

Hypertension Unawareness and Uncontrolled among Adults and Elderly People in Rural Communities, Nan Province

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Abstract This study was aimed at measuring actual prevalence of hypertension and estimating hypertension unawareness and uncontrolled among adults and elderly people dwelling in rural communities. Data used in this study were the secondary data from the 2004 Health Survey in Communities Project of Na Muen district, Nan province. The sample consisted of 3,022 persons aged 35 years and over. Hypertension is defined as a systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg or reported diagnosis of hypertension. Data were analyzed using descriptive statistics. Results revealed that the prevalence of hypertension was 19.2 percent. When adjusted with persons who reported diagnosis of hypertension, the overall prevalence of hypertension increased to 28.3 percent. Age-specific prevalence of hypertension increased progressively with chronological age. Of all hypertensions, about 43.9 percent were unaware of their high blood pressure, as reported in adults more than the elderly (53.2 % and 31.6 %). However, awareness without treatment or treatment with uncontrollable hypertension were found in 42.7 percent, and prevailed more in the elderly than adults (49.4 % and 36.5 %). These findings suggest that hypertension is highly prevalent in communities, and the rates of awareness and controlled blood pressure are relatively low, indicating an urgent need for developing appropriate programs for screening and health education to prevent and control hypertension in communities.

Key words: hypertension, prevalence, awareness, control

Introduction

The prevalence of hypertension varies greatly within and between countries. According to the World Health Organization and the International Society of Hypertension (ISH), some 600 million people world-

wide have high blood pressure and nearly 3 millions die every year as a direct result.⁽¹⁾ Hypertension is known as a major risk factor for cardiovascular diseases (CVD), leading the main causes of death in various countries. In Thailand, CVD has also been a ma-

major cause of mortality since 1993⁽²⁾. Hypertensive persons had 3.7 times increased risk for cardiovascular disease,⁽³⁾ and it was ranked second among all causes of deaths in 1998⁽⁴⁾. In Nan province, however, hypertension showed the highest prevalence among non-communicable diseases and was also ranked the fifth among all causes of deaths.

Hypertension is considered as a disease of modernization related to changing in lifestyle, dietary intake, smoking, alcohol consumption, and lack of exercise. People may not be aware of the need to monitor blood pressure because hypertension is asymptomatic while disorders proceed even though they feel fine⁽³⁾. In the United States, it is estimated that one in four adults has elevated blood pressure, and more than 30 percent of them are unaware of it. Since people with hypertension may not exhibit any symptoms, their high blood pressure is often undiagnosed until complications manifest⁽⁵⁾. The three National Health Examination Surveys (NHES) in Thai population in 1991, 1996, and 2004 illustrated the proportions of unawareness and uncontrolled cases of hypertension were as high as 90, 53, and 71 percent of unawareness, and 56, 50, and 20 percent of uncontrolled cases, respectively^(3,6,7). These results indicated that most of people were indifferent to check up or to control their blood pressure regularly, enhancing an increase in complications and mortality of hypertension and related diseases⁽³⁾.

Therefore, hypertension is one of the important public health problems, and it is necessary to be considered by policymakers and healthcare providers to promote hypertension awareness and control, particularly in communities. This study was designed to provide current and reliable data on the prevalence of hypertension and to estimate unawareness and uncontrolled hypertension among adults and elderly living in rural communities in order to be an additional evidence for policymakers to further dealing with this

problem in communities.

Methodology

This study used the secondary data from the 2004 Health Survey in Communities of Na Muen district, Nan province, in the northern part of Thailand. Four rural sub-districts namely Bo Keaw, Nathanung, Mueng Lee, and Ping Luang in the screening survey of non-communicable diseases in communities were conducted. Respondents were all people aged 35 years and over living in the communities. Data were collected by interviewing and physical examination-measuring blood pressure by using a mercury sphygmomanometer. In this survey, blood pressure was measured twice with subjects in the seated position or in the supine position. In all, there were 3,022 persons included in this study. Descriptive statistics were used to describe general characteristics and hypertension morbidity.

The defined threshold for hypertension was based on the 1999 World Health Organization-International Society of Hypertension guidelines.⁽⁸⁾ Hypertension or high blood pressure is defined as systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg or currently diagnosed with hypertension.

