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The Lived Experience of Rural Thai Older Adults with Poorly Controlled Hypertension

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By

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The Lived Experience of Rural Thai Older Adults with Poorly Controlled Hypertension

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In the economically poor, northeast region of Thailand, many elderly adults with hypertension have difficulty achieving optimal blood pressure control. Factors such as deteriorating health, health beliefs and attitudes, low socioeconomic status, and low educational background may contribute to poor control of hypertension. Although nursing studies in Thailand have explored hypertension management among Thai patients in general, few studies have specifically examined the phenomenon of poorly controlled hypertension among rural older Thais with hypertension. Therefore, the aim of this study was to explore the lived experience of rural Thai older adults with poorly controlled hypertension. Purposive sampling was used to select 20 subjects who were aged 60 years and older and who received services at two health centers in Thailand. Data were gathered using semi-structured interviews. All interviews were analyzed following Giorgi's phenomenological methodology. The techniques of member checking, an inquiry audit, and an audit trail were employed to achieve trustworthiness of the findings.

Most participants were female and ranged in ages from 60 to 74 years. The findings revealed four theme clusters: perception of hypertension, emotional representations, economic difficulties, and folkways for living with high blood pressure. The theme cluster representing the perception of hypertension included three common themes: healthy due to silent symptoms, living as usual, and focusing on medication use.

In the theme cluster of emotional representations, the first common theme was fear and worry, and the second common theme was anger. The theme cluster representing economic difficulties had two common themes: low income and debt. The fourth theme cluster, folkways for living with high blood pressure, had two common themes. The first folkways common theme was physical activities in terms of farming, gardening, housework, and light walking. The second folkways common theme was cuisine and seasoning from the *Isaan* (northeast) region of Thailand.

The findings of this study will help nurses to better understand the culture and daily living activities of rural elderly Thais with hypertension. Armed with this new understanding, nurses can modify their practice to fit older adults' lifestyles. Nurses can use the findings to develop specific interventions for older adults with hypertension.

This dissertation by Atiporn Samranbua fulfills the dissertation requirement for the doctoral degree in Nursing approved by Cindy Grandjean, PhD, M.G.A, CRNP, as Director, and by Janice Agazio, PhD, CRNP, and Carole Collins, PhD, PHCNS-BC, as Readers.

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CHAPTER I

INTRODUCTION AND BACKGROUND

Presently, the number of older adults in Thailand continues to increase. In 2010, the older population numbered about 8 million individuals, or 11.9% of the entire Thai population; in 2030, the elderly population will reach 17.16 million, or one fourth of the total Thai population (Foundation of Thai Gerontology Research and Development Institute, 2009). The causes of this increase are greater life expectancy and a reduced mortality rate. In the past, Thailand had a high fertility rate, but currently the rate is reduced. Additionally, the elderly dependency ratio has increased. In 2005, the ratio was 100 workers to 16 older persons; in 2025, the ratio will increase to approximately 100 workers to 31–32 older persons (Bureau of Empowerment for Older Persons, 2007).

Increasing age causes changes to the body, such as changes in physical appearance, less lung capacity, loss of contractile strength of the heart muscle, decreased stomach motility, reduced intestinal blood flow, less bladder capacity, and reduced bone mass and bone mineral density (Eliopoulos, 2010). Older people may also face deteriorating health, which makes them vulnerable to many diseases, especially hypertension. Among Thai adults aged 60 years and older, hypertension is the second most frequently occurring chronic disease (27.3%) and will increase in the future (Institute of Geriatric Medicine, 2006). In 2008, hypertension was the most common disease that caused hospital admission for older Thai people (Foundation of Thai Gerontology Research and Development Institute, 2009). Additionally, the rates of in-

patient hypertension per 100,000 of the Thai population increased from 778.1 in 2007 to 860.5 in 2008 and 981.48 in 2009 (Bureau of Policy and Strategy, 2009). Hypertension has a pronounced impact on older adults' health and is a primary disease that causes stroke, cardiovascular disease, and renal failure (Ostchega, Dillon, Hughes, Carroll, & Yoon, 2007). Moreover, hypertension can impact patients' quality of life, limit their daily activities, cause psychosocial problems (e.g., anxiety, depression, and stress), and increase health care costs (Centers for Disease Control and Prevention, 2007b; Vierck & Hodges, 2003).

According to Aekplakorn et al. (2008), numerous Thai patients with hypertension—especially hypertensive patients living in the rural populations of the economically poor, northeastern regions of Thailand—are unaware of lifestyle modifications that can control high blood pressure. Some older people have an increased difficulty achieving optimal blood pressure control because of various factors, such as deteriorating health, limitations in physical activity, health beliefs and attitudes, low socioeconomic status, financial difficulties, low educational background, low skills in managing illness, a less healthy diet, smoking, less regular exercise, no strategies to release stress, loss of regular treatment, and a lack of seeking health knowledge. Using monosodium glutamate and consuming alcohol are also common eating behaviors among Thai older persons with hypertension. These numerous factors may contribute to poor control of hypertension (Jiriyasin, 2000; Kumjainuk, 2005; Kunjeat, 1999; Sarat, 2000; Tabthong, 2005; Institute of Geriatric Medicine, 2006).

In Thailand, numerous nursing studies have explored variables concerning how to

manage hypertension, prevent complications of hypertension, and promote physical activities among hypertensive adults aged 60 years and older. The studies' variables consisted of self-care behaviors, self-efficacy, stress management, health care demand, administration of antihypertensive medication, diet control, regular treatment, empowerment, health education, social support, risk behaviors, home healthcare monitoring, self-monitoring, and goal setting (Khui-apai, 2005; Kruesathit, 1999; Kumjainuk, 2005; Mahasakphun, 1996; Makpradab, 2001; Nugate, 1998; Santiwes, 2001; Srikan, 2003; Tabthong, 2005).

However, the studies were quantitative research, which has limitations in research design. The studies cannot provide comprehensive outcomes to respond to a number of important questions, such as the following inquiries: How do you feel when your blood pressure is poorly controlled? How did your life change after your blood pressure became poorly controlled? How do you deal with this problem? What do you feel when you cannot maintain healthy behaviors? Holistic aspects of humans need adequate explanation through seeking in-depth information by means of qualitative research.

Although hypertension is a common disease that causes hospital admission among older persons, qualitative nursing research focusing on rural older adults with hypertension is not widely performed in Thailand. Only a few qualitative investigations have emphasized studying hypertensive patients in Thailand. For instance, a grounded theory study explored accepting and adjusting to the chronicity of hypertension among Thai people who lived in nonmunicipal areas (Kirdphon, 2003). Another grounded theory study investigated the meaning of hypertension as perceived by participants who lived in

Bangkok, Thailand's largest city (Panpakdee, 1999). The findings of both studies described the processes of accepting and adjusting to the chronic condition of hypertension, the processes of hypertension management, the meaning of hypertension, and a model of self-managing hypertension.

However, the specific population of rural Thai older adults with hypertension has not been emphasized in recent studies, and the phenomenon for poorly controlled hypertension has not been reflected. Thus, the present study aimed to fill this gap in the literature by exploring the perceptions of rural Thai older persons aged 60 years and older while they deal with poorly controlled hypertension. Their feelings, beliefs, reasons, and perceptions are presented through their narratives describing their experiences. A phenomenological method is an appropriate research approach to describe the lived experiences, the distinctive personalities, and the interactions between two persons or between persons and their environment. The phenomenological method reflects people's lives and emphasizes descriptions of the human experience. The entire structure of the lived experience is revealed through the participants' perceptions. The findings of a phenomenological study provide knowledge of reality from the ideal contents of consciousness. Everyday, in-depth information is a valuable tool to reflect the participants' daily activities beyond the changing aspects of society, economy, and environment. The knowledge gained from the present study will assist health providers to truly understand the patients individually. Furthermore, the study's findings will support the development of appropriate healthcare services for rural Thai older adults with poorly controlled hypertension.

Statement of Problem

Hypertension is a common disease among older Thai people, and most of them are admitted to hospitals due to complications of the disease. In Thailand, the rate of in-patient hypertension has regularly increased each year (Bureau of Policy and Strategy, 2009; Foundation of Thai Gerontology Research and Development Institute, 2009; Institute of Geriatric Medicine, 2006). Additionally, numerous Thai patients with hypertension have not achieved optimal blood pressure control, especially hypertensive patients living in the economically poor, northeastern regions of Thailand (Aekplakorn, et al., 2008). Some hypertensive patients also lack adequate attention to controlling their blood pressure (Institute of Geriatric Medicine, 2006).

Purpose of the Study

The purpose of the present study was to explore the lived experience of rural Thai older adults with poorly controlled hypertension.

Research Question

The following research question guided the present study: What is the lived experience of rural Thai older adults with poorly controlled hypertension?

Conceptual Orientation

Qualitative research places emphasis on detailing a person or a place. Qualitative researchers conduct their studies in participants' homes or offices to be a part of the actual daily experiences of their study participants. To generate the value outcomes, qualitative researchers use many strategies, including open-ended observations and interviews, documents, sounds, e-mails, scrapbooks, and other emerging forms. The

process of qualitative research may change during the collection of data, especially in the areas of research questions or data-collection processes. The results of qualitative research show social phenomena holistically. If a qualitative study is broad, complex, and encompasses the narrative, its qualitative research methodology is improved (Creswell, 2003).

Qualitative research methods mostly have philosophical underpinnings that reveal three viewpoints: (1) beliefs; (2) the interaction between two persons; and (3) the nature of the environment, meaning, and assumptions about natural human beings. Findings of qualitative studies are created from the following assumptions: (a) experience is represented by meaning with social, linguistic, and cultural patterns; (b) the individual's experience and/or the groups' experience are explained and valued; (c) interacting with subjects does not cause the suspension of objectivity; (d) an interpretation of certain phenomenon may be true for only some individuals, and truth depends on certain variable conditions; (e) individuals are portrayed within an open perspective; (f) individuals, as well as specific groups of individuals, vary widely in their history, present and future, and their perceptions. In addition, qualitative research is a philosophical approach covering a variety of strategies for collecting and analyzing data (Munhall, 2007).

Qualitative research employs five main approaches: narrative, grounded theory, ethnography, case study, and phenomenology (Creswell, 2003). The phenomenological approach was conducted for the present study. Phenomenology is both a qualitative method and a philosophy used to perceive real experiences. The intent of phenomenology is to illustrate both the nature of the meaning and the being of a lived experience in way

of life. The lived experience explains what is true or real in an individual's life. In addition, the lived experience reflects meaning to the person's perception of a particular situation through the window of language. The individual's language contains information describing and uncovering the essence of being. The foundation of phenomenological inquiry is based on a holistic study of the human experience. Phenomenological studies address human life experiences in various areas, such as happiness, fear, and caring (Bailey, 1997; Broussard, 2006; Speziale & Carpenter, 2007).

Phenomenology has two major traditions: a descriptive approach and an interpretive approach (Lincoln & Guba, 1985). The present study followed the descriptive approach established by Husserl. Husserl's philosophy consists of three main aspects: intentionality, essences, and phenomenological reduction. *Essences* represent concepts relevant to the truth or meaning of something. The concepts display common understanding of the particular situation being investigated (Speziale & Carpenter, 2007). Essences represent perception of the human world or of consciousness. Phenomenological research presents a systematic view of mental content. The contents are symbols representing the world manipulated in the mind, and the manipulations conduct the external world into internal consciousness through cognitive process in order to view an individual's understanding, intentions, knowledge, and actions. The mind is the only source of interpretation and meaning. According to Husserlian phenomenology, the mind and the body are split, a separation that is sometimes called "Cartesian duality." The body is assumed to be a container for the mind. Therefore, the ultimate structures (essences) of consciousness can be studied by separation from the body (Koch, 1995).

Intentionality is the way the mind consciously directs its thought toward an object (Priest, 2002). In Husserlian phenomenology, experience reveals consciousness (Cohen & Omery, 1994). Knowledge of reality should be generated by conscious awareness (Koch, 1995). *Phenomenological reduction* is the process of facilitating transcendence or returning to a primary mindfulness about the phenomenon. This process goes back to the phenomenon itself in order to uncover the individual's original awareness without conceptual presuppositions. To see the real world, the reductive procedure is performed as freely as possible from preconceived ideas. Phenomenological reduction has interchangeable terms with similar meanings, such as "eidetic reduction," "bracketing," and "epochè." For instance, bracketing is a way to create questions without interference from one's natural attitude to the world. The individual's attitude is kept in brackets in order to suspend presuppositions, beliefs, assumptions, bias, and theorizing regarding the phenomenon. Similarly, epochè means to see a fresh viewpoint or an experience for itself by eliminating one's judgment, common beliefs, and presupposition (Priest, 2002; Speziale & Carpenter, 2007).

Based on Husserl's philosophy, phenomenological inquiry is a valuable method to investigate all components of a person. Lived experience is important because truths regarding the reality of the person are displayed through the everyday world of that person. Understanding patients' individual lived experiences provides direction and guidance for nurses to care for their patients' mind, body, and spirit (Speziale & Carpenter, 2007).

Significance of the Study

The qualitative findings of the current phenomenological study are valuable to nursing. The findings enhance the background knowledge needed to understand the phenomenon of the lived experience of rural Thai older adults with poorly controlled hypertension. The information from the study's findings may also assist health providers to understand the daily living behavior patterns of rural Thai older adults and, in turn, to modify healthcare practices to fit older persons' lifestyles. To create appropriate interventions, researchers and health providers must fully understand their clients' problems. Therefore, the findings from the current study may contribute positively to health providers' development of effective interventions and appropriate responses to the health problems of older adults living in Thailand's rural areas.

Based on findings from previous studies, barriers to blood pressure control among Thai patients with hypertension include limitations in physical activity, attitudes and health beliefs, and low socioeconomic status, which restrict the patients' ability to successfully control hypertension (Jiriyasin, 2000; Kumjainuk, 2005; Kunjeat, 1999; Sarat, 2000; Tabthong, 2005; Institute of Geriatric Medicine, 2006). In the current study, these three barriers were explored and described through comprehensive, in-depth information collected by means of Husserl's philosophy and phenomenological approach. The study's findings can enhance care providers' understanding of rural Thai older patients' reluctance to modify their lifestyle in order to control their hypertension.

