

SURVEY ON THE KNOWLEDGE OF HYPERTENSION ACCORDING TO TRADITIONAL MEDICINE COMBINED WITH MODERN MEDICINE AMONG THE POPULATION OF THUAN AN CITY, BINH DUONG PROVINCE

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ABSTRACT

Objective: To assess the knowledge of the population in Thuan An City, Binh Duong Province, regarding hypertension according to Traditional Medicine combined with Modern Medicine.

Subjects and research methods: A cross-sectional descriptive study was conducted to survey the knowledge of 384 residents aged 18 and older living in Thuan An City, Binh Duong Province, who agreed to participate in the study.

Results: 82.1% of the total participants had a knowledge level of average or higher about hypertension according to Traditional Medicine combined with Modern Medicine, with 24% having a good knowledge level. Analysis of correlations identified several factors associated with the population's knowledge of hypertension according to Traditional Medicine combined with Modern Medicine, including occupation and income. Specifically, the group engaged in intellectual labor had 2.52 times lower odds of having poor knowledge compared to other occupations (students, unemployed, retirees, etc.), and those with an average monthly income above 10 million VND had 2.66 times lower odds of having poor knowledge compared to those with a monthly income below 5 million VND.

Conclusion: The knowledge of the population in Thuan An City, Binh Duong Province, about hypertension according to Traditional Medicine combined with Modern Medicine is at an average level.

Keywords: Knowledge, Hypertension, Traditional Medicine combined with Modern Medicine.

1. INTRODUCTION

Hypertension is the most prevalent chronic non-communicable disease today, with an increasing incidence rate, becoming a major concern in global medicine. According to the World Health Organization (WHO) in 2023, an estimated 1.28 billion people worldwide suffer from hypertension, with two-thirds of them living in low- and middle-income countries [1]. The pooled prevalence of hypertension in Vietnam up to 2019 was 21.1% (95% confidence interval = 18.5–23.7) based on 10 studies, with a significantly higher prevalence in men. The pooled prevalence of diagnosed hypertension and awareness and treatment of hypertension were significantly lower in rural areas [2]. One of the reasons for this situation is that most people have little knowledge about the disease, leading to misconceptions about hypertension and its risk factors, as well as being unaware of early detection and prevention [3].

Nowadays, the influence and effectiveness of Traditional Medicine (TM) are increasingly affirmed when integrated with Modern Medicine (MM) in treating hypertension [4].

In 2019, the prevalence of hypertension among individuals aged 18 and above in Thuan An Town, Binh Duong Province, was 30.2%, with 25% being newly diagnosed [5]. This highlights that hypertension is an urgent health issue in Binh Duong Province, and controlling blood pressure through combining traditional and modern medicine should be prioritized and applied in the community. Therefore, we conducted this study to assess the level of knowledge among the residents of Thuan An City, Binh Duong Province, about hypertension from the perspective of Traditional Medicine in combination with Modern Medicine.

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2. MATERIALS AND METHODS

2.1. Study Subjects

Study population: Individuals aged 18 years and older residing in Thuan An City, Binh Duong Province.

Inclusion criteria: Individuals aged 18 years and older, currently living in Thuan An City, Binh Duong Province; willing to participate in the study.

Exclusion criteria: Individuals who are unable to understand the questions; those with mental disorders; mute or deaf individuals; intellectually disabled individuals; those who wish to withdraw from the study at any time.

2.2. Study Methods

- Study duration and location: From January 2024 to September 2024, in Thuan An City, Binh Duong Province.

- Study design: Descriptive cross-sectional study.

Sample size: 384 participants meeting the inclusion criteria during the study period. The sample size formula:

$$n = Z^2 \frac{p(1-p)}{d^2}$$

Z: Standard normal distribution value for 95% confidence level (Z=1.96).

