

## Early Detection of Hypertension in Village Communities Through Routine Examinations and Health Counseling

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frianpusung945@gmail.com**Abstract:**

Hypertension is a major risk factor for cardiovascular disease and is often undetected because it frequently presents without symptoms. Community-based screening and health education through integrated health service posts play an important role in the early detection and prevention of hypertension-related complications. This study aimed to assess blood pressure status and evaluate early hypertension detection practices among community members. A cross-sectional study was conducted involving 58 participants selected using a total sampling technique. Blood pressure was measured with a sphygmomanometer, and early detection practices were assessed using a structured questionnaire. Data were analyzed using univariate analysis to describe the distribution of blood pressure categories and levels of early detection practices. The results showed that 37.9% of respondents were classified as having Stage I hypertension, 27.6% had Stage II hypertension, and 34.5% had normal blood pressure. Regarding early detection practices, 77.6% of respondents demonstrated good practices. Despite generally good early detection practices, a considerable proportion of community members had hypertension. Strengthening routine blood pressure screening and providing continuous health education at the Integrated Health Service posts level are essential to improve hypertension control and prevent complications.

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### INTRODUCTION

Hypertension remains a major global public health problem and one of the leading risk factors for cardiovascular and cerebrovascular diseases (Goorani et al., 2024). Elevated blood pressure significantly contributes to the global burden of morbidity and mortality, particularly through conditions such as stroke, coronary heart disease, and chronic kidney disease (He et al., 2025). When hypertension is not properly controlled, it can lead to severe complications, including heart failure, renal impairment, and premature death (Masenga & Kirabo, 2023). The increasing prevalence of hypertension has become a major concern for health systems worldwide, particularly in low- and middle-income countries where preventive services and early detection programs are often limited (Stein et al., 2024).

Despite the availability of effective treatment and prevention strategies, hypertension is frequently referred to as a silent disease because many individuals remain asymptomatic for long periods (Youssef et al., 2022). As a result, a large proportion of people with hypertension are unaware of their condition until complications occur (Inoue, 2025). This situation highlights the importance of early identification and regular monitoring of blood pressure in the community (Aggarwal & Pandey, 2023). Strengthening early detection strategies is therefore essential to reduce

the long-term health and economic burden associated with uncontrolled hypertension (Mancia et al., 2023).

Preventive health behaviors play a crucial role in reducing the risk of hypertension and other non-communicable diseases (Nursiswati et al., 2025). These behaviors include maintaining regular health check-ups, quitting smoking, engaging in adequate physical activity, consuming a balanced, healthy diet, and managing psychological stress (Ojangba et al., 2023). In addition, early detection of non-communicable diseases such as hypertension, diabetes mellitus, and hypercholesterolemia allows individuals to receive timely treatment and lifestyle interventions that can prevent disease progression and complications (Ibraheem et al., 2025).

Early detection refers to identifying elevated blood pressure in apparently healthy individuals through routine screening (Facciola et al., 2022). Through regular blood pressure measurements, health workers can identify individuals at risk and provide appropriate counseling or referral for further management (Green et al., 2022). However, many cases of hypertension remain undiagnosed due to limited awareness, inadequate screening coverage, and low participation in routine health examinations (Gelassa et al., 2022). Community-based health services, therefore, play a critical role in improving access to preventive care and increasing awareness about hypertension (Mengesha et al., 2024).

One community-based platform that supports early detection is the Integrated Health Post, which is widely implemented at the village level (Bera et al., 2023). The Integrated Health Post provides accessible and community-oriented health services, including routine health examinations and health counseling. These activities can facilitate early identification of hypertension and promote healthy behaviors among community members (Bush et al., 2023). Therefore, this study aims to assess blood pressure status and describe the early detection of hypertension through routine examinations and health counseling at the Prima Integrated Health Post.

## METHOD

### Research Design

This study employed a descriptive cross-sectional design to assess blood pressure status and early detection practices of hypertension in the community. The research was conducted at the Prima Integrated Health Post in Paret Timur Village, within the Kotabunan Community Health Center's working area, in October 2025. The cross-sectional approach allowed the researchers to observe and describe the distribution of blood pressure levels and early detection practices among community members at a single point in time.

### Participants

The study population consisted of all community members who attended Integrated health service posts Prima during the study period. A total sampling technique was applied, meaning that all eligible participants were included in the study. In total, 58 respondents participated. The inclusion criteria were adults aged 18 years or older who attended the Integrated Health Service posts during the data collection period and agreed to participate in the study. Individuals who were pregnant, experiencing acute illness at the time of measurement, or who declined to participate were excluded from the study.

### Data Collection

Blood pressure was measured with a calibrated digital sphygmomanometer. The measurement procedure followed a standardized protocol to ensure accuracy. Participants were

asked to sit comfortably, with their back supported, feet flat on the floor, and arms at heart level, after resting for at least 5 minutes. Two blood pressure measurements were taken at 1- to 2-minute intervals, and the average was recorded. Blood pressure classification was determined based on standard hypertension staging guidelines. In addition, hypertension was assessed using a structured questionnaire. The questionnaire included items on routine blood pressure monitoring, awareness of hypertension risk factors, and prior exposure to health education or counseling. Responses were scored and categorized into levels of early detection practices, namely good or adequate, according to predefined criteria.

### Data Analysis

Data were analyzed using univariate descriptive analysis to summarize participant characteristics and the main study variables. These variables included age, sex, education level, blood pressure category, and early detection status. The results were presented as frequencies and percentages to describe the distribution of each variable. All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS).

### Ethical Clearance

This study received ethical approval from the Health Research Ethics Committee of the Institute of Technology, Science and Health, Dr. Soepraoen Hospital (Approval No. 045/KEPK/2025). Prior to participation, all respondents were provided with information about the study's purpose and procedures and asked to provide written informed consent. The confidentiality and anonymity of participant data were strictly maintained throughout the research process.