Assumptions of the Study

1. Results of the study accurately reflect participants' experience.
2. Participants of the study are persons who live in rural regions.

Definitions

The following paragraphs provide definitions of the terms “older adults,” “hypertension,” and “poorly controlled hypertension,” which were used in the current study's examination of the lived experience of rural Thai older adults with poorly controlled hypertension. Each term is identified below with both a theoretical and an operational definition.

Older Adults

Theoretical definition. Older adults are generally identified as individuals aged 65 years and older. Currently, older adults are categorized into three age groups. The first is the young-old group aged between 60 and 74 years old. The second is the old-old group aged between 75 and 100 years old. The third group is the centenarians who are older than 100 years old. In addition, older adults may be classified into four categories. The first category is the young-old group, which refers to persons ranging in age from 60 to 74 years old. The second category is the middle-old group, representing persons who are 75 to 84 years old. The third category is the old-old group, representing persons aged 85 to 100 years old. The fourth category is the group of persons older than 100 years old (Eliopoulos, 2010).

Operational definition. In the present study, the term “older adults” referred to 60-year-old persons or older. The older adults lived in rural areas located in the northeastern

regions of Thailand.

Hypertension

Theoretical definition. Hypertension is a condition in which the systolic blood pressure value is greater than 140 mmHg or the diastolic blood pressure value is greater than 90 mmHg (Cunningham, 2005). In addition, the National High Blood Pressure Education Program developed the *Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure*, also known as the “JNC 7,” which identifies three categories of the levels of hypertensive blood pressure: prehypertension, Stage 1 hypertension, and Stage 2 hypertension.

Prehypertension presents systolic blood pressure (SBP) values from 120 to 139 mmHg or diastolic blood pressure (DBP) values between 80 and 89 mmHg. Stage 1 hypertension is diagnosed for an individual whose SBP ranges between 140 and 159 mmHg or whose DBP ranges between 90 and 99 mmHg. Stage 2 hypertension is the highest form of high blood pressure in which the SBP is 160 mmHg and higher and the DBP is 100 mmHg and higher (Chobanian et al., 2003).

Operational definition. In the present study, hypertension was operationally defined by blood pressure values. The study participants were diagnosed to be hypertensive when their SBP values were equal to or greater than 140 mmHg and/or their DBP values were equal to or greater than 90 mmHg. Their blood pressure values were determined from the average of blood pressure measurements. Each measurement was conducted at least 2 hours apart.

Poorly Controlled Hypertension

Theoretical definition. In previous studies, researchers provide a range of definitions for poorly controlled hypertension. For example, Swaminathan et al. (2008) defined poorly controlled hypertension as an SBP greater than 140 mmHg and/or a DBP greater than 80 mmHg for patients who received standard treatment for hypertension. Takase et al. (2008) defined poorly controlled hypertension as an SBP greater than or equal to 140 mmHg and/or a DBP greater than or equal to 90 mmHg after an observational period for at least 8 weeks. In another study, severe uncontrolled hypertension was determined for patients with an SBP of 180 mmHg or higher and a DBP of 110 mmHg or higher. The researchers suggested that these readings should be presented on at least two occasions in the emergency department (Tiburt, Dy, Week, Klag, & Young, 2008). The authors of the JNC 7 determined that an effective level of blood pressure control should be an SBP of 140 mmHg or less and a DBP of 90 mmHg or less after adopting lifestyle modifications or using antihypertensive drug therapy for at least one month (Chobanian, et al., 2003). Furthermore, as suggested in the JNC 7, patients with hypertension and renal disease or diabetes should strive to achieve a blood pressure level of 130/80 mmHg or lower (Chobanian, et al., 2003).

Operational definition. In the present study, and based on blood pressure measurements recommended by the JNC 7 (Chobanian, et al., 2003), poorly controlled hypertension was operationally defined as a condition in which an SBP was equal to or greater than 140 mmHg and/or a DBP was equal to or greater than 90 mmHg. For study participants with hypertension and diabetes or renal disease, poorly controlled

hypertension referred to an SBP greater than 130/80 mmHg. According to recommendations from the JNC 7, blood pressure values were measured after study participants had adopted lifestyle modifications or used antihypertensive drug therapy for at least one month. The current study participants' blood-pressure values were based on the average measurement of two or more accurate screenings that were conducted and recorded at least 2 hours apart.

Summary

Hypertension is a common disease among Thai adults aged 60 years and older (Institute of Geriatric Medicine, 2006). In 2008, the majority of older Thai patients who were admitted in public hospitals were diagnosed with hypertension (Foundation of Thai Gerontology Research and Development Institute, 2009). Hypertension threatens patients' quality of life, limits patients' activities of daily living, induces patients' psychosocial problems, and increases overall healthcare costs. Efforts to control high blood pressure among rural Thai older patients with hypertension are often prohibited by several barriers such as patients' limitations in physical activity, health beliefs and attitudes, and low socioeconomic status. These barriers need adequate explanations and increased understanding through comprehensive, in-depth information provided by qualitative research.

Phenomenological inquiry is a worthy method to investigate all components of a person, because truths regarding the reality of the person are displayed through the everyday world of that person. Therefore, the present study used the phenomenological approach to explore the lived experience of rural Thai older adults with poorly controlled

hypertension. The study's findings not only provide health providers with an increased understanding about rural Thai older patients who suffer from hypertension but also offer direction and guidance for developing interventions and care practices that specifically meet the healthcare needs of patients' minds, bodies, and spirits.

CHAPTER II

LITERATURE REVIEW

In reports of epidemiological studies, hypertension, especially isolate systolic hypertension, is a common disease associated with the aging process. Approximately two thirds of people over the age of 60 years old have isolate systolic hypertension (Pannarale, 2008). Elevated levels of catecholamine in old age affect vasoconstriction and vasodilatation. Receptor sensitivity in aging is a further response to vasoconstrictors than vasodilators. In addition, arterial stiffness, arterial wall thickness, and endothelial dysfunction influence increasing vascular resistance among people over 60 years of age (Vierck & Hodges, 2003). Older persons with high systolic blood pressure and high pulse pressure also have a high risk for cardiovascular morbidity and mortality; when the systolic or diastolic blood pressure in older persons becomes higher, their rates of cardiovascular morbidity and mortality develop higher (Aronow, 2008). Rates of cardiovascular morbidity and mortality can be reduced by blood pressure control.

However, blood pressure control by patients is often inadequate, although most hypertensive patients can receive treatments from either hospitals or primary care facilities. Several trials provided guidelines for hypertension management, but blood pressure control among older adults remains poor (Sirkin & Rosner, 2009). The lack of adequate blood pressure control may be caused by poor compliance or reluctance to change treatment (Dean, Kerry, Cappuccio, & Oakeshott, 2007). Therefore, it is important to investigate and understand poorly controlled hypertension, especially among

older adults, in order to assist health providers in developing strategies that help patients control hypertension.

The intent of this literature review is to examine the following areas: (a) hypertension care and management, (b) hypertensive Thai patients and health behaviors, and (c) way of rural life and Thai older adults. The literature review provides information that supports the purpose of the present study, which was to explore the lived experience of rural Thai adults, aged 60 years and older, with poorly controlled hypertension.

Hypertension Care and Management

Hypertension management mostly focuses on the reduction of blood pressure. As demonstrated in findings from randomized controlled trials, the reduction of blood pressure is a cost-effective strategy for decreasing the risk of strokes, heart attacks, and mortality (Falaschetti, Chaudhury, Mindell, & Poulter, 2009; Pannarale, 2008). This section presents current knowledge regarding the classifications of blood pressure, blood pressure monitoring, blood pressure control, and antihypertensive therapy.

Classifications of Blood Pressure

The Seventh Report of the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) identifies high blood pressure categories for adults who are 18 years or older. The classifications are based upon the average of blood pressure measurements conducted in a health provider's office. Generally, normal blood pressure indicates a systolic blood pressure (SBP) of 120 mmHg and a diastolic blood pressure (DBP) of 80 mmHg. Prehypertension was added as a new category in the JNC 7 and refers to SBP valued between 120 and 139 mmHg and/or DBP

valued between 80 and 89 mmHg. In Stage 1 hypertension, SBP values range from 140 to 159 mmHg or DBP values range from 90 to 99 mmHg. Stage 2 and Stage 3 hypertension in the JNC6 were combined as Stage 2 hypertension in the JNC 7. In Stage 2, an SBP is equal to or greater than 160 mmHg or a DBP is equal to or greater than 100 mmHg (Chobanian, et al., 2003). Table 1 lists the JNC 7 classifications of blood pressure and corresponding measurements.

Table 1. Classifications of Blood Pressure

Blood Pressure Classification	Systolic Blood Pressure	Diastolic Blood Pressure
Normal blood pressure	<120 mmHg	and < 80 mmHg
Prehypertension	120-139 mmHg	or 80–89 mmHg
Stage 1 hypertension	140-159 mmHg	or 90–99 mmHg
Stage 2 hypertension	≥160 mmHg	or ≥ 100 mmHg

Note. Source: Chobanian, A., V., Bakris, G. L., Black, H. R., Cushman, W. C., Green, L. A., Izzo, J. L., et al. (2003). The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: The JNC 7 report. *Journal of the American Medical Association*, 289, 2560-2572.

Blood Pressure Monitoring

Blood pressure measurement is used in many aspects of healthcare, such as diagnosis, treatment, epidemiology, management, and research of hypertension (Vilaplana, 2006). To obtain an accurate blood pressure measurement, appropriate instruments and effective techniques must be used.

Appropriate Instruments

Instruments should be calibrated and validated, especially automated devices. Validation of the devices should follow standardized protocols, and values obtained from automated devices should be compared with mercury sphygmomanometer values to check the accuracy of the measurement (Chobanian, et al., 2003; Vilaplana, 2006).

Cuff selection is an issue of concern because using the wrong cuff can give an erroneous blood pressure reading. A small cuff will produce higher values, and a large cuff will produce lower values (Cork, 2007; Vilaplana, 2006). The length and width of a cuff should be considered for choosing the correct cuff (Cork, 2007). An appropriately sized cuff should encircle at least 80% of the patient's arm (Chobanian, et al., 2003). However, in a study conducted by Veiga et al. (2003), health providers were found to be insufficiently attentive to the selection of the cuff: Only 7% of the providers who were enrolled in the study checked cuff size.

Accurate Measurement

In addition to using appropriate instruments, effective techniques must be used to obtain an accurate blood pressure measurement. In the health provider's office, the measurement should be performed after the patient has rested for 5 minutes. The patient's arm should be supported at heart level, and the patient's feet must be placed on the floor. Initially, the measurement should be conducted on both arms. The blood pressure values for investigation should be read from a second measurement on the arm with the higher value. In elderly adults, the appropriate position for blood pressure monitoring should be upright while in a sitting position. Patients should not drink caffeine or smoke 30 minutes

before a blood pressure measurement. To diagnose hypertension, patients are measured at least two or more times, with each measurement conducted at least 2 hours apart (Aronow, 2008; Chobanian, et al., 2003; Vilaplana, 2006).

Blood Pressure Control

High blood pressure is a modifiable risk factor for heart disease, stroke, and kidney disease (Ostchega, et al., 2007). Controlling high blood pressure can decrease disability and death from these diseases. Controlling hypertension with antihypertensive drugs reduces the incidence of all stroke, death from heart failure by 64%, death from cardiovascular causes by 23%, nonfatal myocardial infarction by 33%, and all cardiovascular complications by 32% (Aronow, 2008; J. G. Wang & Staessen, 2001).

As reported in the JNC 7, in order to decrease the risk of cardiovascular disease, SBP/DBP should be lower than 140/90 mmHg, especially in adults aged 50 and older (Chobanian, et al., 2003). Hypertensive patients who have either diabetes or kidney diseases should have SBP/DBP lower than 130/80 mmHg (Chobanian, et al., 2003). In its 2004 *Guidelines for Management of Hypertension*, the British Hypertension Society also provides optimal targets for blood pressure to reduce cardiovascular mortality. According to data presented in the guidelines, blood pressure of 139/83 mmHg is recommended as appropriate to reduce the risk of cardiovascular disease. While hypertensive patients receive treatment, their minimal target for controlling their blood pressure should be lower than 150/90 mmHg (Williams et al., 2004).

For elderly persons with isolated systolic hypertension, the recommended treatment goal is SBP of 150 to 160 mmHg or less (Cushman, 1999). Several randomized

controlled trials defined isolated systolic hypertension as SBP of 160 mmHg or more (Cushman, 1999). According to the Elderly Program trial, isolated systolic hypertension is defined as an SBP higher than 160 mmHg and a DBP lower than 90 mmHg (Kannel, 2003). Isolated systolic hypertension continually rises with age, and it is a main predictor of mortality among the elderly population, especially elderly men. Men aged 65 to 84 years with SBP of 180 mmHg or greater had a higher mortality rate compared to older women (Satish, Freeman, Ray, & Goodwin, 2001). In addition to considering blood pressure levels, other risk factors should be considered for hypertension management, such as particular clinical conditions, target organ damage, and risk factors for cardiovascular disease. Hypertensive patients who are low-risk and medium-risk should have SBP/DBP levels lower than 150/90 mmHg, while high-risk hypertensive patients should have blood pressure levels at 130/80 mmHg or lower (World Health Organization & International Society of Hypertension Writing Group, 2003).

Although high blood pressure (HBP) can be detected and controlled by treatment, managing HBP is not as easily controlled as simply maintaining SBP <140 mmHg and DBP <90 mmHg (Centers for Disease Control and Prevention, 2007a). Evidence suggests that several variables influence both the control of HBP and the awareness rate of HBP: age, gender, race/ethnicity, socioeconomic factors, healthcare access, and risk factors (e.g., cardiovascular disease, diabetes mellitus, renal disease, and overweightness). Adults aged 60 to 69 years controlled their HBP more effectively than adults aged 70 and older. Women also controlled hypertension more effectively. Mexican-Americans were less likely to engage in hypertension control than non-Hispanic whites. The patients who

received regular blood pressure monitoring within 6 months had greater control of hypertension, greater awareness of hypertension, and improved seeking of treatment for hypertension. Hypertensive patients who had a history of diabetes mellitus or chronic renal disease did not successfully control their HBP (Osthega, et al., 2007).

