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CURRENT STATUS OF HYPERTENSION MANAGEMENT AND ASSOCIATED FACTORS AT COMMUNE HEALTH STATIONS IN VINH YEN CITY, VINH PHUC PROVINCE, 2024

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ABSTRACT

Hypertension is a significant cause of cardiovascular disease, yet it is preventable and manageable at the community level. This cross-sectional study was conducted to assess the current status of Hypertension management at nine commune health stations (CHSs) in Vinh Yen City, Vinh Phuc Province, from August 2024 to April 2025. Data were collected via self-administered questionnaires and health reports, then analyzed using SPSS 25.

All CHSs provided Hypertension screening, but only 44.4% offered ongoing treatment management. On average, each CHS had 3.7 staff involved; 55.6% had sufficient blood pressure monitors; 33.3% had adequate anthropometric tools; and 77.8% had clinical guidelines available. Regarding medications, 33.3% of CHSs stocked two drug classes, and 22.2% had all three essential antihypertensive drug groups. In 2024, 81.8% of adults aged ≥40 were screened, and 10.2% were newly diagnosed. In four communes, 29.2% of patients were under treatment, with 46.6% achieving target blood pressure. Factors significantly associated with blood pressure control included regular follow-up over three months (p=0.033), appropriate dose adjustment (p=0.027), and lifestyle behavior change (p=0.010).

Keywords: Screening and detecting hypertension; outpatient management; treatment targets; essential drugs.

1. INTRODUCTION

Hypertension is a leading cause of cardiovascular disease, which contributes to the burden of the disease and accounts for 31% of the mortality rate [1]. National data show that 56.9% of individuals with Hypertension remain undiagnosed, while 24.9% are under treatment and 9.7% achieve target blood pressure [2]. In Vinh Phuc Province, the overall detection rate of Hypertension exceeds 60%, with 43.8% of patients being managed at healthcare facilities. However, commune health stations (CHSs) account for only 2.7% of hypertension detection and manage just 3.6% of hypertensive patients in the province [3]. Vinh Yen City, comprising nine administrative communes/wards, covers an area of 50.39 km^2 and has a population of 123,353. In recent years, local authorities and the health sector have invested in infrastructure, human resources, and medical equipment to enhance preventive services and healthcare delivery for the community. Nevertheless, significant challenges remain in achieving effective hypertension management in Vinh Yen City, particularly at the primary healthcare level, to reduce complications and premature mortality [4]. This study was conducted in Vinh Yen City to describe the current situation and identify factors influencing the screening, diagnosis, and management of hypertension at the commune health station, providing evidence for the development of intervention programs aimed at improving the detection and management of hypertension.

2. METHOD

2.1 Research objects

Commune health stations, including human resources, performance outcomes, essential equipment, and medications for the management and treatment of hypertension.

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2.2 Duration and place of the research

From August 2024 to April 2025 in Vinh Yen City, Vinh Phuc Province.

2.3 Research design

A cross-sectional descriptive study using a mixed-methods approach, combining quantitative and qualitative data collection.

2.4 Sample size

All nine commune/ward health stations in Vinh Yen City.

2.5 Data collection methods and tools

A structured quantitative questionnaire was used, along with guidelines for information collection provided to CHSs and participating units. The survey forms were distributed to CHSs by the district health center and collected via email.

2.6 Study variables

Proportion of individuals aged ≥ 40 who were screened Hypertension in 2024; Proportion of CHSs implementing different forms of hypertension screening; Proportion of Hypertensive patients detected and managed within the study area; Proportion of CHSs implementing hypertensive outpatient management and treatment; Number of commune health workers trained in hypertension detection and management; Proportion of CHSs equipped with essential devices and medication for Hypertension treatment.

2.7 Data management and analysis

Data were cleaned and entered using Epidata 3.1. Statistical analysis was performed using SPSS 25 based on the study indicators, and the results were presented in tables and charts.

2.8 Research ethics

There were no potential risks, and participation by all units was voluntary. The findings are intended to contribute to improving the operational model and the quality of screening, detection, and management of hypertension at commune health stations.