In awareness, treatment, and control definitions, awareness cases referred to respondents who reported a prior diagnosis of hypertension by physicians; treatment denoted to subjects who were currently using antihypertensive drugs; and control meant that diagnosed hypertensive persons could maintain their blood pressure at a normal level⁽⁹⁾. However, due to the limitation of the data that did not record the antihypertensive treatment, this study classified the respondents into two groups: 1) unawareness cases meant the respondents who were new cases with blood pressure $\geq 140/90$ mmHg detected in the survey and 2) uncontrolled blood pressure of hypertension referred to the diagnosed hypertensive persons who still had high

blood pressure $\geq 140/90$ mmHg with or without treatment⁽¹⁰⁾.

Results

1. General characteristics of the respondents

Of the 3,022 subjects, 60 percent were female. Classified by age groups, 67 percent and 33 percent were adults aged 35-59 years and elderly persons aged 60 years and over, respectively. About 24 percent had family history of hypertension, and 15.9 percent were diagnosed as having hypertension by physicians.

2. Distribution of blood pressure

The distributions of systolic and diastolic blood pressure of respondents were approximately normal. Mean systolic and diastolic blood pressure (mmHg) were 129.53 (SD 12.55) and 85.11 (SD 5.09) for males, and 127.36 (SD 10.98) and 85.00 (SD 5.40) for females, respectively. The mean of systolic and diastolic blood pressure in males was higher than those in females.

Table 1 illustrates age and sex-specific of blood pressure distribution classified according to the

1999 World Health Organization-International Society of Hypertension (WHO-ISH) guidelines.⁽⁸⁾ Overall, 48.5 percent of males and 55.2 percent of females had normal blood pressure (systolic blood pressure-SBP < 130 mm Hg and diastolic blood pressure-DBP < 85 mm Hg), whereas 29.6 percent of males and 27.4 percent of females had high-normal blood pressure (prehypertensive stage). The incidences of hypertension were classified into 3 stages: mild hypertension in 13.8 percent of men and 11.7 percent of women, moderate hypertension in 7.9 percent of men and 5.5 percent of women, and severe hypertension equally (0.2 percent) in both sexes.

3. Prevalence of hypertension

Table 2 shows the age-sex specific prevalence of hypertension. Overall 19.2 percent of the samples had hypertension. The incidence of hypertension was found in males more than females, and its prevalence increased with age in both sexes.

Of the 3,022 respondents, 580 (19.2 percent) as measured by sphygmomanometer, had high blood pressure (Table 2). Among those 580 hypertensive

Table 1 Percentage distribution of blood pressure levels by age and sex (n = 3,022)

| | Normotensive or controlled HT | | Hypertension | | |
|-----------------|----------------------------------|-------------|--------------|----------|------------|
| | Normal | High-normal | Mild | Moderate | Severe |
| Age/sex | | | | | |
| SBP (mmHg) | < 130 | 130-139 | 140-159 | 160-179 | ≥ 180 |
| DBP (mmHg) | < 85 | 85-89 | 90-99 | 100-109 | ≥ 110 |
| Total (years) | 52.5 | 28.3 | 12.5 | 6.5 | 0.2 |
| 35-59 | 53.8 | 29.1 | 11.5 | 5.5 | 0.1 |
| ≥ 60 | 49.8 | 26.7 | 14.6 | 8.4 | 0.5 |
| Males (years) | 48.5 | 29.6 | 13.8 | 7.9 | 0.2 |
| 35-59 | 49.1 | 31.2 | 12.9 | 6.5 | 0.3 |
| ≥ 60 | 47.5 | 26.9 | 15.2 | 10.2 | 0.2 |
| Females (years) | 55.2 | 27.4 | 11.7 | 5.5 | 0.2 |
| 35-59 | 56.6 | 27.8 | 10.6 | 4.9 | 0.1 |
| ≥ 60 | 51.8 | 26.5 | 14.1 | 7.1 | 0.5 |

persons detected in this survey, it was found that 205 subjects were ever diagnosed with hypertension, and 375 never diagnosed hypertension prior to the survey. However, 480 subjects reported the history of diagnosed hypertension, of which 205 uncontrolled and 275 controlled cases (Table 3).