Sometimes, poorly controlled hypertension in older adults is caused by a poor selection of drug classes and an inappropriate use of combination drug therapy. In a study conducted by Donald (2005), most hypertensive older persons (62%) received only one antihypertensive medication. Donald (2005) also reported that, although strong evidence demonstrates a thiazide diuretic is the most cost-effective drug to reduce HBP, only one third of the participants in his study received a thiazide diuretic.

Antihypertensive Therapy

Controlling HBP can involve the use of lifestyle modifications and utilization antihypertensive medications (Centers for Disease Control and Prevention, 2007a). Lifestyle changes that can help control hypertension include the utilization of the Dietary Approaches to Stop Hypertension, high dietary potassium intake, a low-sodium diet, physical activities, weight reduction, and moderation of alcohol consumption. Pharmacological treatment is also an effective method to reduce the complications of hypertension. Several groups of medications are employed to control high blood pressure, including thiazide-type diuretics, beta-blockers, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, and calcium channel blockers (Chobanian, et al., 2003; World Health Organization & International Society of Hypertension Writing Group, 2003). To control hypertension, mostly older persons require at least two

hypertensive medications. Mostly, physicians start their hypertensive treatment with a thiazide diuretic (Aronow, 2008).

Nonpharmacologic Interventions to Control Blood Pressure

Findings from numerous studies in the literature demonstrate that a variety of nonpharmacologic interventions are successful in controlling hypertension. Most interventions involve lifestyle modifications, such as adopting a healthy diet, increasing physical activities, weight reduction, and limiting alcohol consumption. Other nonpharmacologic interventions may also include health education programs, unit-of-use drug packaging, aromatherapy, and self-measurement of blood pressure.

The Dietary Approaches to Stop Hypertension eating plan. In 1993, a trial for the Dietary Approaches to Stop Hypertension (DASH) program was initiated to assess the effects of the eating plan on reduction of blood pressure (Craddick et al., 2003). The DASH eating plan focuses on fruits, vegetables, and low-fat dairy products without a content of saturated fat. Based on empirical evidence, the DASH eating plan causes a reduction of SBP by 8–14 mmHg (Chobanian et al., 2003). In a study by Azadbakht, Mirmiran, Esmailzadeh, Azizi, and Azizi (2005), participants in a DASH group ate high fiber diets and low fat foods such vegetables, yogurt, low-fat milk, and whole grains. Each day, participants received calories lower than their caloric needs, about 500 kcal, and 2,400 mg of sodium. They received higher amounts of calcium, potassium, and magnesium than a regular meal provides. In the study's results, participants had the reduction of SBP (–12 and –11mmHg) and DBP (–6 and –7mmHg), increasing HDL by 7 and 10 mg/dl, decreasing triglyceride by 14 and 18 mg/dl, the reduction of blood glucose

by 8 and 15 mg/dl, and weight lost about 15 and 16 kg.

The PREMIER clinical trial conducted the DASH diet as an intervention. Participants who attended the DASH diet intervention aimed for an intake of 9–12 servings of fruits and vegetables per day and 2–3 servings of low-fat dairy products per day. They also reduced 7% of energy from their intake of saturated fat and 25% of energy from their intake of total fat. The participants received instruction and counseling on the DASH diet. Their intake of the eating plan program was recorded daily. The participants also had four individual counseling sessions and 14 group meetings during the trial's initial 6-month period. After following the initial treatment, the participants' mean (*SD*) of SBP/DBP was reduced by 11.1 (9.9)/6.4(6.8) mmHg from baseline (Appel et al., 2003).

The subsequent trial conducted by Craddick et al. (2003) used the DASH dietary pattern to reduce the participants' high blood pressure. The participants' intake of the DASH diet was higher than the average intake of the U.S. population. Because the DASH diet contains fruits, vegetables, and low-fat dairy products, the dietary pattern was effective in reducing the participants' blood pressure (11.4/5.5 mmHg), especially in patients with Stage 1 hypertension. Furthermore, the DASH diet in Craddick et al.'s study was combined with three sodium levels. The highest level of sodium intake was greater than the average U.S. consumption. The intermediate level of sodium intake was equal to the upper limit of U.S. recommendations. The lowest sodium intake was a level beneficial for reducing blood pressure. The findings showed that the participants' blood pressure decreased after eating the DASH diet with each of the three sodium levels. The

DASH diet consumption and the lowest level of sodium intake were the most effective in reducing the participants' high blood pressure.

Sacks et al. (2001) tested the effectiveness of combining a DASH diet with a sodium control diet to reduce blood pressure. Some participant groups consumed a DASH diet with three different levels of sodium intake: 150 mmol per day in the highest level, 100 mmol per day in the medium level, and 50 mmol per day in the lowest level. The consumption of a DASH diet with the lowest level of sodium was effective in reducing the SBP in hypertensive participants (-11.5 mmHg) and in participants without hypertension (7.1 mmHg). The SBP and DBP levels of the participants who consumed the low-sodium DASH diet were lower than the participants who had only a DASH diet or only a sodium reduction.

Dietary sodium. According to the JNC 7 report, hypertensive patients' daily intake should contain less than 100 mmol of dietary sodium, 6 gram of sodium chloride, or 12.4 gram of sodium. This recommended dietary sodium restriction can decrease SBP by 2–8 mmHg among hypertensive patients (Chobanian, et al., 2003). In a trial study on the prevention of hypertension, researchers recruited overweight adults to attend a comprehensive education and counseling session. The researchers advised how to condense sodium consumption for the participants. The incidence of hypertension among the participants was reduced 18% ($p < 0.048$) when they participated in the program. The reduction of their SBP was statistically significant (2.9 mmHg at 6 months, 2.0 mmHg at 18 months, and 1.3 mmHg at 36 months), after they were compared with overweight adults who received usual care (Kumanyika et al., 2005).

He, Whelton, Appel, Charleston, and Klag (2000) found that sodium reduction affected the long-term incidence of hypertension among adults aged 30 to 54 years old. Over the 7 years of follow-up, the incidence of hypertension in the control group (32.9%) was higher than the sodium-reduction group (22.4%). After adjusting for some variables such as baseline physical activity, knowledge background, body weight, SBP, and the value of sodium excretion in urinary, the sodium-reduction group had reduction of their blood pressure when they were compared with their control groups.

Additional studies have further demonstrated the effectiveness of reducing sodium intake as a means to control high blood pressure, especially among older adults. In a randomized controlled trial, nutritionists advised older adults aged 60 to 80 years and provided core knowledge and behavior skills necessary to achieve sodium reduction. The nutritionists assisted the participants to resolve problems during changing behaviors and helped them to prevent relapse. The study's findings presented that the reduction of sodium intake allowed the participants to stop using antihypertensive drugs by 92.6%. Also, their SBP and DBP levels were less than the baseline by 3 mmHg and 2 mmHg, respectively (Whelton et al., 1998). In a separate study involving older adults with systolic hypertension, a dietary sodium intake of 57 mmol/d reduced SBP by 12 mmHg (Gates, Tanaka, Hiatt, & Seal, 2004).

Physical activity. Patients with high blood pressure should participate in physical activity for at least 30 minutes each day. Based on strong evidence, physical activity can decrease SBP by 4–9 mmHg (Chobanian, et al., 2003). Physical activities used to reduce blood pressure are aerobic exercise, yoga, tai chi, and brisk walking (Khui-apai, 2005;

McCaffrey, Ruknui, Hatthakit, & Kasetsomboon, 2005; Thuree, 2004; S. Whelton, Chin, Xin, & He, 2003; Young, Appel, Jee, & Miller, 1999).

In a randomized controlled trial, Young et al. (1999) examined the effects of an aerobic exercise program on the reduction of blood pressure. The intensity of aerobic exercise was set at moderate-intensity physical activity, and the pattern of exercise started with warm-up exercises in the form of walking, low-impact aerobic dance, and cool-down exercises. The duration of aerobic exercise began at 20 minutes and gradually expanded to 40 minutes. The intervention reduced the study participants' mean values of SBP by 8.4 mmHg and their mean values of DBP by 3.2 mmHg.

The results of Young et al.'s study supported earlier findings from a meta-analysis of randomized, controlled trials. Whelton et al. (2002) reviewed 51 trials that employed aerobic exercise programs to reduce high blood pressure. The length of the exercise programs varied from 3 weeks to 2 years. Most of the programs used the interventions for 12 weeks. Whelton et al. reported that, after taking part in the aerobic exercise programs, the participants' mean values of SBP and DBP were reduced by 3.84 mmHg and 2.58 mmHg, respectively.

Furthermore, Young et al. (1999) included tai chi, an ancient Chinese exercise, in their intervention. Tai chi is made up of slow, smooth, and continuous movements, along with frequent deep breathing and changing of direction that help control balance of movement. The findings from Young et al.'s study showed that tai chi reduced the mean values of SBP and DBP (-7.0 mmHg and -2.4 mmHg, respectively). Khui-apai (2005) also recommended that tai chi should be performed about 60 minutes per session. In a

week, participants should perform tai chi three times, and this activity should continue for 8 weeks. Based on this recommended program, Khui-apai reported that the SPB and DBP in an experimental group of participants who performed tai chi exercise were statistically and significantly lower than before the participants performed the exercise program ($p < .001$).

Yoga involves exercises with slow, relaxed, continuous movements. According to McCaffrey et al. (2005), hypertensive patients participated a yoga program for eight weeks, and in each week they should perform the yoga three times to accomplish reduction of their blood pressure. Each exercise portion must last approximately 63 minutes. During the program, hypertensive patients must perform deep relaxation, pranayama (breath control), and a series of yoga asana postures. In McCaffrey et al.'s study, the following 14 yoga asana postures were used: cobra, corpse, fish, head-to-knee, lotus, mountain, twisting, wheel, yoga mudra, bow, thunderbolt, yoni mudra, joint exercise, and crocodile. McCaffrey et al. found that the yoga program significantly reduced the mean values of blood pressure within the experimental group. The reduction of blood pressure values were 160.89/98.52 mmHg at pretest, 146.48/86.85 mmHg at 2 weeks, 140.96/83.89 mmHg at 4 weeks, 137.67/83.15 mmHg at 6 weeks, and 136.04/81.01 mmHg at 8 weeks.

Brisk walking is categorized as a moderately intense physical activity and is the most common aerobic training modality used in cardiac rehabilitation. Brisk walking is beneficial when performed regularly at least 30 minutes on most or every day (American Heart Association, 2009). A few Thai researchers have investigated brisk walking as an

antihypertensive intervention. For example, Thuree (2004) studied the application of a brisk-walking intervention to decrease values of high blood pressure among hypertensive patients in Thailand. For 6 weeks, study participants walked between 20 and 40 minutes at least three days per week. At the last week of program, the participants in the experimental group had the significant reduction of their mean blood pressure when the mean blood pressure was compared with their baseline. Wongsapan (2006) reported that a walking program for Thai patients with hypertension improved participants' perceptions about self-care behavior. In a study involving another Asian population, Nemoto, Gen-no, Masuki, Okazaki, and Nose (2007) developed a high-intensity interval walking program. The researchers conducted the intervention to reduce blood pressure in older people in Japan. The training program not only reduced the participants' SBP levels but also increased their physical capacities such as higher isometric knee flexion, greater isometric knee extension, enhancing capacity for walking, and cycling.

Weight loss. Weight loss is modified as a reducing blood pressure intervention. Several guidelines recommend using weight loss as a standard nonpharmacologic intervention to prevent and manage hypertension. A reduction of 20 lbs may decrease SBP by 5 to 20 mmHg, and the risk of hypertension and high blood pressure are reduced when there is a reduction of 10 lb can (Chobanian, et al., 2003). In current trials, researchers reported that a weight loss of 8 kg influenced the reduction of SBP by approximately 8.5 mmHg and the reduction of DBP by approximately 6.5 mmHg. The researchers also reported that combining weight loss with an exercise program can reduce participants' SBP and DBP by 12.5 mmHg and 7.9 mmHg, respectively (Bacon,

Sherwood, Hinderliter, & Blumenthal, 2004; Blumenthal et al., 2000). Blumenthal et al. (2000) compared blood pressure levels between participants in a weight-management group and participants in an aerobic-exercise group. Participants in the weight-management group had lower blood pressure (-7/-5 mmHg). Among participants in the aerobic-exercise group, blood pressure levels decreased approximately 4 mmHg in SBP and DBP. To examine blood pressure control among overweight persons, Stevens et al. (2001) recruited 1,191 overweight adults with 30 to 54 years into their weight-loss program. The overweight participants had average of body mass index for 31 kg/m². After the participants' weight loss, they had a mean reduction of 5 mmHg in SBP and 7 mmHg in DBP from baseline. In the intervention group, the reductions-of-risk ratio for hypertension were 0.58, 0.78, and 0.81 at 6, 18, and 36 months, respectively. Concerning the effects of weight loss in a long-term, He et al. (2000) reported that an 18-month weight loss intervention program was significantly effective to decrease the incidence of hypertension among adults aged 30 to 54 years old. Whelton et al. (1998) reported that weight loss through increased physical activity reduced elderly persons' use of antihypertensive drugs by 93.2%.

Limiting alcohol consumption. Alcohol consumption is a risk factor associated with increased blood pressure among populations in several geographic regions, including North America, Europe, and Asia (Xin et al., 2001). Findings from a cross-sectional survey showed that an increase in alcohol intake by 12 g/d influenced an increase of SBP and DBP by 0.47 mmHg and 0.58 mmHg, respectively (Klag et al., 1993). To decrease high blood pressure, the amount of alcohol consumption should be

reduced (Wexler & Aukerman, 2006).

Following a meta-analysis, Xin et al.(2001) reported that after reducing alcohol consumption by 67% from their average intake at baseline, individuals can reduce their SBP and DBP by 3 mmHg and 2 mmHg.