α : Type I error probability ($\alpha=0.05$).

d: Margin of error (d=0.05).

p: Expected prevalence (p=0.5 to achieve the largest sample size)

- Survey process:

A structured questionnaire was developed, consisting of three main sections:

Section A: 7 questions (Questions 1–7) regarding the general characteristics of the participants

Section B: 25 questions (Questions 8–32) concerning knowledge about hypertension from the Modern Medicine perspective

Section C: 20 questions (Questions 33–52) regarding knowledge about hypertension from the Traditional Medicine perspective

Sampling method: Systematic random sampling with a sample size of 384 individuals. Thuan An City comprises 9 wards and 1 commune; the sample size was evenly distributed across these areas, with 39 participants selected from each.

2.3. Data Processing

Data was entered using Microsoft Office 365 Excel.

Statistical analysis was performed using IBM SPSS 20.0

The relationship between knowledge about hypertension and the characteristics of the residents of Thuan An City, Binh Duong Province, was analyzed using the Chi-square test. If more than 20% of values were less than 5, Fisher's test was used with a significance level of $\alpha = 0.05$, and the confidence level was 95%.

2.4. Ethical Considerations: This study was conducted with approval from the Ethics Committee in Biomedical Research of the University of Medicine and Pharmacy at Ho Chi Minh City (1930/ĐHYD-HĐĐĐ).

3. RESULTS

3.1. Characteristics of the Study Sample

Table 1. Characteristics of the Study Sample Among Residents of Thuan An City, Binh Duong Province in 2024 (n=384)

Sample characteristics	Frequency	Percentage (%)
Age Group		
18-29	156	40.6
30-39	73	19
40-49	72	18.8
50-59	52	13.5
≥60	31	8.1
Gender		
Male	196	51
Female	188	49
Occupation		
Manual laborers	138	35.9
White-collar workers	137	35.7
Other occupations (students, unemployed, retirees, etc.)	109	28.4
Educational Level		
Illiterate (unable to read or write)	0	0
Up to High School (elementary, middle school)	155	40.4
Above High School (vocational school/ college/university/ postgraduate)	229	59.6
Average Monthly Income		
<5 million VND	102	26.6
5-10 million VND	140	36.5

Sample characteristics	Frequency	Percentage (%)
>10 million VND	142	36.9
History of Hypertension		
Diagnosed with Hypertension	100	26
Not Diagnosed	284	74

3.2. Knowledge of Hypertension Among Residents of Thuan An City, Binh Duong Province, in 2024

Table 2. Knowledge Scores of Residents in Thuan An City, Binh Duong Province in 2024 Regarding Hypertension According to MM, TM, and the Combination of Both

n=384	Correct Knowledge in MM	Correct Knowledge in TM	Correct Knowledge in Combination
Average Score (mean ±sd)	19.49±3.68	12.7±3.14	16.1±3.01

Overall, participants demonstrated an average level of knowledge in each section.

LEVEL OF KNOWLEDGE ABOUT HYPERTENSION

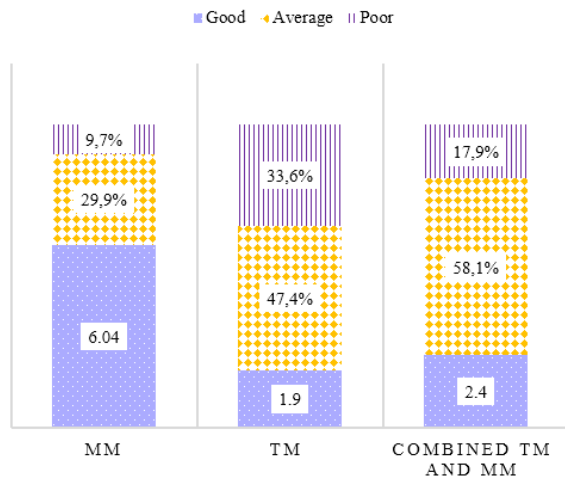


Figure 1. Proportion of Knowledge Levels Among Residents of Thuan An City, Binh Duong Province in 2024 Regarding Hypertension

Of the total 384 participants, 60.4% had a good level of knowledge about hypertension according to MM. The majority of participants (47.4%) had an average level of knowledge about hypertension according to TM. In the combined TM and MM approach, more than 80% of the population had a knowledge level of average or above, with 24% having good knowledge and 58.1% at an average level.