When the actual prevalence of hypertensive persons in rural communities was adjusted by including both the diagnosed hypertensive persons and those (the threshold of blood pressure $\geq 140/90$ mmHg) detected from this survey, it was found that 855 subjects (205 + 275 + 375) experienced hypertension. Table 4 illustrates that the prevalence of hypertension increased from 19.2 percent to 28.3 percent. Particularly, the affected elderly aged 60 years and over increased from 23.5 percent to 37.6 percent, whereas adults aged 35-49 years increased from 17.1 percent to 23.8 percent.

4. Unawareness and uncontrolled blood pressure of hypertension

In case of the 2,542 respondents who never

experienced the diagnosis of hypertension, 375 persons were detected with high levels of blood pressure $\geq 140/90$ mmHg (Table 3), indicating new cases of hypertension who were unaware of their conditions. When calculated using the number of adjusted hypertension, it was found that unawareness cases were 43.9 percent of total hypertension (Table 5). Unawareness persons were higher among adults than the elderly (53.2 and 31.6%, respectively).

Among 480 diagnosed hypertension, there were only 275 persons (57.3 %) who could maintain blood pressure at normal level (Table 3). These were 136 (49.5 %) adults and 139 (50.5 %) elderly. Table 5 shows that the 205 respondents or 42.7 percent still had high blood pressure $\geq 140/90$ mmHg. These findings indicated that nearly half of subjects could not control their blood pressure or might not be treated or undergoing ineffective treatment to control blood pressure. These events were higher for the elderly than adults (49.4% relative to 36.5%).

Table 2 Prevalence of hypertension by age and sex (n = 3,022)

| Age group (years) | Males | | Females | | All | |
|----------------------|-------------------|-------------|-------------------|-------------|-------------------|-------------|
| | n [†] | percent | n [†] | percent | n [†] | percent |
| 35-59 | 151 / 766 | 19.7 | 198 / 1271 | 15.6 | 349 / 2037 | 17.1 |
| ≥ 60 | 114 / 446 | 25.6 | 117 / 539 | 21.7 | 231 / 985 | 23.5 |
| Total | 265 / 1212 | 21.9 | 315 / 1810 | 17.4 | 580 / 3022 | 19.2 |

[†]Dividing number is the total case

Table 3 Blood pressure levels by history of diagnosed hypertension (n = 3,022)

| | BP $\geq 140/90$ mmHg (580) | | BP $< 140/90$ mmHg (2,442) | | All (3,022) | |
|----------------------------|--------------------------------|------|-------------------------------|------|----------------|-----|
| | n | % | n | % | n | % |
| Diagnosed hypertension | 205 | 42.7 | 275 | 57.3 | 480 | 100 |
| No history of hypertension | 375 | 14.8 | 2,167 | 85.2 | 2,542 | 100 |

Table 4 Total prevalence of hypertension adjusted by history of diagnosed hypertension and blood pressure level investigation (n = 3,022)

| Age groups (years) | Non adjusted prevalence* | | Adjusted prevalence** | |
|-----------------------|--------------------------|------|-----------------------|------|
| | n [†] | % | n [†] | % |
| 35 - 59 | 349 / 2,037 | 17.1 | 485 / 2,037 | 23.8 |
| ≥ 60 | 231 / 985 | 23.5 | 370 / 985 | 37.6 |
| All | 580 / 3,022 | 19.2 | 855 / 3,022 | 28.3 |

*Non adjusted prevalence of hypertension included only the persons with detected blood pressure $\geq 140/90$ mm Hg

**Adjusted prevalence of hypertension included both the diagnosed hypertensive and the persons with detected blood pressure $\geq 140/90$ mmHg.