Health education programs. In Thailand, older people often lack knowledge about hypertension management; consequently, researchers have utilized health education programs as an intervention to improve hypertensive patients' knowledge and to change their health behaviors (Laonapakul, 2003; Limcharoen, 2006). The education programs emphasized hypertension disease, self-health care, dietary sodium restriction, stress management, hypertensive medication intake, and exercises. Furthermore, home healthcare visits, group processes, lectures, demonstrations, and practice were common activities used in the health education programs. The duration of the programs was from 8 weeks to 12 weeks. Most of the researchers evaluated their study outcomes including participants' perception, blood pressure, and body mass index (Auppapattawanit, 2007; Kruesathit, 1999; Loawsupo, 2007; Makpradab, 2001; Matsee, 2006; Petmee, 2007; Taraporn, Sunsern, & Wacharasin, 2004; Wanna, 2005).

Other interventions. In addition to health education programs, researchers have investigated other interventions to manage hypertension, such as using unit-of-use drug packaging, aromatherapy, and self-measurement of blood pressure. Petmee (2007) studied the effect of unit-of-use drug packaging on medication compliance and values of blood pressure among Thai older adults with hypertension. After using unit-of-use packaging, the participants had greater medication compliance than hypertensive patients

using conventional packaging. Participants enrolling the intervention had the reduction of systolic blood pressure from their baseline. A study in Thailand used the Dwarf Ylang-Ylang flower as an aromatherapy intervention to manage blood pressure (Jitreepol, 2002). The duration of the study covered 14 weeks, including the baseline period, intervention period, and follow-up period. Jitreepol found that the use of aromatherapy reduced SBP and DBP among participants in the intervention group. Verberk et al. (2007) employed self-monitoring of blood pressure at their participants' homes as a means to reduce hypertensive medication use among 430 hypertensive patients. The researchers reported that participants in the intervention group used less medication than participants in the clinical measurement group (1.47 versus 2.48 drug steps; $P < 0.001$).

Pharmacologic Treatments for High Blood Pressure

In the JNC 7 report, several antihypertensive agents are recommended for patients with high blood pressure, such as a thiazide diuretic, angiotensin-converting enzyme inhibitors, beta-blockers, and other agents. As an antihypertensive agent, a thiazide diuretic is the primary medication recommended for treating hypertension (Chobanian, et al., 2003). In a study conducted by Dickerson and Gibson (2005), a thiazide diuretic, beta-blockers, and calcium channel blockers were used to reduce the rates of mortality, cardiovascular mortality, and strokes in older adults. According to the findings of the double-blind older participants with systolic hypertension, the incidence of all cardiovascular complications were reduced among participants in an active treatment group (583 elderly people) who received the thiazide diuretic chlorthalidone with atenolol and/or reserpine (Perry et al., 2000).

Most patients' high blood pressure is controlled by two or more antihypertensive medications because a single agent, even when used in adequate doses, often fails to reduce blood pressure. Another antihypertensive medication from a different class is used as the second option to achieve an optimal blood pressure (Chobanian, et al., 2003). The appropriate blood pressure for older people should be less than 140/90mmHg. For patients with diabetes mellitus or renal disease, the optimal blood pressure is 130/80 mmHg or less. A thiazide diuretic is also a primary medication for older patients, and it is commonly used for isolated systolic hypertension. The use of a thiazide diuretic results in a negative salt balance reducing arterial stiffness (Pannarale, 2008). However, because thiazide may cause dehydration and orthostatic changes, physicians should check for orthostatic hypotension (Dickerson & Gibson, 2005). The metabolic adverse effects of diuretics are hypokalaemia, hyperuricaemia, dyslipidaemia, and impaired glucose tolerance. Therefore, supplements containing potassium or potassium chloride should be combined with thiazides (Pannarale, 2008).

The effect of antihypertensive drug on decreasing high blood pressure is tested in various studies. For example, Chinese investigators examined the effects of nitrendipine, hydrochlorothiazide, and captopril on blood pressure. In the study, hypertensive treatment consisted of 10–40 mg/day of nitrendipine combined with 12.5–50 mg/day of hydrochlorothiazide or 12.5–50 mg/day of captopril. Another option was nitrendipine (10–40 mg/day) combined with both hydrochlorothiazide (12.5–50 mg/day) and captopril (12.5–50 mg/day). After 2 years follow-up, the participants' SBP and DBP were reduced by 20mmHg and 5 mmHg, respectively (Wang & Staessen, 2001).

Besides diuretic drugs, a dihydropyridine calcium channel-blocker would be more appropriate than an angiotensin-converting enzyme inhibitor or a beta-blocker to reduce blood pressure in older patients (World Health Organization & International Society of Hypertension Writing Group, 2003). To prevent cardiovascular complications and stroke, chlortalidone was more helpful than amlodipine, lisinopril, and doxazosin because chlortalidone has a long duration of action (48–72 hours/25–37 mg doses). Most trials used chlortalidone as an initial treatment for reducing the incidence of cardiovascular diseases (Pannarale, 2008).

Hypertensive Thai Patients and Health Behaviors

Evidence in the literature indicates the health behaviors of hypertensive patients are influenced by knowledge of hypertension, age, gender, types of healthcare services, and the distance between patients' homes and health centers. Several nursing studies conducted in Thailand have investigated the association of these factors on hypertensive Thai patients' health behaviors.

Knowledge of Hypertension

Knowledge of hypertension influences Thai patients' adherence to medication and treatment for hypertension. Patients who have a good level of knowledge about hypertension understand they need continuing treatment even if they do not have any signs or symptoms of hypertension. On the other hand, patients without a knowledge of hypertension believed that no signs and symptoms of hypertension meant they were healthy (Laonapakul, 2003; Limcharoen, 2006). Some Thai patients with hypertension do not know that hypertension is a lifelong disease (Laonapakul, 2003). After receiving

more health information, hypertensive patients in a study conducted by Anusakul (2002) had a greater awareness about their health status and the need for follow-up care. Additionally, Theerakarn (2001) found that hypertensive Thai patients who perceived the severity and risk of hypertension, understood the positive results of self-care, and maintained a positive attitude toward health promotion had good self-health care behaviors. Keomany (2003) suggested that hypertensive patients should be educated regarding the use of medication and the complications of hypertension.

Some Thai nursing researchers conducted health educational activities as interventions in home health care programs. The programs increased self-care behaviors and decreased the mean level of blood pressure among patients with hypertension. The self-care behaviors consisted of taking medication, checking one's health, controlling a salty diet, participating in physical activities, controlling weight, reducing tension, and receiving regular treatment (Auppapattawanit, 2007; Kruesathit, 1999).

In addition to knowledge about hypertension, educational level is associated with Thai patients' health behaviors. For example, Jiriyasin (2000) and Jaitam (2002) reported that educational level was a predictor of health-promoting behavior in Thai patients with hypertension. Hypertensive patients with a low level of education lacked health-promoting behavior. Furthermore, a high prevalence of hypertension was found among older persons with a low level of education, especially among older females (Regidor, Gutiérrez-Fisac, Banegas, Domínguez, & Rodríguez-Artalejo, 2006).

Older Age

Uncontrolled hypertension is mostly found in older hypertensive persons

(Jankowski, Kawecka-Jaszcz, Bilo, & Pajak, 2005). Jankowski et al. reported that age is a predictor of well-controlled hypertension. Researchers have also reported that levels of performance in controlling blood pressure differ among various age groups of older persons. In a study by Obisesan et al. (2008), the first group (age 60 - 79 years) with severe hypertension had poorer controlling blood pressure than the second group (age 80 years or older). Participants aged 70 years and older with a higher stage of hypertension had worse cognitive performance than participants with normal blood pressure.

Older age also often prevents hypertensive patients from fully participating in physical activities to reduce their blood pressure. Kumjainuk (2005) found that, among a study sample of hypertensive Thais, the physical activities of older participants were limited by their physical conditions. Therefore, most of them only participated in physical activities for a period of less than 20–30 minutes per day.

Age is also an important predictor for medication adherence among hypertensive patients (Hekler et al., 2008). As researchers have reported, persons who are very old routinely deal with problems of daily life activity and body morbidity. Some older persons cannot travel by themselves and often need someone to assist them in their daily activities. Rural regions in Thailand lack resources such as public transportation, health centers, and health professionals to assist older persons. Therefore, as researchers found among their study samples, older Thai adults who lived far away from health centers had lower treatment adherence than older Thai persons who lived close to health centers. Long distances between patients' homes and health centers resulted in less continuous treatment or more lost follow-up care among Thai older adults with hypertension

((Limcharoen, 2006; Mahasakphun, 1996).

Sometimes, controlling hypertension does not meet the goal of treatment, which might cause older adults to perceive low benefits of treatments. Also, clinicians might be reluctant to treat older patients due to concerns about the risk of side effects (Lloyd-Jones et al., 2000).

Gender

Jiriyasin (2000) found that among Thai patients with hypertension, being male is a predictor in health promoting behaviors because men have high risk factors related to blood pressure control, such as smoking, alcohol consumption, and stress. Jiriyasin's findings correspond with the results of a later study conducted by King and Crisp (2006), who examined factors related to poor blood pressure control among outpatients in rural and urban areas of South Carolina. King and Crisp concluded that men living in rural areas control their blood pressure poorly not only because they are unable to access adequate healthcare services or medication from a primary care physician, but also because they might have a feeling of invincibility over hypertension.

Types of Health centers

Mahasakphun (1996) found that types of health centers are associated with treatment adherence. Among his study sample, rural Thai older adults preferred to receive health care services from private hospitals or physician clinics because these facilities were more convenient and the patients spent less time waiting to see physicians than at public hospitals. However, the rural Thai older adults preferred meeting physicians at public hospitals rather than going to health centers in their local areas because they felt

they needed treatment from physicians rather than community health providers. They also believed that, compared to community health centers, hospitals had more advanced instruments and higher quality medications.

Way of Rural Life and Thai Older Adults

The rural regions in Thailand are sparsely populated. Most residents living in northeastern Thailand work in agricultural sectors. The characteristics of rural older Thais, the characteristics of rural Thai society, and the spirituality and beliefs of rural Thai people are described in the following paragraphs.

World View of Rural Thai Older Adults

The average number of survival years for Thais is 69.1 years, and the life expectancy of healthy Thais is 57.7 years old for males and 62.4 years old for females. The majority (81.1%) of Thai older people live in rural areas. Approximately 70% of Thai older adults have a low level of education. One third (31.2%) of Thai older adults have never gone to school. Most of the Thai older adults without education are older women who live in rural areas. One third (30.3%) of older people in Thailand have incomes below the national poverty level. In Thailand's population, the number of older females (3.24 million or 55%) is greater than the number of older males (2.73 million) (Institute of Geriatric Medicine, 2006). Most (60%) Thai older females live without their spouses due to divorce or their spouse's death, while a high proportion of Thai older males live with their spouses. Commonly, Thai older males remarry when their wives die or divorce them. Therefore, the majority of Thai older females need support from their children more often than Thai older males (Thanakwang, 2006).

Thai Society

Because most Thai families are nuclear family households, the family network is an important source of informal care for Thai older people (Thanakwang, 2006). According to Komin (1991), people in a rural community are described as “other oriented” (p.128), which refers to rural people’s high inner harmony and contentedness, mutually helpful community values, and high religious faith and spiritual life. Klausner (1998) noted that a hierarchical relationship is an important characteristic of Thai society when identifying duties and responsibilities in differently ranked social positions. The relationship is usually expressed through a “patron-client syndrome” (p. 6) in which patrons provide support, protection, compassion, and benevolence to clients, while the clients are willing to provide respect, loyalty, deference, diffidence, and consideration to the patrons.

Choowattanapakorn (1999) noted that, based on the structure of social relationships in Thailand, children or younger persons are taught to respect persons of higher status, such as older persons, teachers, monks, and parents. Most Thai adult children take care of their parents, based on the expectations of a close relationship and strong family bonds. Consequently, the older persons are not left alone. Adult children are expected to repay their parents because the parents have borne and nurtured them. Choowattanapakorn noted that, in Thailand, children’s role of caring for older parents is called “parent repayment” (p. 97). Most daughters are expected to assume the major role of providing care for older parents because, compared to sons, daughters are viewed as more dependable, better able to provide emotional support, and better caregivers.

However, if there is no daughter, the youngest son is expected to assume the major role of assisting the older parent or parents.

Choowattanapakorn (1999) explained that, starting around 1985, Thai society began to change due to high national economic growth. Because of the boom economy, the demand for labor increased. Young workers from rural villages moved into service and manufacturing sectors in big cities and abroad. Most of the young laborers were agriculturalists who had worked in farms, orchards, and fields. However, because agriculture did not generate sufficient income to support their cost of living, many laborers moved from their rural communities to large cities or abroad. Consequently, numerous older people and young children were left behind in their rural homes. In 1999, Thailand experienced an economic crisis that resulted in vast numbers of laborers losing their jobs, and some of them returned to their rural hometowns (Choowattanapakorn, 1999). Although the unemployed workers were more available to provide care for their parents, they continued to struggle with financial issues related to an agricultural life. Currently, Thailand still faces economic problems. Young laborers in rural villages want jobs in big cities, and they are eager to migrate to urban areas.

Spirituality and Beliefs

Most Thai people, especially elderly persons, participate in religion. Tongprateep (2000) reported that Thai people are more paying attention in Buddhism when they are older. Their lifestyles are influenced by Buddhism because they mostly believe in the law of karma. The law of karma describes the causes and effects of actions. An individual, for example, makes a good thing. This action or the cause contributes positive results to the

present life and will influence on future life as well. Thus, Thais accumulate admirable acts in the present life, which they believe will return positive results to them in the present life and the next life. Moreover, as Tongprateep explained, Thais perform religious practices, such as merit making, observance of moral precepts, and meditation. They believe that good results will return to them when they perform merit making. In addition, merit making helps them to attain Nirvana or freedom from suffering. Observance of moral precepts involves adherence to the following principles: do not steal, do not kill, refrain from sexual misconduct and intoxicants, and do not resort to falsehood.

According to Thai religious practices, meditation is the way to make merit. Persons who practice meditation gain the following benefits: enhancement of sleep well, release of negative emotions (stress and nervousness), improvement of self-awareness, increasing peace in mind, and enhanced physical health. The place for worship and social activities is a Buddhist temple, known in Thai as the “wat.” Going to the temple to “do good” can involve one or more religious merit-making activities (e.g., offering food to the monks, paying respect to the monks, learning Buddha’s dharma from the monks, donating money, and cleaning the temple and surrounding areas). Thai people believe that a “boon” (good karma) they receive from their merit-making activities will be transferred to their spirits. This Buddhist belief shapes how Thais practice their faith. Practicing faith includes prayer and meditation, and the creation of sacred places. Faith practices assist an individual in attaining a peaceful mind (Thinganjana, 2007; Tongprateep, 2000).