3. RESULTS

3.1. Organization and implementation of hypertension screening at commune health stations in 2024

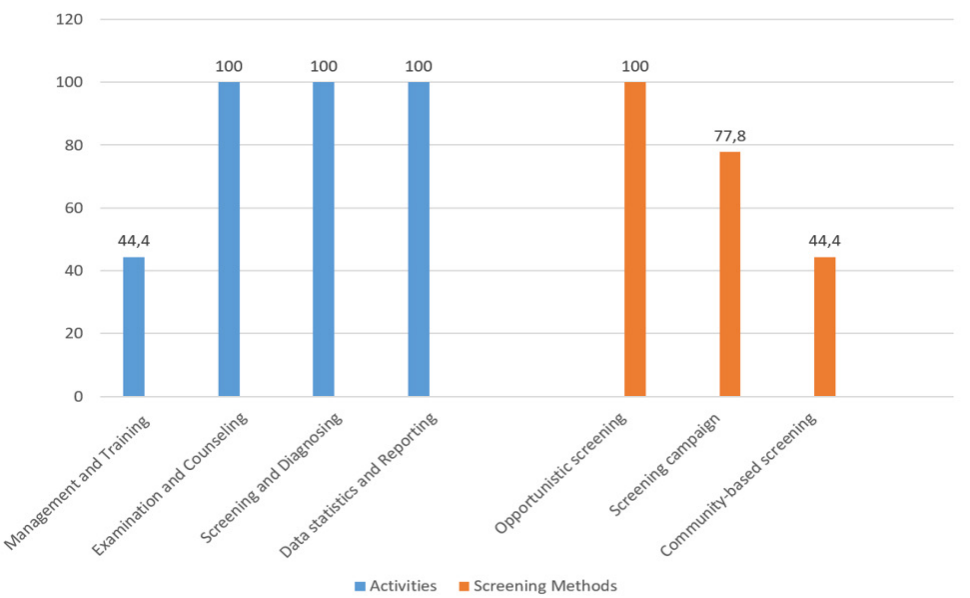

Figure 1. The proportion of CHSs implementing hypertension screening and management activities, Vinh Yen City, 2024

Figure 1 shows that 100% of commune health stations (CHSs) conducted hypertension screening, diagnostic examinations, counseling, and reporting. However, only 44.4% of CHSs implemented management and treatment of hypertension. All CHSs (100%) carried out opportunistic screening for individuals visiting the CHS for medical care; 77.8% organized screening campaigns in 2024, and 44.4% conducted regular community-based screening activities.

Table 1. Current status of human resources and equipment

The average number of health workers	Participating Staff (Mean±SD)	Trained Staff (Mean±SD)
Overall	3.7 (±3.0)	3.6 (±2.4)
Doctor	1.0 (±0.3)	1.0 (±0.3)
Physician	0.8 (±0,.7)	0.8 (±0.7)
Nurse	2.3 (±1.8)	2.0 (±1.7)

The average number of health workers	Participating Staff (Mean±SD)	Trained Staff (Mean±SD)
Others	1.6 (±0.8)	1.2 (±0.6)
Commune Health Station's equipment and documents	**The number of Commune Health Stations (%)**	
Sufficient blood pressure monitors	9 (100)	
Sufficient stethoscope	9 (100)	
Sufficient blood pressure monitors for community screening	5 (55.6)	
Adequate anthropometric measuring instruments."	3 (33.3)	
Availability of professional clinical guidelines and documents."	7 (77.8)	

The table shows that, on average, 3.7 (±3.0) staff members from each commune health station (CHS) participated, of whom 3.6 (±2.4) had been trained in hypertension screening and management. On average, each CHS had one doctor, 0.8 physicians, and two nurses. All CHSs (100%) were equipped with blood pressure monitors and stethoscopes; however, only 55.6% had blood pressure monitors available for community screening. Anthropometric measuring instruments were available in 33.3% of CHSs, and 77.8% had access to hypertension management guidelines.

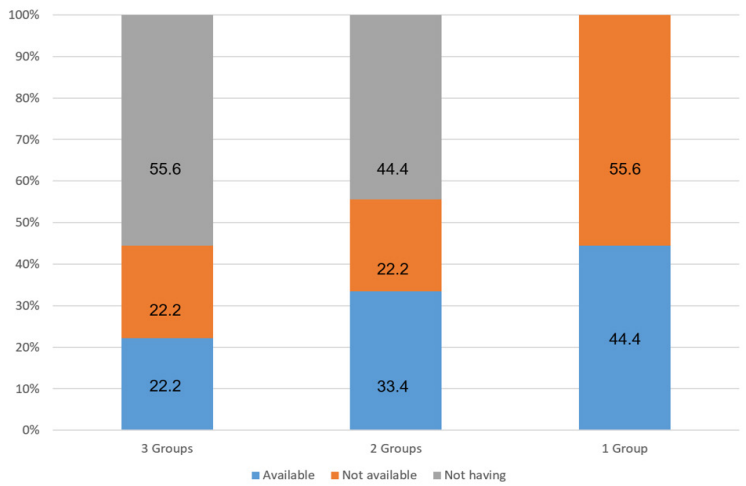

Figure 2. Proportion of commune health stations with available antihypertensive medications, 2024

The figure shows that 44.4% of Commune Health Stations (CHSs) had one group of antihypertensive drugs available; 33.3% had two groups; 22.2% were equipped with all three groups of antihypertensive medications. Meanwhile, 55.6% CHSs lacked at least one group of antihypertensive drugs.