[†]Dividing number is the total case

Table 5 Unaware cases and uncontrolled cases by age groups

| Age groups (years) | Unaware cases | | Uncontrolled cases | |
|-----------------------|------------------|-------------|--------------------|-------------|
| | n [†] | %* | n [†] | %** |
| 35-59 | 258 / 485 | 53.2 | 91 / 249 | 36.5 |
| ≥ 60 | 117 / 370 | 31.6 | 114 / 231 | 49.4 |
| Total | 375 / 855 | 43.9 | 205 / 480 | 42.7 |

*Calculated by divided by the number of adjusted hypertension

**Calculated by divided by the number of prior diagnosed cases of hypertension

[†]Dividing number is the total number of adjusted hypertension

[‡]Dividing number is the total number of prior diagnosed cases of hypertension

Conclusion

The findings indicated that the prevalence of hypertension was high in the rural communities, especially in males and the aged. The hypertension prevalence in this study fell within the ranges reported by previous studies (5.4% to 47.2%)^(3,6,7,10,11-14). Differences may emerge from dissimilar populations or hypertension criteria; however, the prevalence of hypertension in Thailand tended to increase⁽⁷⁾.

Blood pressure in men will be higher than women at the same age, as reported by many studies^(13,15) as well as this study. A survey conducted in 3,615 Shinawatra employees aged 18-60 years reported that hypertension was more common in male and the preva-

lence increased sharply after the age of 25 years in male and 40 years in female⁽¹⁶⁾. In the second National Health Examination Survey- NHES II (1996), the prevalence of hypertension in male was higher than that in female, and the risk for hypertension was 1.27 times greater⁽⁶⁾. Moreover, findings indicated that the prevalence of hypertension was found in the elderly greater than in the adults. The reason might be that changes in body structure and function occur with chronological age. Age-related rise of blood pressure is neither an inevitable nor normal biological accompaniment of the age process⁽¹⁷⁾. Normally, the older people get, the more likely they are to develop high blood pressure.

Table 6 Comparison of unawareness and uncontrolled hypertension with previous studies in Thailand

| Studies | Year | Populations Age (years) | Criteria SBP/DBP | Unawareness (percent) | Uncontrolled (percent) |
|------------------------------|------|----------------------------|---------------------|--------------------------|---------------------------|
| Achananuparp ⁽¹¹⁾ | 1989 | ≥ 15 | 160/95 | 58.4 | 82.2 |
| NHES I ⁽³⁾ | 1991 | ≥ 15 | 160/95 | 89.7 | 56.1 |
| NHES II ⁽⁶⁾ | 1996 | ≥ 60 | 160/95 | 52.8 | 50.8 |
| NHES III ⁽⁷⁾ | 2004 | ≥ 15 | 140/90 | 71.2 | 20.1 |
| This study | 2005 | ≥ 35 | 140/90 | 43.9 | 42.7 |

In the analysis with the adjusted hypertension, about 53.2 percent adults and 31.6 percent elderly were found with blood pressure $\geq 140/90$ mmHg and were considered as the new cases or unawareness of hypertensive condition. This result was corresponding with the study by Jitapulkul⁽¹⁰⁾ that illustrated that about 20 percent of the elderly were unaware of hypertension. Although it is controversial about errors in diagnosis of hypertension; for example, procedures of blood pressure measurement, criteria of diagnosis or in case of white coat hypertension, the proportion of detection of hypertension was high, indicating that there are unknowingly numerous people affected. This event reflects the problems of accessibility or distribution of healthcare services and also limited knowledge about hypertension. Thus far, it is necessary that policymakers and healthcare providers should continue to conduct periodical survey for screening and early detection for hypertensive cases in communities.

Hypertension unawareness was higher for adults than the elderly people because most uncomplicated hypertension is asymptomatic or only with mild symptoms⁽³⁾. They may not be aware of or concerned to check their blood pressure without distinctive signs. Whereas the elderly in communities are mostly not migrating, and become the target groups in health promotion initiatives by healthcare providers. Hence, the elderly groups may tend to undergo blood pressure

measurement and detect hypertensive condition more readily than adult people.