Most Thai people believe in supernatural practices, which create psychological relief from frustration and anxiety. Supernatural practices involve an individual's appeal for protection from ghosts, spirits, or gods. Moreover, Thai people have beliefs about fate and fortune. They perceive that illness is a result of fate or bad luck (Disayavanish & Disayavanish, 1998). The law of karma is used to explain both cultural beliefs and illnesses. The idea of karma can lead to hope, but it also can be used to blame individuals. Thai people believe illnesses result from bad karma in the present life or a past life. People expect a better life by doing good karma (Thinganjana, 2007). Thais also believe that good health is the result of equilibrium among earth, water, wind, and fire, which are traditionally believed to be the four elements that form the human body. When the four elements are imbalanced, illness will occur (Kapur-Fic, 1998).

Summary

This chapter presented an overview of the body of work undertaken to explain the way of rural life among Thai older adults, factors associated with hypertensive Thai patients' health behaviors, and hypertension care and management. This literature review described daily life among rural Thai older adults in order to enhance understanding of contexts in rural regions. Factors affecting health behaviors in Thai patients with hypertension are also explained in this literature review. Moreover, nonpharmacologic strategies to manage hypertension such as using the DASH diet, reducing sodium intake, participating in physical activities, losing weight, and limiting alcohol consumption are explained. All nonpharmacologic treatments were tested in several trials that indicated the interventions are effective in reducing blood pressure. In addition to

nonpharmacologic interventions, antihypertensive drugs play a major role in controlling hypertension. As described in this literature review, various classes of antihypertensive drugs are used to reduce blood pressure, especially thiazide diuretics. Study results suggest a thiazide diuretic is an effective initial agent for treating hypertensive patients.

The incidence rate of hypertension is rising, and it is a common disease found in many people, especially older people. Therefore, the intent of the present study was to contribute to the expansion of current knowledge by conducting a phenomenological exploration of the lived experience from the perspective of rural Thai older adults with poorly controlled hypertension. The phenomenological methodology used in the present study is described in Chapter III.

CHAPTER III

METHODOLOGY

This chapter addresses the methodology used in the present study and the detailed processes that were carried out in completing the study. The contents in this chapter describe the phenomenological method, the criteria for the study's participants and setting, the procedures used for data collection, adherence to human rights subject protection, the study's instruments, the steps used for phenomenological reduction and bracketing, the steps used for data analysis, and the techniques used to insure the trustworthiness of qualitative findings. The processes were performed to meet the purpose of the present study: Explore the lived experience of rural Thai older adults with poorly controlled hypertension.

Phenomenological Method

The phenomenological method is a critical, rigorous, and systematic investigation of phenomena. The objective of the phenomenological method is to identify, explain, and critique the meaning of being human. The meaning determines the essence of a phenomenon through lived experience, and the essence refers to the structure of lived experience of a phenomenon in research (Munhall, 2007; Speziale & Carpenter, 2007). Based on Husserl's philosophy, an approach to the phenomenological analysis of data is an assessment of the material world through consciousness. An individual's knowledge is obtained from experience, reflecting anything of which the person is conscious, such as mood states, abstract concepts, or physical materials (Koch, 1995). Engaging anything

through consciousness is called an “essential structure” or “essence.” If the essential structure can be explained, it is possible to achieve an ultimate truth (Priest, 2002).

Gaining insight of lived experience through the use of Husserl’s phenomenological approach has value for scientists attempting to understand human motivation through subjective information. The investigator’s previous personal knowledge or personal biases must be set aside prior to approaching the phenomenon investigated. Attributes of any lived experience can be found in all persons’ experience. The commonalities in the experience can be referred to as “eidetic structure” or “universal essence” (Lopez & Willis, 2004).

The Steps of Husserl’s Philosophical Phenomenological Method

To inquire about the universal essence, Husserl developed the philosophical phenomenological method, which follows three main steps. The steps require the researcher to assume a transcendental phenomenological attitude, to explore and to describe the essence of the phenomenon, as explained below.

Assumption of the transcendental phenomenological attitude. In the first step of Husserl’s method, the investigator assumes a phenomenological attitude from the perspective of consciousness. This perspective is useful to explore the structure of consciousness. The phenomenological attitude does not refer to natural attitude or the attitude of everyday life; rather, it refers to an attitude in which the phenomenologists examines all objects from their viewpoints or their experience. To assume a transcendental phenomenological perspective, the researcher must distinguish the objects of consciousness. Transcendental consciousness is not limited by its existing forms and is

not a human consciousness; it is the perspective of essential consciousness, pure and flowing. Husserl claims that the transcendental mode of consciousness can help a researcher to understand if an object is true (Giorgi, 2009).

Search for the essence of the phenomenon. After assuming the transcendental phenomenological perspective, the phenomenologist examines a specific instance of the object. The instance of the object may be true or imagined. Next, the phenomenologist adopts the method of free imaginative variation in order to identify what is important about an object and to express precisely what makes the instance of the object what it is (Giorgi, 2009).

Description of the essence. After determining the essence of the phenomenon, the phenomenologist describes the essence as accurately as possible in the nature of its being. In developing a description of the essence, the investigator uses language to express the intentional objects of experience and accounts for only the given experience. The phenomenologist does not include non given factors, such as theory, hypothesis, or assumptions, to assist in developing the description of the phenomenon.

To elicit a more accurate description, the phenomenologist engages eidetic reduction and transcendental phenomenological reduction. Eidetic reduction is used to reduce a particular object to its essence (Giorgi, 2009). In the eidetic reduction technique, meanings of the everyday experience are expressed by the study participants through a disciplinary perspective. The disciplinary meaning is reduced to its invariant aspect that is not specific to the raw data collected from any of the participants. Therefore, the result of eidetic reduction is universal, but the contents forming the lived experience limit

the generalization in scientific analyses (Giorgi, 2005).

Transcendental phenomenological reduction is a technique in which the object is viewed from the perspective of pure consciousness or discerned simply as a presence to be investigated. To perceive the pure consciousness, the phenomenologist tries to separate the act of perceiving from the act of positing in order to systemically consider what is presented in the act of perceiving. Furthermore, transcendental phenomenological reduction requires eliminating non presented presuppositions about the given object, or “bracketing” past knowledge, also known as “epochè.” Bracketing means that past personal experiences or theories are not involved in the content of the present experience (Giorgi, 2009), and it is used to accomplish transcendental subjectivity. Transcendental subjectivity is the assessment of researchers’ effects to an inquiry, which neutralizes preconceptions and biases (Lopez & Willis, 2004).

Modification of the Philosophical Method to Serve Scientific Purposes

Giorgi (2005, 2009) modified Husserl’s philosophical phenomenological method to conform to the scientific phenomenological method. Because Husserl emphasized how an object expresses itself to the researcher’s consciousness, expression determines the strategies used to study an object. An important form of expression is physiognomic expression, which reflects the actions of a person, the person’s nonverbal and emotional communications, and particular situations in which a person finds himself or herself. The expression is explored systematically. Giorgi’s approach begins by specifying the research situation and determining the data to be collected. Phenomenological study mostly uses interview methods to create a description from specific, ideographic, and

particular experience. The descriptive account expressing the particular experience must be read and analyzed in order to more completely communicate (Giorgi, 2005, 2009).

The aim of the descriptive phenomenological method is to generate meanings of the expression that are precise and as complete as possible. To meet this goal, the researcher must use common sense and be considerate toward participants during the interview process. The researcher must not only help the participants feel comfortable in speaking freely but also sometimes encourage and stimulate the participants' expressions. Although it is not possible to perfectly describe an experience, descriptions containing sufficient details of new psychological knowledge about the phenomenon are considered adequate. After an interview is completed, contents are recorded and transcribed. During descriptive analysis, the researcher describes only the given data and tries to understand the meaning presented in the concrete description (Giorgi, 2009). From the perspective of a phenomenologist, meaning is a complex term that refers to the natural attitude, or the attitude assumed during everyday life, from the specific person's world (Giorgi, 2005). Sometimes, the description contains ambiguities; however, the descriptive researcher does not try to clarify the ambiguities or use non given factors (e.g., theory, hypothesis, or assumptions) to interpret the ambiguities. The descriptive researcher describes the ambiguities as they present themselves and does not go beyond the data that is presented (Giorgi, 2009).

Because a specific description cannot be claimed as a scientific expression, a changing attitude begins to transform the description to meet the scientific criterion that knowledge has to be general. Meanings in the description are investigated from a

disciplinary perspective in order to discern the implication of the everyday facts. This approach causes the phenomenological procedure of free imaginative variation to be used in the process (Giorgi, 2005). Finally, the researcher uses phenomenological reduction to search for invariance meanings after adopting a disciplinary attitude. In searching for meanings, Giorgi's approach emphasizes the determination of higher-level eidetic invariant meaning in order to attain the structure of concrete experience. Giorgi preferred to use the phrase "the structure of concrete experience" rather than "the essence of the phenomenon," as used in Husserl's philosophical method. According to Giorgi, the structure of the concrete experience is the common meaning of the phenomenon supplied by variations in the raw data. Furthermore, as Giorgi posited, the psychological nature of the phenomenon is focused on the structure of the experience rather than on the essence of the phenomenon (Giorgi, 2009).

Participants and Setting

In the present study, purposive sampling was used to select participants. Purposive sampling predetermines participants' characteristics based on the particular purpose of a study. Participants who have the predetermined characteristics can provide knowledge of a particular phenomenon (Mapp, 2008). Purposive sampling enables an investigator to understand the participants' experience and to obtain essential information (Burn & Grove, 2005; Mapp, 2008). A sample may be participants who are currently in the lived experience or who have already experienced the phenomenon (Mapp, 2008).

The present study identified demographic characteristics and the phenomenon of interest. All participants were persons who were older than 60 years and who received

health care services at Ban Khai Health Center and at Ban Non Samran Health Center. To be included in the sample, participants had to have had a systolic blood pressure equal to or greater than 140 mmHg and/or a diastolic blood pressure of 90 mmHg or greater after adopting lifestyle modifications or using antihypertensive drug therapy for at least one month. The participants' blood pressure values were based on the average of two or more screening measurements, each conducted at least 2 hours apart. Additionally, participants had to have been diagnosed with hypertension at least 3 months prior to the study, and they had to have experienced poorly controlled high blood pressure. Another purposive criterion included the participants' cognitive orientation. They had to be able to state correctly their name, their current location, and the present time, and they had to be able to respond appropriately to questions that were asked during the interview.

The sample size of a phenomenological study is difficult to determine because sampling continues until no new issue occurs during data gathering. However, sample size should be a small number, so that each experience can be deeply explored in detail (Mapp, 2008). In addition, Morse (2000) suggested the following factors for considering the sample size of a study: the scope of the study, the nature of the topic, the quality of the data, and study design. The scope of a study is broader. The study needs more participants and more data to accomplish the purpose of that study. The nature of the study's topic should be clear, so that a researcher does not need many participants to provide information during the study's interviews. Many participants may not be willing to give information or may feel awkward giving information, which results in the researcher obtaining poor quality of data. Therefore, fewer participants who all have the

time and are willing to participate in the interviews will provide quality of data. In each study design, Morse (2000) estimated adequate sample sizes. A phenomenological study that includes interviewing participants several times should have a sample size of 6 to 10 participants. Grounded theory should contain 20 to 30 participants.

In the present study, I included participants who met study criteria and could provide their various experiences with and essential information about poorly controlled hypertension. However, some participants had less information to share than others. As a result, data collection continued until the interview ended with the 20th participant after no new knowledge was obtained.

The study's interviews were conducted in the participants' homes, which were located in the rural and economically poor areas of the Muang District, situated in Chaiyaphum Province in northeastern Thailand. The places for interviewing were quiet environments that put the participants at ease so they could more easily share their experiences. Therefore, the findings represent the subjects' environment and daily living activities.

Procedure for Data Collection

Data gathering for the present investigation was performed after receiving approval from a variety of appropriate sources. The following groups or individuals approved the study: the institutional review board (IRB) of The Catholic University of America in Washington, D.C.; the director of the Chaiyaphum Provincial Public Health Office in Thailand; the director of Ban Khai Health Center in Chaiyaphum Province, Thailand; and the director of Ban Non Samran Health Center in Chaiyaphum Province,

Thailand.

As the principal investigator, I provided the director of the Chaiyaphum Provincial Public Health Office (CPPHC) with the study's IRB approval letter from The Catholic University of America, along with my dissertation proposal and a description of the purposes and procedures of the present study. After the director of CPPHO granted permission to collect data at Ban Khai Health Center and Ban Non Samran Health Center, I presented the IRB approval letter from The Catholic University of America and the letter of permission from the director of CPPHO to the directors of Ban Khai Health Center and Ban Non Samran Health Center. After receiving permission from the directors of Ban Khai Health Center and Ban Non Samran Health Center, I requested officers of both health centers to identify subjects who met the study criteria and were willing to enroll in the study. All prospective participants received explanations of informed consent, the objectives of the study, and the procedures for participation. Next, I obtained consent from the prospective participants prior to accessing their health records and, then, made an appointment to interview them at their homes.

Semi-structured interviews were used to produce the study's data. At the opening of each interview, I used a demographic survey to collect information about the interviewee's background. Then, I talked to the interviewee, using open-ended questions. Each probe responded to the answers of the interviewee to elicit deep and detailed information about the interviewee's lived experience. This approach provided subjects with the opportunity to describe their experience. In addition, reflective statements or prompting questions were prepared to encourage sharing the participants' experience in

case the interviewees could not clearly explain their experience. The interviews investigated the experience of the participants in their homes. All interviews were recorded on a digital recorder and a tape recorder. The duration of each interview was between 45 and 60 minutes. If the interview was not completed in that time frame, the remaining issues were addressed at a later interview.

Human Rights Subject Protection

All materials of the study were approved by the IRB of The Catholic University of America, the director of CPPHO, and the directors of Ban Khai Health Center and Ban Non Samran Health Center in Chaiyaphum Province, Thailand. The rights of the study participants were protected, as described below.

