tests had been carried out according to research needs.<sup>20,21</sup> The health facilities availability questionnaire has three answer choices, namely “Yes”, “No” and “Don’t Know”. Answers are accumulated and a presentation is made in the categories of availability of health facilities, namely good 76-100%, enough 60-75%, and less <60%. The questionnaire on health control behavior, consumption of antihypertensive drugs, and healthy lifestyle has four answer choices, namely “always”, “sometimes”, “rarely”, and “never”. Answers are accumulated and made into a presentation with categories of good behavior 76-100%, enough 60-75%, and less <60%. The questionnaire has been tested for validity and reliability with the results of the validity test being declared valid if the r count is more The value of the r table is > 0.373, and is declared reliable if the Cronbach’s Alpha value is > 0.388.<sup>22</sup> The results of the validity test which have been confirmed are that the calculated r of the questionnaire on the availability of health facilities is  $r = 0.525-0.930$ , health control behavior  $r = 0.812-0.899$ , drug consumption  $r = 0.728-0.914$ , and healthy lifestyle  $r = 0.449-0.763$ . Meanwhile, the results of the reliability test showed that the Cronbach’s Alpha value of the health facility availability questionnaire was 0.870, health control behavior 0.872, drug consumption 0.884, and healthy lifestyle 0.600.

### Data collection process

Data collection was carried out by identifying respondents who met the inclusion criteria, respondents were explained the purpose, benefits, and procedures for collecting research data, and respondents were asked for approval and signed informed consent. Respondents are then given a questionnaire to fill out, filling in the questionnaire is done directly accompanied by a researcher or accompanying enumerator to avoid misunderstandings in filling out the questionnaire. The completed questionnaires were collected and then tabulated for analysis.

### Data analysis

The research data were explained statistically using the Spearman Rho Correlation Test with the help of SPSS 20 software, with the significance level used being  $\alpha = 0.01$ .

### Ethical clearance

This research has received ethical permission from the Health Research Ethics Committee, Faculty of Nursing, Airlangga University with Ethical Approval number 2640-KEPK.

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## Results

The majority of respondents were aged 55-65 years (43.1), female (71.5%), had secondary education (44.6%), suffered from hypertension for  $\leq 5$  years (39.2%), and suffered from hypertension grade 1 (51.5%) (Table 1).

According to the majority of patients, primary health facilities were considered good in terms of availability (87.7%). However, only 15.4% of hypertensive patients exhibited good behavior in

terms of health control, while a larger proportion, 46.2%, demonstrated positive behavior in taking antihypertensive medication. In addition, the majority of hypertensive patients showed good behavior in adopting a healthy lifestyle, accounting for 43.1% (Table 2).

Based on the Spearman rho statistical test, the results obtained were the availability of primary health care facilities with the health control behavior of hypertensive patients ( $p$ -values=0.000,  $r$ =0.310), with the behavior of consuming antihypertensive drugs ( $p$ -values=0.000,  $r$ =0.461) and with Healthy Lifestyle Behavior ( $p$ -values=0.000,  $r$ =0.478). These results indicate a relationship between the availability of primary healthcare facilities and health control behavior, antihypertensive drug consumption behavior, and healthy lifestyle behavior in hypertensive patients. The behavior that has the most vital relationship to the availability of primary healthcare facilities is healthy lifestyle behavior (Table 3).

## Discussion

This study found that the availability of primary health facilities in the community has a significant relationship with health control behavior, antihypertensive drug consumption behavior, and healthy lifestyle behavior in hypertensive patients. Although the availability of primary health facilities in the local area was mostly reported to be good, this study found that the expected good behavior of hypertensive patients was still not achieved optimally. The availability of primary health facilities in the community is an essential and effective strategy to handle and reduce the burden of non-communicable diseases, including hypertension and the danger of its complications.<sup>23</sup>

Primary health facilities are the main supporting facilities and health services providers to hypertensive patients in the community to get support in carrying out and improving healthy living behavior to control hypertension and prevent complications. The availability of good primary health facilities will produce good capacity in integrating strategies for preventing and controlling non-communicable diseases in the community, including hypertension.<sup>24</sup> In line with this study's results, primary health facilities' availability is said to be good if it has the availability of health human resources, medical equipment, infrastructure, medicines, a referral system, and community outreach.<sup>24</sup>

Behavior is a factor that can be modified and is expected to be implemented well by hypertensive patients to control and prevent the worsening of hypertension. The desired behavior in hypertensive patients is health control behavior, consumption of antihypertensive drugs, and healthy lifestyle behavior. Hypertensive patients with poor behavior in controlling high blood pressure have a 17.23

**Table 1.** Characteristics of respondents (n=130).

Characteristics of respondents	n	%
Age		
35-44 years	14	10.8
45-54 years	31	23.8
55-65 years	56	43.1
66-74 years	23	17.7
75-90 years	6	4.6
Gender		
Male	37	28.5
Female	93	71.5
Level of education		
Primary education	44	33.8
Secondary education	58	44.6
Higher education	28	21.5
Long suffered from hypertension		
≤ 5 years	51	39.2
6-10 years	23	17.7
≥ 10 years	22	16.9
Forget	34	26.2
Classification of hypertension		
Grade I hypertension	67	51.5
Grade II hypertension	15	11.5
Grade III hypertension	8	6.2
Isolated hypertension	40	30.8

**Table 2.** Description of primary health facilities availability, health control behavior, drug consumption behavior, and healthy lifestyle behavior in hypertensive patients (n=130).