These findings indicated that nearly half of the subjects may not be treated or undergo ineffective treatment to control blood pressure. These situations were critical for the elderly than adults. Several possible explanations might be relevant to why uncontrolled cases are somewhat greater among the elderly than adults. For example, this may be related to availability and accessibility of health services for the elderly⁽¹⁸⁾ due to various restrictions such as self management, dependency, illiterate, poor, and chronic illnesses or disabilities⁽¹⁰⁾. In Thailand, most of the elderly were suffering from one or more of chronic illnesses, and one-fourth had disabilities⁽³⁾. A study by Jitapulkul⁽¹⁰⁾ found that the elderly who had long term disability showing blood pressure levels of both systolic and diastolic higher than those of the elderly who had not. Moreover, most of the elderly are poor and not well educated who may tend to face with inequity to access to healthcare services. Therefore, healthcare services should be available and accessible. Management of controlled and improved hypertension is needed and emphasized to care the elderly in communities.⁽¹⁹⁾

When proportionate people in unawareness groups and uncontrolled groups are considered with hypertensive persons, the results of this study are lower

than those of previous studies^(3,6,7,11). Moreover, on trends of prevalence of hypertension as reported by other studies in Thailand, it was confirmed that hypertension is the most important non-communicable disease that has mirrored problems in public health both in screening and healthcare services. Table 6 shows that the prevalence of undiagnosed hypertensive people is still high, although trends of treatment and control are improved. Therefore, the study of determinants associated with unawareness hypertension should be further investigated.

The study has some limitations that it used the secondary data for analysis, so it was limited by the scope of details. Thus, it could not possibly approach some theoretical aspects. Some important aspects, such as history of treatment by currently using hypertensive drug and factors related to awareness and control of hypertension, were not captured in the sources of data used. On the other hand, although the measured blood pressure levels were conducted twice in a single visit in two positions, it is clearly difficult to use such criteria to diagnose hypertension in large population surveys. Hence, the prevalence of hypertension in this survey may have been overestimated.

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References

1. World Health Organization. The world health report 2002: reducing risks, promoting health life. Geneva: World Health Organization; 2002.
2. The Ministry of Public Health. Statistics of public health. Nonthaburi: the Ministry of Public Health; 1997.
3. Chooprapavan J. Health status of Thai people in 2000. Bangkok: Usa Publishing; 2000.
4. Chooprapavan J. Report of causes of deaths verify by verbal autopsy phase I, 1998. Bangkok: Health Systems Research Institute; 2000.
5. Connell JO. Hypertension, Part one: A patient guide. [cited 2005 Apr 9]; Available from: URL: <http://www.heartinfo.org/ms/guides/14/main.html>.
6. Thailand Health Research Institute. The National Health Examination Survey II in 1996 -1997. Bangkok: Health Systems Research Institute; 1997.
7. Porrapakkam Y, Punyaratabandhu P. The report of Thailand population health examination survey III. Nonthaburi: Health System Research Institute; 2006.
8. World Health Organization - International Society of Hypertension Guidelines for the Management of Hypertension. J of Hypert 1999; 17:151-83.
9. Muntner P, Gu D, Wu Z, Duan X, Wenqi G, Whelton PK. Factors associated with hypertension awareness, treatment, and control in a representative sample of the Chinese population. Hypertension 2004; 43:578-85.
10. Jitapunkul S. Hypertension: mirrored picture of service quality and inequality. In Jitapulkul S, Suriyavongpaisal P, editors. Health problems of Thai elderly. Bangkok: National Health Foundation, and Thailand Health Research Institute; 1999. p. 79-88.
11. Achanuparp S, Suriyawongpaisal P, Suebwonglee S, Sakdisawasdi O, Nanna P, Khumthong N, et al. Prevalence, detection and control of hypertension in Thai population of a central rural communities. J Med Assoc Thai 1989; 72(Suppl 1): 66-75.
12. Pauvilai V, Laorakpongse D. Hypertension at Ampur Ban Paew and some risk factors of hypertension. Bull Dept Med Serv 2000; 25:116-23.
13. Sitthi-Amorn C, Chandraprasert S, Bunnag S, Plengvidha C. The prevalence and risk factors of hypertension in Klong Toey slum and Klong Toey government apartment houses. Int J Epidemiol 1989; 18:89-94.
14. Voravong R, Patumanond J, Tawichasri C. Hypertension in rural elderly and its associated factors. Bull Dept Med Serv 1999; 24:469-76.
15. Green MS, Peled I. Differences in the prevalence of hypertension by ethnic origin and age at immigration in a cohort of 5,146 Israelis. Am J Epidemiol 1992; 135:1237-50.
16. Bhuripanyo K, Leowattana W, Ruangratanaamporn O, Mahanonda N, Sriratanasathavorn C, Chotinai-