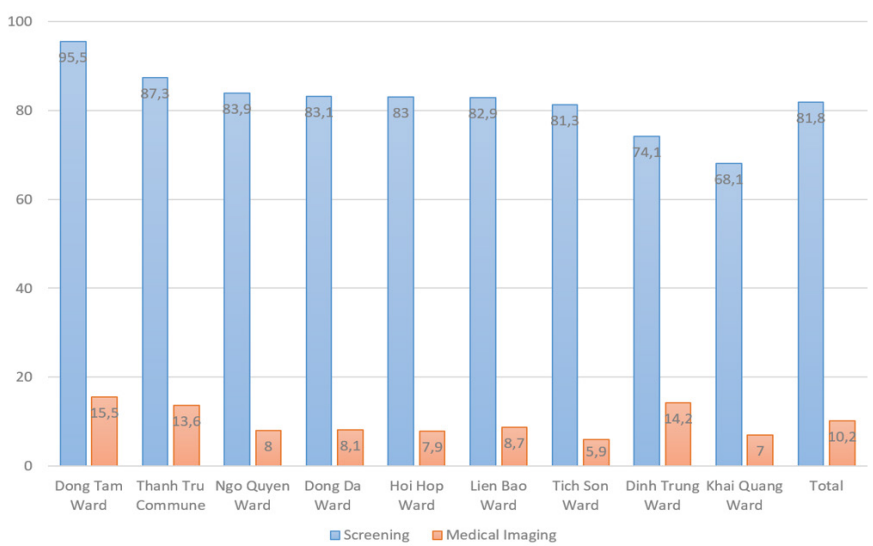

Figure 3. Proportion of adults aged ≥40 years screened and diagnosed with hypertension

Figure 3. indicates the proportion of adults aged ≥40 years who were screened and diagnosed with hypertension in 2024. The overall screening rate ranged from 68.1% to 95.5% across Dong Tam Ward. The overall diagnosis rate was 10.2% among those screened, with the lowest rate at 7.0% and the highest at 15.5%.

3.2. Management and treatment outcomes and associated factors

Table 2. Proportion of hypertensive patients under management and treatment at commune health stations

Indicator Unit	Under treatment		Archive treatment targets	
	N	P (95%CI)	N	P (95%CI)
Thanh Tru Commune	275	50.0 (41.1-55.9)	125	45.5 (36.7-54.2)
Dinh Trung Ward	89	18.2 (10.2-26.2)	50	56.2 (42.4-69.9)
Dong Tam Ward	144	11.8 (6.5-17.0)	88	61.1 (50.9-71.3)
Hoi hop Ward	266	68.7 (63.2-74.3)	98	36.8 (27.3-46.4)
Total	774	29.2 (26.0-32.4)	361	46.6 (41.5-51.8)

The results in the table indicate the number and proportion of hypertensive patients managed and treated at four commune/ward health stations, as well as the proportion that achieved treatment targets. Overall, compared with the cumulative number of detected hypertension cases in the study area, 29.2% (95% CI: 26.0–32.4) were under management and treatment. The highest management rate was observed in Hoi Hop Ward at 68.7% (95% CI: 63.2–74.3), while the lowest was in Dong Tam Ward at 11.8% (95% CI: 6.5–17.0). The overall proportion of patients achieving treatment targets was 46.6% (95% CI: 41.5–51.8), with the highest in Dong Tam Ward at 61.1% (95% CI: 50.9–71.3) and the lowest in Hoi Hop Ward at 36.8% (95% CI: 27.3–46.4).

Table 3. Factors associated with treatment outcome

Blood pressure Indicator	Target blood pressure		p-value*
	Qualified (n=361)	Unqualified (n = 413)	
Follow-up within 3 months (n=560)			
Yes	248	312	0,033
No	113	101	
Dose adjustment (n=162)			
Yes	88	74	0,027
No	273	339	
Lifestyle modifications (n=264)			
Yes	140	124	0,010
No	221	289	

**: test chi-square*

The table shows that several factors were associated with treatment outcomes. Specifically, the number of patients who attended follow-up visits within three consecutive months was significantly associated with achieving target blood pressure (p=0.033). Patients who underwent appropriate dose adjustment of antihypertensive medications in the past three months had a statistically significant difference compared to those without medication changes (p=0.027). Similarly, patients who adopted lifestyle modifications showed a considerable difference compared to those without behavioral changes (p=0.010).