All participants were informed of the study's objectives, procedures, and benefits. In addition, participants signed an informed consent form prior to enrolling in the study. The study had a minimal potential risk for participating. Participants' addressing difficult topics during interviews might cause emotional discomfort; therefore, subjects were free to stop participating in the study at any time, without penalty. All information collected in the current study was confidential. Participants' interviews were anonymous and confidential as no actual names were presented on the transcripts or in the tape recordings. All data were stored in a secure and locked filing cabinet, and electronic data were stored on a computer with a secure username and password. The dissertation committee members and I was the only people with access to the data. I will keep the data for 5 years, at which time all data will be destroyed (i.e., paper files will be shredded and electronic files will be deleted).

Instruments

As the principal investigator, I was considered as a research instrument through using open-ended questions and a focused dialogue interview method. An interview guide and a demographic survey were employed for data collection. The interview guide contained open-ended questions and relevant probe questions and was developed to cover issues including experience with hypertension and poorly controlled hypertension (Appendix A). In addition, a demographic survey was used in order to understand each participant's background (Appendix B). Therefore, the data generated from the survey were relevant in reference to the participants' gender, age, marital status, religion, education, occupation, economic status, length of illness, and values of blood pressure.

Phenomenological Reduction and Bracketing

Husserl introduced a technique known as "bracketing." Phenomena are explored beyond our everyday attitudes and scientific habits rather than our beliefs involving what we perceive. Therefore, bracketing traditionally refers to determining the investigator's interests, cultural variables, assumptions, and personal experience that impact the study data. These factors are placed in brackets throughout the entire research process (Fischer, 2009). To precisely clarify the meaning of the phenomena, two main attitudinal shifts are used in phenomenological reduction or bracketing. First, the researcher brackets past knowledge in order to reveal the concrete instance of the phenomenon. To reduce personal bias during the interview and data analysis, the researcher brackets all knowledge from the literature reviews. In addition, the researcher's personal experience is set aside during the interviews and data analysis. The researcher should not allow this

knowledge to influence the participants' descriptions. Second, the researcher exactly describes the participants' statements as presences. All statements from the participants should not be affected by the researcher's bias, even if the statements contain ambiguities (Giorgi, 1997).

Furthermore, according to Hamill and Sinclair (2010), bracketing improves the rigor and trustworthiness of a study, particularly in the processes of data gathering and analysis. Hamill and Sinclair suggested the following practical strategies of bracketing throughout all processes of research:

1. Prior to starting a project, the researcher should write what he or she knows and thinks about the particular topics. This strategy is conducted throughout all the processes of the project to ensure that the researcher's ideas, culture, and experience are not involved in the participants' responses.
2. The literature review should be performed after data gathering and analysis so that findings from the existing literature will not influence the researcher's interviewing and data analysis.
3. The researcher should focus on the participants' experience to generate emerging themes.
4. During data collection and analysis, the researcher should develop an audit trail. To increase the trustworthiness of the study, the researcher should check dependability, credibility, auditability, and transferability.

5. In addition to the researcher, other individuals such as supervisors, steering committee members, or peers should examine the study's transcripts and interpretation of data.
6. The researcher should reconsider interpretation of the data to ensure that the participants' meanings and descriptions are not misinterpreted.
7. Finally, the researcher should review themes that are presented in existing studies but not found in the researcher's study. The goal of this strategy is to determine whether or not data have been omitted, adjusted, or misinterpreted by the researcher's bias.

In the present study, I performed bracketing according to the strategies recommended by Hamill and Sinclair (2010). I bracketed all knowledge regarding hypertension management, factors influencing the behaviors of hypertensive patients, and the beliefs and attitudes of rural Thai older adults. In reviewing the literature, I focused on previous studies relevant to older people with poorly controlled hypertension. The goal of this focus was to search for a gap in the knowledge in order to create the present study rather than to gather information that might influence my perception of the study's data. After identifying emerging themes during data analysis, I reviewed all of the emerging themes many times to ensure they were not manipulated by my bias. Dependability, credibility, auditability, and transferability were conducted to examine the study's trustworthiness. Members of my dissertation committee reexamined the transcripts and my interpretation of the study data. Their reexamination determined whether or not my interpretation differed from the committee's interpretation of the data

and whether or not any differences might have been caused by my bias. As an additional strategy to reduce my bias, I reviewed existing studies regarding hypertension management among older people in order to search for emerging themes that were not found in my study.

Data Analysis

Data analysis is a process that involves preparing the data, conducting various analyses in continuously increasing depth in order to understand the data, representing the data, and interpreting the overall meaning of the data (Creswell, 2003). In the present study, data analysis was based on Giorgi's (2009) phenomenological method, which comprises three steps of analysis: read for sense of the whole, determination of meaning units, and transformation of the participant's natural expressions in phenomenologically psychologically sensitive expressions.

Read for Sense of the Whole

Prior to data analysis, I assumed the attitude of phenomenological reduction and remained sensitive to the data used to describe the phenomenon. Next, I read the entire description of the particular phenomenon to obtain a general sense of the description. While reading the description, I focused on the participants' experience and their expressions in order to reduce my bias.

Determination of Meaning Units

In the second step of data analysis, and while maintaining the attitude of phenomenological reduction, I determined meaning units by breaking up parts of the description into "units of meaning." I reviewed the description again and, then, noted

sentences that were essential. The description was separated by a series of meaning units. According to Giorgi (2009), meaning units should respond to the ultimate goal of the phenomenological analysis. Therefore, I generated meaning units by breaking a description into parts that responded to the study's objective.

Transformation of Participant's Natural Attitude Expressions into Phenomenologically Psychologically Sensitive Expressions

After identifying the meaning units, I developed an expression, or description, for each meaning unit according to a psychological dimension of experience, also known as a "lifeworld description" (Giorgi, 2009). I produced tables, each titled "Transformation" and composed of two columns. The left column contained each meaning unit; the right column contained a description I created for each meaning unit and a theme to which the meaning unit correlated (Appendix C).

Next, after creating the tables and transforming the participants' natural attitude expressions in phenomenologically psychologically sensitive expressions, I noted the emergent, or common, themes of the phenomenon. I classified the common themes of all the interviews into theme clusters. The theme clusters generated the structure of the phenomena, displaying the study participants' lived experience with poorly controlled hypertension. During this process, I utilized the phenomenological procedure of free imaginative variation to generate general psychological characteristics. Based on this technique, the raw data in each interview were imagined in various meanings in order to seek possible meaning. In the final step of my data analysis, I reviewed the transcribed interviews, meaning units, common themes, and theme clusters many times. The process

of review and rereview ensured that the invariant sense covered every critical sense and that each theme was associated with the structure of the phenomenon.

Trustworthiness of Qualitative Findings

The validity of qualitative research is based on the truth or trustworthiness of data, analysis, interpretation, and findings. The findings of qualitative studies can be referred to as “reality” (Waltz, Strickland, & Lenz, 2005). Other terms such as “trustworthiness,” “authenticity,” and “credibility” are also used to describe the validity of qualitative research (Creswell, 2003). The rigor of the present study was supported by the criteria of credibility, dependability, confirmability, and transferability (Speziale & Carpenter, 2007).

Credibility

Credibility refers to the truth, value, or believability of a finding and is known as “the real world” or “the truth in reality.” A study’s finding is established through the researcher’s observation, participation, study, or engagements (Leininger, 1994). To determine whether or not the findings in the present study were true, I asked members of my dissertation committee for their approval, a technique known as “member-checking.” They validated the study’s data, analytic categories, interpretations, and conclusions. In addition, all interview transcriptions were read and checked against all tape recordings at least two times to ensure that the contents were correct.

Because the study’s interviews were conducted in the Thai language, the technique of back translation was adopted prior to analyzing the data in English. The aims of using this technique were to recheck the precision of the language and to validate

the translation. I translated all of the interview transcripts from Thai into English. An American educator edited and proofread the English versions and, then, a nursing educator who had earned a doctoral degree in the United States and had experience in community health nursing in Thailand translated the English versions into the Thai language again. Next, the back-translated Thai versions were compared with the original data. Sometimes, the back-translated material contained changed meanings, and the English words were revised. Based on differences between the Thai and English languages, a problem often occurred with the lack of equivalent words between the two languages. Therefore, I provided a detailed definition of the problematic word or phrase according to the participants' perspectives.

Dependability

Dependability is a criterion required to demonstrate whether or not study results are dependable or reliable. A study will meet the criterion of dependability after the credibility of the findings is established (Speziale & Carpenter, 2007). Therefore, credibility must be demonstrated before dependability. Similarly, in quantitative research, validity should be demonstrated before reliability (Lincoln & Guba, 1985).

To meet the criterion of dependability, the technique of inquiry audit was employed in the present study. An inquiry audit consists of two tasks: examining the process and assessing the product. The faculty members on the dissertation committee and I worked together to examine whether or not the process of the study's inquiry was acceptable. We also assessed whether or not the study's product (i.e., the data, findings, and recommendations) was supported by data and was internally consistent.

Confirmability

Confirmability is the final process of a study's audit and is also called "the confirmability audit" (Lincoln & Guba, 1985). To establish confirmability, researchers create an audit trail of study materials, which presents the thought processes and the evidence. The thought processes and the evidence are contributed to the study's conclusion. Another person can confirm every step of the findings to ensure precision of the data (Speziale & Carpenter, 2007). In the present study, the audit trail materials included raw data, data deduction, data reconstruction, and process notes. These materials were rechecked and audited by members of the dissertation committee.

Transferability

Transferability is the applicability of a study's findings to other individuals who experience in similar context (Speziale & Carpenter, 2007). In quantitative research, transferability is known as "external validity"; however, unlike quantitative research, qualitative research cannot provide relatively precise statements regarding external validity. Because qualitative research aims to produce knowledge of specific phenomena and in-depth understandings, the transferability criterion focuses on findings that have comprehensive descriptions that can be applied by someone else who is interested in the database (Leininger, 1994; Lincoln & Guba, 1985).

To meet the criterion of transferability in the present study, I generated particular findings that could contribute to extending the knowledge and uses in other similar situations. The findings of this study were based on interviews with 20 participants who provided various experiences regarding blood pressure control. I ended the interviews

when participants no longer revealed new experiences.

Summary

Phenomenology is a unique, scientific methodology and philosophy. The current study's phenomenological approach used in-depth interviews, which contained open-ended questions and a semi-structured interview process to capture the lived experience of rural Thai older adults with poorly controlled hypertension. The interviews describing the participants' lived experiences were digitally recorded and transcribed verbatim. Data analysis followed the three main steps of Giorgi's (2009) method of phenomenological inquiry. Members of the dissertation committee were consulted during the process of analysis in order to achieve a high level of rigor and trustworthiness in the study.

CHAPTER IV

PRESENTATION OF FINDINGS

This chapter presents the findings from a phenomenological investigation that aimed to explore the lived experience of rural Thai older adults with poorly controlled hypertension. The following research question guided this study: “What is the lived experience of rural Thai older adults with poorly controlled hypertension?” Husserl’s (1989) philosophical approach was used as the conceptual orientation of this study. Husserl’s approach emphasizes the assessment of phenomena through the consciousness among particular persons; findings from the assessment reflect emotional status, physical materials, and daily lifestyle. To understand the current study’s participants’ lived experience, the researcher utilized the phenomenological method of Giorgi (2009) for the data analysis. The study’s findings and results are presented in this chapter, along with a description of the participants, the theme clusters, and each theme cluster’s common themes.

Description of Participants

The 20 participants of this study were adults who were aged 60 years or older and who lived in rural areas of the Muang District, which is located in Chaiyaphum Province in the northeast region of Thailand. Participants were recruited from Ban Khai Health Center and from Ban Non Samran Health Center. The majority of subjects were female ($n = 14$) and in the youngest of the three age categories of older adults (60 to 74 years old; $n = 13$). Most of the participants were married ($n = 13$), and all participants were

Buddhist. The majority of the participants had no formal education ($n = 17$). Eleven participants were unemployed.

The lengths of diagnosis with hypertension among the participants ranged from one to three years ($n = 3$), from four to six years ($n = 9$), and greater than six years ($n = 8$). Nine participants had hypertension only, six participants had hypertension and diabetes, and the remaining five participants had hypertension and other diseases. Table 2 outlines the demographic characteristics of the study's participants.

Table 2. Demographic Data

Characteristics	Number ($N = 20$)
Gender	
Female	14
Male	6
Age (in years)	
60–74	13
75–84	6
85–100	1
Marital Status	
Married	13
Widowed	7
Religious Affiliation	
Buddhist	20
Educational level	
No education	17
Primary school	3

Table 2. Demographic Data (continued)

Characteristics	Number (<i>N</i> = 20)
Occupation	
Farmer	7
Handicraft	2
Unemployed	11
Length of diagnosis with hypertension (in years)	
1–3	3
4–6	9
> 6	8
Other health problems	
None	9
Diabetes mellitus	6
Other diseases	5

In the 3-month period before enrollment in the study, the blood pressure levels of 11 participants were classified at Stage Two of hypertension. During the study period, the blood pressure levels of 13 participants were classified at Stage Two (see Table 3).

Table 3. The Number of Participants Classified by Stages of Hypertension

Classification of Blood Pressure	3 Previous Months (<i>N</i> = 20)	Present (<i>N</i> = 20)
Stage 1 hypertension (140–159 mmHg or 90–99mmHg)	9	7
Stage 2 hypertension (≥ 160 mmHg or ≥ 100 mmHg)	11	13

Findings

Theme clusters and common themes were derived from the experiences of rural Thai older adults with poorly controlled hypertension. All meaning units from the participants' narratives were classified into nine common themes. The nine common themes were categorized into four theme clusters. The four theme clusters are listed in Table 4, along with the nine common themes listed under the theme cluster to which they belong. Following the list, a description of the four theme clusters and nine common themes are presented, and each common theme is supported by the study participants' statements.