3.3. Correlations

The association between knowledge of hypertension according to MM and the sample characteristics

Table 3. Relationship Between Knowledge of Hypertension Among Residents of Thuan An City, Binh Duong Province in 2024 According to MM and Sample Characteristics (n=384)

Sample characteristics (n = 384)	Knowledge Levels (n, %)			p
	Good	Average	Poor	
Occupation				
Manual laborers	82 59.4%	45 32.6%	11 8%	0.033
White-collar workers	92 67.2%	37 27%	8 5.8%	
Other occupations (students, unemployed, retirees, etc.)	58 53.2%	33 30.3%	18 16.5%	
Average Monthly Income				
<5 million VND	49 48%	39 38.2%	14 13.8%	0.024
5-10 million VND	88 62.9%	37 26.4%	15 10.7%	
>10 million VND	95 66.9%	39 27.5%	8 5.6%	

There is a significant association between the level of knowledge about hypertension according to MM and the participants' occupation and average monthly income (p<0.05).

The association between knowledge of hypertension according to TM and the sample characteristics

There is no significant association between the level of knowledge about hypertension according to TM and variables such as age group, gender, occupation, educational level, average monthly income, and personal history of hypertension.

The association between knowledge of hypertension according to the combination of TM and MM and the sample characteristics

Table 4. Relationship Between Knowledge of Hypertension Among Residents of Thuan An City, Binh Duong Province in 2024 According to Combined TM and MM and Sample Characteristics (n=384)

Sample characteristics (n = 384)	Knowledge Levels (n, %)			p
	Good	Average	Poor	
Occupation				
Manual laborers	37 26.8%	74 53.6%	27 19.6%	0.013
White-collar workers	30 21.9%	93 67.9%	14 10.2%	
Other occupations (students, unemployed, retirees, etc.)	25 22.9%	56 51.4%	28 25.7%	
Average Monthly Income				
<5 million VND	26 25.5%	51 50%	25 24.5%	0.002
5-10 million VND	37 26.4%	72 51.4%	31 22.2%	
>10 million VND	29 20.4%	100 70.4%	13 9.2%	

There is a significant association between the level of knowledge about hypertension according to the combination of TM and MM and participants' occupation ($p=0.013$) as well as their average monthly income ($p=0.002$).

4. DISCUSSION

4.1. Knowledge of Hypertension from the Modern Medicine Perspective

According to the study, 60.4% of the participants had good knowledge of hypertension from the MM perspective. This result is higher than a study conducted by Tran Binh Phuong Anh in District 4, Ho Chi Minh City, where only 45.7% had good knowledge [6]. Although these are encouraging results, they still do not fully address the gaps and misconceptions that lead to improper prevention, control, and treatment of the disease.

4.2. Knowledge of Hypertension from the Traditional Medicine Perspective

Only 19% of the participants had good knowledge of hypertension from the TM perspective, which is one-third of the proportion of those with good MM knowledge. This suggests that knowledge about hypertension from the TM perspective is less emphasized compared to MM. The reason may be that people tend to prioritize MM, and TM knowledge is mostly passed down orally without official, accessible information channels.

4.3. Knowledge of Hypertension from TM Combined with MM

Overall, the population's knowledge about hypertension according to the combination of TM and MM was above the average level. There is a 2.5-fold difference between the percentage of individuals with good knowledge about hypertension according to MM (60.4%) and those with good knowledge according to the combination of TM and MM (24%). This disparity may be attributed to the fact that much of the terminology used in TM is derived from Sino-Vietnamese, which is relatively difficult to understand and less commonly used in everyday life, limiting the public's accessibility to TM knowledge. However, when compared to the study by Tran Binh Phuong Anh conducted in District 4 [6], the percentage of individuals with good knowledge about the combination of TM and MM in Thuan An City, Binh Duong Province, is four times higher than that of the residents in District 4, Ho Chi Minh City (24% compared to 5.7%). This difference may be explained by demographic variations and sample size differences between the two studies. Additionally, as hypertension has become increasingly common and is considered a "disease of the century", information about hypertension in both TM and MM is more readily accessible in the community. However, the quality of knowledge still depends on the sources of information and the reliability of the content.