4. DISCUSSION

Hypertension is showing a trend of affecting younger populations, posing a burden of disease, impairing quality of life, and leading to premature mortality. The disease is preventable and can be detected early and managed directly at the community level by following the principles of family medicine. According to Decision No. 155/2022/QĐ–TTg of the Prime Minister on the "Approval of the National Plan for the Prevention and Control of Non-communicable Diseases and Mental Health Disorders for the period 2022–2025," the targets include: at least 80% of people aged ≥40 years to have their blood pressure measured once a year, 50% of hypertensive patients to be detected, and at least 50% of diagnosed hypertensive patients to be managed and treated; and 95% of commune health stations (CHS) to have all three essential groups of antihypertensive drugs available [5]. The findings of the 2024 situation assessment in Vinh Yen City showed that CHSs had implemented screening, diagnosis, and reporting of hypertension cases. However, only 44.4% of CHSs were providing outpatient management and treatment of hypertensive patients. In terms of screening activities, 77.8% of CHSs conducted screening campaigns, and 44.4% carried out community-based screening in 2024. In practice, only four CHSs in Vinh Yen were officially assigned the task of managing outpatient hypertension. In contrast, the others were limited to screening, diagnosis, emergency care, and referral to higher-level hospitals. Although all CHS staff participated in these activities, essential equipment for hypertension screening was not adequately available. Only 33.3% of CHSs had sufficient anthropometric measurement tools, and 55.6% had enough blood pressure monitors for community collaborators. The availability of essential medicines was also below the

requirements of the commune level: 44.4% of CHSs had one group of antihypertensive drugs available, 33.3% had two groups, and only 22.2% had all three groups as required. Screening results showed that 81.8% of adults had been screened for hypertension, and 10.2% were diagnosed with the condition in 2024. While this coverage met the national target, there were local disparities—for example, Khai Quang Ward achieved only 68.1% screening coverage and 7.0% diagnosis rate. Previous studies have highlighted resource-related barriers affecting hypertension screening, detection, and management at CHSs, underscoring the need for coordinated interventions to sustain, expand, and improve the program's quality. Research on knowledge and practices of primary healthcare workers revealed that 50.5% of commune health staff surveyed did not know how to diagnose hypertension [6]. Another study on the capacity of primary healthcare in rural areas of Vietnam indicated that CHS staff in some regions lacked sufficient capacity to diagnose and manage common conditions [7]. A 2016 survey by the National Institute of Hygiene and Epidemiology reported similar findings, showing that only 23.3% of CHSs regularly had two groups of antihypertensive drugs available, and fewer than 5% had all three essential groups [8]. In Vinh Yen, the proportion of hypertensive patients managed at the four CHSs was 29.2% (95% CI: 26.0–32.4), and the rate of achieving treatment targets was 46.6% (95% CI: 41.5–51.8). These figures were higher than those reported in the 2015 national survey by the Ministry of Health, where only 24.9% of hypertensive patients were managed across all health system levels and 9.7% achieved treatment targets [9].

Analysis of factors associated with achieving target blood pressure showed statistically significant associations with: attending all scheduled follow-up visits over three consecutive months (p=0.033), appropriate medication adjustment in the past three months (p=0.027), and lifestyle modification (p=0.010). These findings highlight that to improve the quality of hypertension management, strong collaboration between patients through treatment adherence and lifestyle modification, and between health facilities through individualized treatment protocols tailored to each patient’s blood pressure status is required.

5. CONCLUSION

All commune health stations (CHSs) in Vinh Yen conducted hypertension screening, with 44.4% providing outpatient management. On average, each CHS had 3.7 staff involved; 55.6% had sufficient blood pressure monitors for community screening, 33.3% had adequate anthropometric equipment, and 77.8% had available clinical documents. Regarding antihypertensive drugs, 33.3% of CHSs had two classes of medications available, and only 22.2% had all three essential courses. Screening coverage reached 81.8% among adults aged ≥40 years, with 10.2% diagnosed with Hypertension in 2024. Across four surveyed communes/wards, the proportion of patients managed was 29.2% (95% CI: 26.0–32.4), and the rate of achieving treatment targets was 46.6% (95% CI: 41.5–51.8). Factors significantly associated with achieving target blood pressure included: regular follow-up within three consecutive months (p=0.033), appropriate medication dose adjustment (p=0.027), and lifestyle modification (p=0.010).

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