- wattarakul C, et al. Are routine checkups necessary?: The Shinawatra's employee study. J Med Assoc Thai 2000; 83(Suppl 2): S163-71.
17. Smiciklas H. Aging, present knowledge in nutrition. 6th ed. Washington D.C.: International Life Sciences Institute Nutritional Foundation; 1990.
18. Agyemang C, Bruijnzeels MA, Owusu-Dabo E. Factors associated with hypertension awareness, treatment, and control in Ghana, West Africa. J of Hum Hypert 2006; 20:67-71.
19. Brindel P, Hanon O, Dartigues JF, Ritchie K, Lacombe JM, Ducimetiere P, et al. Prevalence, awareness, treatment, and control of hypertension in the elderly: the three city study. J of Hypert 2006; 24(1):51-8.

บทคัดย่อ ความไม่ตระหนักรู้และการไม่สามารถควบคุมภาวะความดันโลหิตสูง ของประชาชนวัยผู้ใหญ่และผู้สูงอายุในชุมชนชนบท จังหวัดน่าน
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การศึกษานี้มีวัตถุประสงค์เพื่อค้นหาความชุกที่แท้จริงของโรคความดันโลหิตสูง และประเมินความไม่ตระหนักรู้และการไม่สามารถควบคุมภาวะความดันโลหิตสูงได้ของประชากรวัยผู้ใหญ่และผู้สูงอายุในชุมชนชนบท โดยใช้ข้อมูลทุติยภูมิจากโครงการสำรวจภาวะสุขภาพของประชาชนในชุมชนใน พ.ศ. 2547 ของอำเภอห้วยโก๋น จังหวัดน่าน กลุ่มตัวอย่างในการศึกษานี้คือประชาชนที่มีอายุ 35 ปี ขึ้นไป จำนวน 3,022 คน โดยภาวะความดันโลหิตสูงกำหนดที่ความดันซิสโตลิก มากกว่าหรือเท่ากับ 140 มิลลิเมตรปรอท หรือความดันไดแอสโตลิก มากกว่าหรือเท่ากับ 90 มิลลิเมตรปรอท หรือผู้ที่ได้รับการวินิจฉัยว่าเป็นโรคความดันโลหิตสูงมาก่อน วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา การศึกษาพบว่า ความชุกของภาวะความดันโลหิตสูงของประชากรในชุมชน ร้อยละ 19.2 แต่เมื่อปรับแก้โดยคำนวณรวมกับบุคคลที่ได้รับการวินิจฉัยว่าเป็นโรคความดันโลหิตสูง พบว่าความชุกทั้งหมดเพิ่มขึ้นเป็นร้อยละ 28.3 โดยความชุกเพิ่มขึ้นตามอายุ ในประชาชนที่มีภาวะความดันโลหิตสูงทั้งหมด ร้อยละ 43.9 ขาดความตระหนักรู้หรือไม่ทราบว่ามีภาวะความดันโลหิตสูง ซึ่งพบในวัยผู้ใหญ่มากกว่าผู้สูงอายุ (ร้อยละ 53.2 และ 31.6) และพบผู้ทราบว่าเป็นโรคแต่ไม่ได้รับการรักษาหรือรักษาแต่ควบคุมไม่ได้ ร้อยละ 42.7 โดยพบในวัยสูงอายุมากกว่าวัยผู้ใหญ่ (ร้อยละ 49.4 และ 36.5) จากข้อค้นพบครั้งนี้ ภาวะความดันโลหิตสูงยังมีความชุกสูงในชุมชน แต่ความตระหนักรู้และการควบคุมความดันโลหิต ยังอยู่ในระดับค่อนข้างต่ำ ดังนั้นโปรแกรมที่เหมาะสม ในการคัดกรอง การให้สุขศึกษา เพื่อป้องกันและรักษาภาวะความดันโลหิตสูงในชุมชน ควรได้รับการพัฒนาอย่างเร่งด่วน

คำสำคัญ: ภาวะความดันโลหิตสูง, ความชุก, ความตระหนักรู้, การควบคุม