Variable	n	%
Availability of primary health facilities		
Good	114	87.7
Enough	16	12.3
Less	0	0
Patient behavior for health control		
Good	20	15.4
Enough	35	26.9
Less	75	57.7
Patient behavior regarding consumption of antihypertensive drugs		
Good	60	46.2
Enough	30	23.1
Less	40	30.8
Patient behavior for a healthy lifestyle		
Good	56	43.1
Enough	55	42.3
Less	19	14.6

**Table 3.** Relationship between the availability of primary health facilities and health control, drug consumption, and healthy living behavior among patients with hypertension (n=130).

Availability of primary healthcare facilities	Health control			Drug consumption			Healthy living behavior		
	Good	Enough	Less	Good	Enough	Less	Good	Enough	Less
Good	20	35	59	60	29	25	56	50	8
Enough	0	0	16	0	1	15	0	5	11
Less	0	0	0	0	0	0	0	0	0
p	0.0001			0.0001			0.0001		
r	0.310			0.461			0.478		

\*Correlation is significant at the 0.01.

times greater risk of experiencing complications than those who have good behavior in controlling hypertension.<sup>25</sup> Patient beliefs about hypertension, knowledge about the dangers of hypertension, and its management have been reported to influence patient compliance in implementing healthy behavior or lifestyle.<sup>26</sup> Family support also correlates with hypertensive patients' adherence to antihypertensive drugs, according to recommendations from health workers.<sup>27</sup> Self-efficacy, individual coping, and social support from family and health workers are also related to the behavior of hypertensive patients in controlling blood pressure and preventing cardiovascular complications.<sup>28</sup> Apart from that, hypertensive patients' self-awareness of the dangers of hypertension complications such as stroke can also influence the behavior of hypertensive patients to better prevent hypertension complications.<sup>29</sup>

Various efforts by good primary health facilities to improve health control behavior, consumption of antihypertensive drugs, and healthy lifestyles must continue to be carried out, such as training health workers on preventing and controlling hypertension as part of their daily practice in the community.<sup>24</sup> It must be realized that the patient's level of awareness influences the behavior of hypertensive patients in utilizing primary health facilities, the perceived level of severity, the perceived effectiveness of therapy, the side effects of the treatment received, and the patient's fear of life-long dependence on the hypertension medication given.<sup>30</sup> Health workers working in primary health facilities must move to support compliance in managing hypertensive patients by maintaining persuasive communication with hypertensive patients, providing sufficient time for patients to ask questions and receive recommendations, and taking a hypertension management approach that is responsive to individual needs according to ethnicity. Culture and community that provide benefits.<sup>31</sup>

Apart from that, it is also essential to increase the commitment of the government to plan a regular hypertension skinning program in the community, provide adequate medicines, provide modern equipment, and empower health workers who work in primary health facilities to research various factors that influence hypertension patient compliance in following the treatment program provided.<sup>32</sup> Another strategy that can be implemented is a task division model, which involves transferring specific tasks from doctors to nurses and local community health workers, which will be very important to improve primary care health services in controlling hypertension and preventing cardiovascular disease in hypertensive patients in the community.<sup>33</sup> Future work should focus on developing and validating performance indicators to facilitate an orderly and systematic review of data on the management of hypertensive patients in the community to improve outcomes and more targeted follow-up planning.<sup>17</sup>

The results of this study provide evidence to the government and managers of primary health facilities that the availability of primary health facilities is related to the behavior of hypertensive patients in controlling their health, consuming anti-hypertension drugs, and implementing a healthy lifestyle. The role of primary health facilities must continue to be improved to produce better behavior of hypertensive patients in the community to control and prevent complications of hypertension. This research has limitations in only looking at the correlation between the availability of primary healthcare facilities and the behavior of hypertensive patients in the community. Research on other factors that influence the behavior of hypertensive patients in the community needs to be carried out further.

## Conclusions

The availability of primary health facilities in the community was good, but their use by hypertensive patients was still not optimal. The availability of primary health facilities in the community has a significant relationship with the health control behavior, drug consumption, and healthy living behavior among patients with hypertension. We recommend to the government and health workers in primary health facilities to continue to be committed to providing various health programs for hypertension patients. Health promotion and health prevention are the main work programs of primary health facilities which must continue to be improved.

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