## RESULT

### Respondent Characteristics

Table 1. Distribution of Respondents Based on Age, Gender, and Education

Characteristics	Frequency (f)	Percentage (%)
<b>Age</b>		
25-35 Years	13	22.4
36-45 Years	10	17.2
46-55 Years	14	24.1
56-65 Years	13	22.4
> 65 Years	8	13.8
<b>Gender</b>		
Man	17	29.3
Woman	41	70.7
<b>Education</b>		
Elementary School	10	17.2
Junior High School	16	27.6
Senior High School	27	46.6
Higher education	5	8.6

Based on the table above, most of the community at Integrated health service posts Prima, Paret Timur Village, Kotabunan Health Center Working Area are aged 46-55 years, namely 14 respondents (24.1%). Most of the community at the Prima Integrated Health Service posts in Paret Timur Village, Kotabunan Health Center Working Area, are female, namely 41 respondents (70.7%). Most of the community's education at Integrated health service posts in Prima, Paret Timur Village,

and the Kotabunan Health Center Working Area is at the high school level, with 27 respondents (46.6%).

### Distribution of Respondents According to Blood Pressure

Table 2. Distribution of Respondents Based on Blood Pressure of the Community at the Prima Integrated Health Post in Paret Timur Village, Kotabunan Community Health Center Work Area

Blood pressure	Frequency	Percentage
Normal	20	34.5
Stage I Hypertension	22	37.9
Stage II Hypertension	16	27.6
Total	58	100.0

Based on the table above, most of the community at Integrated Health Service posts Prima, Paret Timur Village, and Kotabunan Health Center Working Area had stage I hypertension, namely 22 respondents (37.9%).

### Distribution of Respondents for Early Detection of Hypertension

Table 3. Distribution of Respondents Based on Early Detection of Hypertension at the Prima Integrated Health Service Posts in Paret Timur Village, Kotabunan Community Health Center Working Area

Early Detection of Hypertension	Frequency	Percentage
Good	45	77.6
Enough	13	22.4
Total	58	100.0

Based on the table above, most early hypertension detection at the Integrated health service posts Prima, Paret Timur Village, and Kotabunan Health Center Working Area was good, namely 45 respondents (77.6%).

## DISCUSSION

This study identified a relatively high proportion of respondents with hypertension, with most participants classified as having Stage I hypertension. The high prevalence observed in this study may be associated with the age distribution of individuals attending the Integrated Health Service Post, as well as lifestyle-related risk factors such as high salt consumption, low levels of physical activity, and limited routine blood pressure monitoring prior to the screening activity (Wang et al., 2022). These factors can contribute to the gradual development of elevated blood pressure, particularly among adults and older community members.

In many community settings, hypertension often remains undiagnosed due to limited access to continuous preventive care and routine health examinations. Because hypertension is largely asymptomatic, individuals frequently do not seek medical attention until complications arise. This condition may explain why several respondents were already categorized in the hypertension stage without previous detection. These findings highlight the importance of regular blood pressure screening and lifestyle-based interventions, including reducing salt intake, increasing physical activity, and maintaining a healthy body weight (Elmakki, 2025). Community-based Integrated Health Service Post programs have a strategic role in reaching community members and facilitating early identification, health education, and referral to prevent cardiovascular complications.

Although a relatively high prevalence of hypertension was identified in this study, most respondents demonstrated good early detection practices. This was reflected in routine blood pressure checks and in active participation in community-level health education activities. These findings suggest that community members have relatively adequate awareness and exposure to health information regarding hypertension and other non-communicable diseases. Health education activities combined with routine blood pressure screening can effectively increase public awareness and encourage individuals to monitor their health status regularly (McGuire et al., 2022).

However, the coexistence of good early detection practices with a high prevalence of hypertension indicates a potential gap between awareness and effective disease control. Several factors may contribute to this discrepancy, including limited follow-up care, inadequate access to antihypertensive treatment, low adherence to recommended lifestyle modifications, and insufficient referral mechanisms to primary health care services. In many cases, screening activities reveal previously undiagnosed hypertension, particularly among individuals who do not routinely access health services. Therefore, strengthening the linkage between community screening programs and primary health care services is essential to ensure that individuals with elevated blood pressure receive appropriate counseling, continuous monitoring, and timely treatment (Ahmad, 2025).

This study has several limitations that should be considered when interpreting the findings. The cross-sectional design limits the ability to establish causal relationships between variables. In addition, the relatively small sample size and the single-site setting may restrict the generalizability of the results to other populations. Blood pressure measurements were conducted at a single point in time, which may not fully reflect sustained hypertension, and early detection behaviors were assessed using self-reported data, which may introduce reporting bias. Despite these limitations, the study provides valuable implications for public health practice. Strengthening regular community-based screening, continuous health education, and effective follow-up systems at the Integrated Health Service Post and community health center levels is essential to improve early detection and bridge the gap between community awareness and effective hypertension control.

## CONCLUSION

This study revealed a relatively high prevalence of Stage I hypertension among community members attending the Prima Integrated Health Service Post in Paret Timur Village. Although early detection practices were generally good, a considerable number of individuals were still found to have elevated blood pressure, indicating a gap between awareness and effective hypertension control. These findings suggest that while community members may participate in screening and health education activities, additional efforts are needed to translate awareness into sustained preventive and management behaviors. Therefore, strengthening routine blood pressure screening, improving referral and follow-up mechanisms with primary health care services, and enhancing structured health education at the Integrated Health Service Post level are essential to improve hypertension management and reduce the risk of hypertension-related complications in the community.

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