4.4. The association between knowledge of hypertension according to MM and the sample characteristics

There is a significant relationship between the level of knowledge about hypertension according to MM and the participants' occupation. Based on the results obtained, the percentage of individuals with poor knowledge of hypertension according to MM is lowest among white-collar workers (5.8%), followed by manual laborers (8%), and other occupations (16.5%). This result may be attributed to the fact that white-collar workers have greater access to a wealth of information, including health-related topics, which enhances their ability to seek and grasp knowledge compared to other occupational groups.

There is also a significant association between the level of knowledge about hypertension according to MM and the average monthly income of the participants. As income increases, the percentage of individuals with poor knowledge about hypertension according to MM decreases. This finding aligns with the research conducted by Sarya Swed, which indicates that individuals with higher incomes tend to have better knowledge compared to those in lower economic strata [7].

4.5. The association between knowledge of hypertension according to TM and the sample characteristics

There is no significant association between the level of knowledge about hypertension according to TM and the sample characteristics in the study ($p > 0.05$). This result indicates that the residents of Thuan An City have not shown sufficient interest in this chronic disease

within the context of TM, as only 19% demonstrated good knowledge. This raises the question of whether the current informational outreach on TM is presented in a way that is difficult to understand, using specialized terminology that is not easily accessible to the public, or whether the scientific evidence supporting the efficacy of TM in treatment has not yet instilled confidence among the population. More surveys are needed to clarify this issue and ultimately enhance community understanding, thereby improving the effectiveness of TM applications.

4.6. The association between knowledge of hypertension according to the combination of TM and MM and the sample characteristics

There is a significant association between the level of knowledge about hypertension according to the combination of TM and MM and the participants' occupation ($p = 0.013$). White-collar workers had the lowest percentage of poor knowledge about hypertension according to the combined TM and MM approach (10.2%), while the percentages for manual laborers and individuals in other occupations were twice as high (19.6% and 25.7%, respectively). This may be explained by the fact that white-collar workers have better access to health-related information through various media sources, thereby enhancing their knowledge about hypertension and health care issues in general [8].

There is also a significant association between the level of knowledge about hypertension according to the combination of TM and MM and the average monthly income, with a statistically significant difference ($p = 0.002$). As income increases, the percentage of individuals with poor knowledge about hypertension according to the combined TM and MM approach decreases. This disparity may be explained by the observation that individuals with higher incomes tend to have greater awareness of personal health issues, which leads them to actively seek information about the dangers of hypertension from both MM and TM perspectives in order to care for and improve their health on a daily basis.

5. CONCLUSIONS

According to the research findings, we found that the level of knowledge about hypertension according to the combination of TM and MM among residents of Thuan An City, Binh Duong Province, is as follows: 24% have good knowledge, 58.1% have average knowledge, and 17.9% have poor knowledge. Multivariate analysis revealed a significant association between knowledge of hypertension according to the combination of TM and MM with the participants' occupation and average monthly income. Specifically, white-collar workers had the lowest percentage of poor knowledge about hypertension according to the combined TM and MM approach (10.2%), while the percentage for manual laborers and individuals in other categories (students, unemployed, retirees) was twice as high (19.6% and 25.7%, respectively). Residents

with an average monthly income greater than 10 million VND had a poor knowledge rate of 9.2% regarding hypertension according to the combined TM and MM approach, which is two times lower than those with incomes between 5-10 million VND (22.2%) and those earning less than 5 million VND (24.5%).

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