Table 4. The Theme Clusters and Common Themes

The Theme Clusters and Common Themes	
1. Perception of Hypertension	<ul style="list-style-type: none"> a. Healthy Due to Silent Symptoms b. Living as Usual c. Focusing on Medication Use
2. Emotional Representations	<ul style="list-style-type: none"> a. Fear and Worry b. Anger
3. Economic Difficulties	<ul style="list-style-type: none"> a. Low Income b. Debt
4. Folkways for Living with High Blood Pressure	<ul style="list-style-type: none"> a. Physical Activities in Terms of Farming, Gardening, Housework, and Light Walking b. Cuisine and Seasoning from the <i>Isaan</i> (Northeast) Region of Thailand

Perception of Hypertension

Participants' perceptions were analyzed to understand how they managed their behaviors and their illness. According to the literature, patients use several sources of information to represent their illness: previous social communication, cultural knowledge of the illness, significant or authoritative persons, and the patients' current experience with the illness. The phrase "significant or authoritative persons" refers to parents or doctors; "current experience" means the knowledge of effective strategies to deal with the illness (Hagger & Orbell, 2003; p. 142). In the present study, participants also used the sources of information to represent their perception of illness. They represented their illness in three common themes: healthy due to silent symptoms, living as usual, and focusing on medication use.

Healthy Due to Silent Symptoms

Hypertension is known as "the silent killer," although it is readily treatable and easily detectable (Moore, 2005; p. 16). Most participants in the present study had no physical symptoms or any warning signs of the disease, and some of them were unaware of their condition. This may have increased their risks of heart disease and stroke.

A 68-year-old male with an asymptomatic condition perceived that he had normal blood pressure. Actually, his blood pressure (BP) level was high. He said, "Because I have no fatigue or dizziness, my BP should be low right now." A 62-year-old woman commented about her systolic blood pressure value. At the time, she had no symptoms, and she felt that her blood pressure was not too high. She said, "My BP is not too high. It was almost 200." A 65-year-old male perceived that he was as healthy as a normal person

because his symptoms did not reoccur. He said, “I’m healthy.... I don’t worry because I don’t have a headache. I’m fine, although my BP increases.... I don’t worry if I don’t have headache.”

Because of a lack of physical signs, some participants felt that high blood pressure was not an issue of concern compared to other health issues. An 81-year-old female did not worry about her hypertension, but she was concerned with her back pain. She said, “I feel normal. I’m fine and healthy. I only have a problem with back pain.” A 64-year-old woman indicated that she felt the following way about her high blood pressure:

I don’t have any abnormal signs. Every time a doctor tells me about symptoms. I have never had the symptoms. I’m not worried about it.... I think the disease doesn’t affect me, so I’m not worried about it. I am only concerned about eating. I don’t eat salty food, but I eat vegetables. Nowadays, I have only constipation.

An 83-year-old male was very surprised by his high blood pressure because he did not have any physical signs. He believed that his blood pressure should not be very high. He said, “I was very surprised that my blood pressure is high, but I wasn’t as dizzy as previously.” In the past, his blood pressure was checked at a health center. The provider informed him about his high blood pressure. He did not trust the accuracy of the provider’s measurement. He said:

180/70. My BP shouldn’t have been high because I wasn’t dizzy. Many patients were waiting to check their BP. It might have been a mistake in checking on my follow-up day.... I don’t have any abnormal signs. It would be 150/100.

After his BP was checked again by the investigator, he found that his BP was really high.

He felt surprised about it and said:

I wondered why I wasn't dizzy if my BP was high.... If my BP is 188, I can't go to the health center.... I thought that I'm fine. My BP isn't increased. In addition, I can go anywhere. So, I think I'm OK.

A 60-year-old female had very little awareness of her high blood pressure because of her asymptomatic condition. She said:

At first, I was very worried when a doctor said I had hypertension. However, I wonder why I don't have any symptoms although my BP is high.... When I had it for a while, there was no symptom. So, I don't worry about it. My health is all right, and I don't have diabetes either.... Providers advised me to rest during very HBP [high blood pressure], but I don't have any symptoms. So, I don't rest, and I work always.... I'm fine now. I'm not afraid of anything.

Living as Usual

High blood pressure did not influence lifestyle changes among the study participants. Even though lifestyle is important in determining health, some participants maintained the same daily routine and did not improve their health habits.

An 84-year-old male had not made any lifestyle changes despite his high blood pressure. His health habits included taking his regular medicine intake, light physical activity, and taking a rest whenever he had dizziness. He described his experience:

My daily activities are the same as usual... and take anti-hypertensive drug. In the last two days ago, I have felt dizzy. I do nothing except for sleep.... I take medications and live as normal. Besides that, I do nothing.... I go to follow-up

always. I have never missed medicine intake. The providers advised me to stretch my hands and legs, but I can't follow the advice. They said that I should walk around the house in the morning. I did. I do every day, but it's less than 30 minutes.... I do nothing. Sometimes I sit or walk. If I'm very dizzy, I sleep.

Similarly, a 65-year-old female did not change her lifestyle, especially her eating and exercise habits. She said:

My daily life doesn't change. Everything is the same.... I just take this medicine when I have a headache. The pain will decline... my BP will be low. I just take the medicines according to their [health providers'] advice and have regular follow-ups.... I don't worry. Let it be. If something happens, let it occur. Nothing will worry me. I will live as usual because there is nothing.... Providers encourage me to exercise, walk around my house either the morning or in the afternoon. Sometimes I do it, sometimes not.... In the early morning, I have to prepare food and offer it to monks so that I have no time to exercise.... A community nurse advised me to walk around the house and don't eat a salty or spicy diet. However, I can't eat tasteless food. I like salty and spicy diet.... I don't worry. If it [blood pressure] increases, let it get high. I will live this way.

A 75-year-old female did not change her daily activities when her blood pressure increased. She talked about her experience as follows:

I can live normally, although sometimes my BP is high and sometimes low. What I think, I will live as usual.... 120 [systolic blood pressure] would be normal, but my BP values are 170–180 [systolic blood pressure]. They're very high. I don't

know what I should do.... I don't ask them [providers]. No people discuss their health with the providers, so I don't do that. I receive medicine, and then I go back home.... I want to know, but no one talks about health. I'm a silent person.... I went to a hospital. A provider invited patients to exercise, but I didn't do because I was tired. In addition, I'm too old.... I have no energy to raise my hands or legs.... I'm dizzy. I can't sit for long time. I have to sleep.... I sleep all day after breakfast. I only stay at home. In the evening I cook dinner, and then I go upstairs.

In addition, the woman reported that losing her sense of taste prevented her from changing her nutritional habits. She explained, "Others said that I eat too much salt. Sometimes I cook with too much salt because old person's tongue can't sense taste well. I don't know what the taste is."

A 68-year-old female did not change her daily activities because she lacked adequate health knowledge. She said:

I don't know how to control high blood pressure. My daily life is the same.... I don't do anything. Just live as normal.... After getting up, I don't prepare breakfast, wake up and sit here.... I don't do any healthcare.... I don't control anything.... I don't exercise, but I do housework sometimes. I can't do housework often because I'm so tired and have chest pain. So, my husband does housework. I just walk to a market two or three times per day.

An 81-year-old woman also did not change her daily routine. She described her usual activities as follows:

My daily life doesn't change. Everything is the same.... I don't worry about it [blood pressure]. I continually take medicine.... I only stay at home, and I regularly take medicine after breakfast. I sometimes sit and sometimes sleep.... I can walk around the house, but I can't go far away.... I didn't think anything. I only take medicine.... I don't do anything. I always sit here.

Focusing on Medication Use

The majority of participants believed that high blood pressure can only be managed by medication. They were very concerned about their dependence on anti-hypertensive drugs. Nevertheless, most of the participants had a positive attitude towards the drugs. They tended to have good drug compliance because the medicines assisted them in maintaining a stable health condition.

A 68-year-old female said, "I need only medications.... I try to take medication regularly.... What am I supposed to do then? I had hypertension, and medications can't help me. So, I let it be." A 65-year-old male also said:

I had 180 [systolic blood pressure]. Nothing happens. I take medicine. My BP will decrease. I take medications to control BP. If medications can't help me, there is nothing to help me.... Medication can't help me, so I will accept the impact.

A 65-year-old female believed that medication alone would be adequate to control her high blood pressure. She said, "I don't know what to do besides taking medicine.... How to decrease BP, I think taking medicine would be enough." Another participant, an 83-year-old male, said, "I am very concerned about dizziness, so I must take the medicine to prevent this symptom."

Some participants relied on self-treatment to reduce symptoms such as fatigue and headache. They increased their medication dose to a higher level than their doctor's prescription. A 68-year-old male described how he administered his medicine:

I felt fatigued. It could be from high BP. So, I took a pill instead of a half tablet.... After this New Year's Eve, I have taken a tab since the last follow-up. I have never reduced the medicine or never taken a half tab as usual.... I thought a half tab is not enough to decrease my BP, so I have added more and taken a tab.... I have taken more by myself. I saw that my BP too high.... I don't know what will happen, if I take a high dose.

A 65-year-old female also took a double dose of anti-hypertensive drug. She shared her experience as follows:

I have only the medicines [hypertensive drugs], which providers gave me. Besides the medicines, I don't control anything.... The provider advised me to take a tab of this hypertensive drug, but it's insufficient for a severe headache. So, I decided to take it twice.... I do a double dose. In the next morning, I will take it as normal.... I decide to take it. I don't know other medicines. The headache is caused from high BP, so I have to take this one, which the provider gave me. I take two tabs.

The study participants' perception of hypertension varied. Most of the participants were asymptomatic. Consequently, they perceived that their high blood pressure values were not too severe. Several participants did not change their daily activities, despite not being able to control their blood pressure could not be controlled at the normal level.

Some participants preferred managing their blood pressure by using anti-hypertensive medications rather than modifying their lifestyle. In addition to their perception of hypertension, the study participants described their emotions related to having hypertension.

Emotional Representations

Kleinginna and Kleinginna (1981) defined emotion as follows:

Emotion is a complex set of interactions among subjective and objective factors, mediated by neural and hormonal systems, which can (a) give rise to affective experiences such as feelings of arousal, pleasure/displeasure; (b) generate cognitive processes such as emotionally relevant perceptual effects, appraisals, labeling processes; (c) activate widespread physiological adjustments to the arousing conditions; and (d) lead to behavior that is often, but not always, expressive, goal directed, and adaptive. (p. 355)

Emotions play an essential role in the human condition. Patients often will express an emotional response to their illness (Bowman, 2000). In the present study, participants represented two common emotions in response to their hypertension: (1) fear and worry and (2) anger.

Fear and Worry

According to Izard (1991), fear refers to expressive behaviors, bodily changes, and feelings that are caused by anxiety from danger or threats. Danger or threats are associated with an individual's well-being and comfort with their physical condition. Some people, for example neurotics, want to avoid threats. However, fear and worry can

be helpful for effectively avoiding danger and threats (Tamir, 2009). Furthermore, fear was the most common emotion among adults with diabetes (DeCoster, 2003). In the current study, fear and worry were common emotions of many participants. Their fear was associated with their illness, and some participants' worries were related to their illness and family.

A 68-year-old male was worried about how to deal with his high blood pressure and why his blood pressure did not decrease. He said, "I felt weary in my mind, why it [blood pressure] highly increased.... It had never been high like this. I'm afraid of shock from the disease. Someone said hypertensive patients are easy to shock." An 84-year-old male was worried about his health: "I'm a little worried about my health. I worry whether or not I can live. Why do I still have this symptom?" A 65-year-old male felt scared of death, saying, "I have never missed taking the anti-hypertensive drug. I take it always because I fear to die. It's easy to die from hypertension, but other diseases are not causes of death."

A 75-year-old female was afraid of her high blood pressure. She did not know how to deal with the disease, saying, "I'm worried about my high blood pressure, but I don't know what I do." A 61-year-old female was worried about her illness and feared unacceptable consequences from hypertension. She said, "Why isn't my BP reduced? I'm afraid to die and leave my kids early.... I'm worried about everything and think a lot.... I'm worried during working. I may not work in rice fields because of the dizziness." A 60-year-old female was worried about the possibility of becoming disabled because and, consequently, dependent on her children. She said:

I'm afraid of being disabled. My children will take care of me if I'm disabled....

My BP was 200. I couldn't walk, and I was weak on the side of my body. I called someone to help me while my condition was very severe, in the morning. I hurried to go to a hospital. I have only a strong mind to deal with it.

In addition to worrying about their health condition, some participants worried about their children. For example, a 65-year-old female expressed her worries as follows:

I worry about my kids, although I should not worry.... I am a mom. I worry about everything about my children.... I worry about how their business going, do they have enough money to pay for a car.... How their lives are doing.

A 64-year-old female worried about her daughter who was sick with breast cancer. The woman's worry and concern for her daughter caused her blood pressure to increase. She said:

In the past, my BP wasn't high until I checked it. I found that it was high.... My BP increases. It could be from sleeplessness.... While my daughter was sick, I thought a lot about her.... She has very long wound from this to here. Then the doctor took muscle from this to plant here. Her disease is very severe.... My health got worse with her sickness. She said that I shouldn't worry about her. The doctor was nice with her, but I was very worried about her.

Anger

Anger (moodiness, being mad) was a frequent, negative emotion experienced by the participants. The common causes of their anger were conflicts with family members and illness.

An 84-year-old male participant had very high blood pressure and dizziness. His moods were very labile. He became easily frustrated whenever he heard his daughter talking loudly. He said, "I'm moody about everything... I'm moodier because I get sick... Sometimes, I'm very annoyed at my daughter because her voice is so loud. I always argue with her. When I told her to lower her voice, she got angry." A 60-year-old female frequently argued with her husband, which caused her blood pressure to increase. She said, "In the past, we had no problem each other. We have had a lot of arguments from last year until now... I always argue with my husband. We argue a lot. Whenever I argue with him, my BP increases." Similarly, a 70-year-old male described having arguments with his wife:

I always have problems with her [wife]. I said something to her. She cursed me and my son.... I get mad every day because I have arguments with her.... I'm annoyed when she comes back home drunk. I don't drink and hate the smell of alcohol.

Fear, worry, and anger were conveyed in the participants' narratives describing their experiences with hypertension. The main causes of these emotions are health conditions, concerning family members, and conflict within their family. Additionally, conflicts within the participants' families had a cause from economic hardship as well.

Economic Difficulties

Based on the participants' statements, economic difficulties were associated with managing high blood pressure. Because of financial hardships, some participants were limited in their ability to engage in risk-reduction behaviors and healthy self-management

techniques. Two common themes emerged, concerning economic difficulties: low income and debt.

Low Income

According to the National Statistical Office of Thailand (2007), most Thai older adults (70%) have an income of 4,200 Baht/month (about \$131.25/month) or less, indicating a level of income that is insufficient for household expenses. Fortunately, Thai citizens who have a low income and are aged 60 years or older receive government-sponsored financial support, including an elderly pension allowance (500 Baht/person/month or about \$15.63/person/month) and free healthcare services. In the present study, all of the participants had a monthly income less than the 4,200 Baht reported by the National Statistical Office of Thailand. Participants with a very low income depended on affordable foods found in their local areas.

A 75-year-old female participant received an elderly pension allowance and little other income. The money she received was primarily utilized for basic living expenses; as a result, she did not have sufficient funds to effectively address her healthcare concerns. She said:

I and my husband get 500 Baht per person from the elderly pension allowance, so our household income is 1,000 Baht per month [about \$31.25/month]. I also have income from selling woven bamboo baskets. All income is used for only meals... Sometimes, I don't want to be hungry because I will lose money for food. I eat only food that I can find around my house... I don't buy them [vegetables] because I can get them around here... We don't worry about eating.

Only money, I'm very worried.... Sometimes I get trouble, and I always have money problems.... I think ahead about where I will get money if my money is all used up. In April, the government will pay 500 Baht per month for people with disabilities. To receive the grant, I and my husband registered as deaf at the health center.

Other participants described similar difficulties related to their low income:

It [income] isn't enough.... Previously I had about 70 to 80 bags of rice, but this year I have about 30 to 40 bags.... Last year I didn't do it because there was less water. This year has less water than last year. In addition, the rice price of this year is low also. I'm not worried too much. If I have no money, I will borrow money from my friends. When I have money, I will return it to them. (70-year-old male)

I got an old age allowance of 500 Baht [about \$15 per month] and sometimes my children give me money.... It isn't enough. I am stressed about it [money]. Only 500 Baht is not enough. I use it all for water and electricity. So, I have to sell rice to get more money. Last year, the rice price was not good. (70-year-old female)

If we don't do it [rice farming], we will not have money. Now we get 40,000 to 50,000 Baht [about \$1,250 to \$1,562.50 per year or \$104.20 to \$130.00 per month] from selling rice. It will be enough for this year. (81-year-old female)

Some participants experienced additional negative socioeconomic influencing on

their well-being as a result of high blood pressure. For instance, a 62-year-old female with hypertension had a stroke. Consequently, she became unemployed, which caused financial problems in her family. She said, “I’m stressed about my job.... Sometimes my son complains about money. I said to him that I can’t work to make money.”

A 68-years-old female’s illness had an economic impact on her daily living. She believed her economic hardship was the cause of her high blood pressure. She said:

I worried too much about money. My kids took my money away during this month. When I asked for payment, my daughter said that she didn’t have enough money to pay me back. Now I don’t have money too. Sometimes I was unable to sleep because of thinking about the money again and again. I have to take a sleeping pill, and then I could sleep early at night.... One day, I came with my son from his house in a province.... Before he left, I asked him for money, but he rejected me. He said that he had only money to pay for gasoline, but he didn’t have money for me. When I heard his statement, I felt bad and couldn’t sleep. My kids didn’t help me and let me die.... Previously I had a big gold chain [cost about 255,000 Thai Baht or about \$8,500]. I planned to sell it and get money to fix my house, but my daughter took it away.... Now, I think always about money. It causes my BP to increase.... Whenever I think about it, I’m stressed.... My daughter borrowed my money to buy a car, but I got only 10,000 Baht [about \$330] back. The other son borrowed 80,000 Baht [about \$2,640] from me, but he didn’t pay me back yet. I think that I will let it be. I will sell the other gold chain for my expenditures.

Debt

Another economic stressor among the study's participants was household debt, which affected their well-being. Some participants had household debt that stemmed from making payments to help their children find work abroad in developed countries.

A 65-year-old female conveyed how much she worried when she thought about her household debt:

I worry about my debt. The debt occurred because my son plans to work abroad. Finally, someone cheated him and took his money away... The debt was about 200,000 Baht [about \$6,060]. Someone almost took my land instead of the debt payment. Now, I've gotten the titles back, but I can't forget this problem.

A 75 year-old female said, "Previously, I had rice fields.... When my son went to work abroad, I had to sell the lands to pay debts. Now I have only my home."

A 60-year-old female indicated that she was burdened with debt, and her health condition was not improving. She said:

Two sons went abroad to work, and they didn't send money back to pay the debt that I owed to someone.... I paid the interest instead of them. The interest was 4,000 to 6,000 Baht [about \$125 to \$187.50] per month... The problems with both sons make me think a lot. In the past, I had a lot of debt until people almost confiscated my house and lands. My children can't help me. Someone will sue me though.... I don't have enough money to pay off debt.

The woman's daughter eventually helped pay off some of her debt, but other loans remained. She described her economic crisis as follows:

I invested in fish feeding. Finally, I lost money with the investment... I took a loan from BAAC [Bank for Agriculture and Agricultural Co-operatives] because it offered a low interest rate. Additionally, I borrowed 30,000 Baht [\$937.5] from the Chaiyaphum Ladies' Association.... I gave up everything and hoped that my sons would pay the debt instead of me. My health is not better.... Now I still have debt, and I haven't paid any interest for last three months.

A 60-year-old female explained she was in debt because she had to borrow money to supplement her income, which was insufficient for household expenditures. She said:

If I don't have money, I will borrow money from a merchant.... I have to pay 800 Baht [about \$25] interest per year.... I borrow 10,000 Baht [about \$312.50] per year.... I postpone payment. Perhaps I borrow a little of money from someone to pay back some debt. Finally, I can't find any money. I sell rice to pay the debt.... Sometime I catch fish to make *Pla Ra* and sell it.

The study participants and their families confronted financial hardship in the form of low incomes and debt. As reflected in their statements, financial hardship affected their health condition, emotions, and relationships within their families. In addition to economic difficulties, the participants' described folkways for living with high blood pressure.

Folkways for Living with High Blood Pressure

Lifestyle adjustments, especially in the areas of food consumption habits and physical activities, can make a positive difference in the health of patients with hypertension. A low-fat diet focusing on fruits and vegetables can reduce systolic blood

pressure (SBP) by 8 mmHg to 14 mmHg, and physical activity lasting at least 30 minutes per day can reduce SBP by 4 mmHg to 9 mmHg (Chobanian, et al., 2003). In the present study, most of the participants lived an agricultural, rural lifestyle. Their usual physical activities were farming, gardening, housework, and light walking. Their diets consisted of the cuisine and seasoning that is typical in the *Isaan* (northeast) region of Thailand where they lived. Therefore, the theme cluster of “Folkways for living with high blood pressure” elicited two common themes: physical activities and cuisine and seasoning from the *Isaan* (northeast) region of Thailand.

Physical Activities in Terms of Farming, Gardening, Housework, and Light Walking

The participants’ physical activities were relevant to their rural lifestyle in which agriculture played a major role. They preferred physical activities in connection with rice farming and gardening.

A 60-year-old male did not take part in physical activities such as running, swimming, or cycling; instead, he preferred physical activities related to rice farming. He said:

I don’t work out, but I prefer to do rice farming. I always work in the rice fields.... Usually, I go to the rice fields when I pump water for the fields, transplant rice seedlings, or pull rice sprouts. Almost every day, there is no holiday.... I stay all day in the rice fields. I take a rest whenever I’m tired.... I dig in the rice fields. Can we accept all activities as exercise?

Other participants described similar physical activities related to their rural, agricultural lifestyle:

I plant rice all the day and rest during the middle day. If weather is too hot, we rest. If it's not hot, we rest at lunch.... If I don't do rice planting, I will cultivate chili... I grow chili in my rice fields. Now I prepare soil to plant chili and make fences to surround a chili garden.... I do my jobs instead of exercise. Running doesn't help my jobs' progress. (65-year-old male)

Providers advised me to work out. I sometimes did, sometimes didn't. I wake up to prepare food for selling at 3 am. I'm not available to exercise.... They exercise in the late afternoon, but I don't do it... I do rice farming.... I water vegetables around my house.... I peddle the foods in the village every day. I walk around the village. I go back home when it is sold out... During rice farming season, I don't sell food. (61-year-old female)

A doctor encouraged me to exercise. Previously, people exercised at a school. I also exercised with them, but right now they don't do it. I don't do it either. Nowadays, I ride my bicycle to the rice fields every day. Someone said that it's enough exercise for me... The time consumed is about a half hour if I ride slowly.... We do rice farming until 4 to 5 pm, and then we go back home to cook dinner.... I plant chili by my house.... I plant onion and garlic. (60-year-old female)

Many participants whose activities were limited by their physical condition preferred light walking. They believed light walking did not consume a lot of their

energy. In addition, it was a convenient activity that they could do whenever they wanted. A 68-year-old female who walked to a market every day said, “I’m very fatigued.... I don’t exercise.... I only walk to a market.... I go there and come back two or three times a day.” A 60-year-old male preferred walking near his house, saying, “I walked around my house about 600 meters. It would be about 15 to 20 minutes, one to two times per week.” An 83-year-old male also selected walking for his exercise. He said, “I don’t do anything. I just walk around my house with my nephew. After meals, I go to friends’ houses... I walk far away to the end of the road at Poab’s house, the leader of this village.”

Among participants who were housewives, a common physical activity was housework. A 65-year-old female who preferred house cleaning and cooking said, “I usually clean the house.... I wash dishes, sweep and wipe the floor.... During the rice planting period, I’m not available. I have to prepare food and bring it to rice fields.” A 68-year-old female preferred doing housework occasionally because of physical limitations caused by her health condition. She said, “I don’t exercise, but I do housework sometimes. I can’t do housework often because I’m so tired and have chest pain. My husband helps me to do housework.”

Cuisine and Seasoning from the Isaan (Northeast) Region of Thailand

All study participants lived in the northeast region of Thailand known as “Isaan.” People from the *Isaan* region call themselves “Khon Isaan” (“*Isaan* people”), or “Thai Isaan” (“*Isaan* Thai”). Thai *Isaan*’s culture is evident in the cuisine, dress, arts, and other folkways of the region. A typical *Isaan* meal is healthy cooking that consists of fish,

vegetables, rice, and herbs. *Isaan* cooking has four flavors: spicy, salty, sour, and sweet. In the present study, several participants noted that the typical *Isaan* ingredients of fish, vegetables, and *Nam Phrik* (chili sauce) were included in their favorite meals, as described in the following statements:

My husband and I always eat boiled vegetables with *Nam Phrik*. When I have fish, I cook a sour fish soup with vegetables. We don't like to eat stir-fried food.
(65-year-old female)

I like steamed fish with steamed vegetable. They are very soft and easy to eat because my teeth are not that good. (65-year-old female)

I mostly eat fish soups. I don't eat fatty food or deep-fried food. Fish must be grilled.... I eat vegetables with *Nam Phrik*. I can't survive if I don't eat vegetables with *Nam Phrik*. (83-year-old male)

Steamed vegetables with *Nam Phrik*. Sometimes I do stir-fried vegetables.(60-year-old female)

I like to eat steam rice with *Nam Phrik*. I like fish and a bit of chicken. I don't like pork because it is quite fatty. (84-year-old male)

I don't eat deep-fried food. I like steamed rice and vegetables with *Nam Phrik*.
(84-year-old female)

I like vegetables.... I don't like stir-fried food and deep-fried food. I like vegetables with *Nam Phrik*. (61-year-old female)

I like vegetables with *Nam Phrik*. I don't like fatty pork or curry soup with coconut milk. Sour food is good, but sweet and fatty food is not good for my health. (70-year-old male)

As conveyed in the above statements, participants frequently mentioned *Nam Phrik*, which is a spicy chili sauce or chili paste used for dipping. *Nam Phrik* is different in each region of Thailand. In *Isaan*, *Nam Phrik* usually consists of fish, herbs, and *Pla Ra*.

Pla Ra is a very salty tasting sauce made from fish that is fermented with salt and roasted rice bran. Usually, the fish is stored in an earthen jar to ferment for three months to a year. In addition to *Pla Ra*, fish sauce is an essential ingredient in cuisine from all Thai regions, including *Isaan*. Fish sauce is made from fish that is fermented with salt and water. It is stored in wooden boxes to ferment until a fishy liquid is produced. This fishy liquid is clearer and thinner than *Pla Ra* sauce. Although the flavor of both *Pla Ra* and fish sauce is very salty, the salty taste and the unique aroma from each sauce enhance food flavors and, therefore, are common ingredients used in many *Isaan* dishes. In the present study, participants described their meals with fish sauce and *Pla Ra*, as presented in the following statements:

I can't eat tasteless food. I like salty and spicy diet, but not too spicy. Mostly, I eat rice with *Pla Ra*.... Sometimes I boil *Pla Ra* with dry chilies.... Previously, I liked to eat *Pla Ra Bong* [fermented fish paste made by mixing chopped *Pla Ra* together with herbs] with vegetables, but now I don't. As the provider advised, my BP will be higher. (65-year-old female)

I like fish sauce....We cook food and add fish sauce into *Nam Phrik*. (84-year-old male)

I like quite salty food. Everyone said that my food is salty.... He [doctor] advised me to have less salty food, but I don't like it... I eat it [fish sauce] and always add into my food.... I add it [fish sauce] until it tastes right... If I add them [*Pla Ra* and fish sauce] a bit in my food, I want to add them more. In my mind, I'm afraid and know that it isn't good for my BP. Anyway, I want to eat them. In contrast, I want to do as the doctor advises, but I can't do it. I can't reduce amount of fish sauce and *Pla Ra*. (61-year-old female)

I add it [*Pla Ra*] a little bit with fish sauce. It makes the food smell good.... I put in enough so it [the food] tastes right. (65-year-old male)

I don't eat salty food and chili. Mostly I can't eat food. I eat only rice with fish sauce. I eat less food and it doesn't taste good. I cook rice soup sprinkled with salt. Anyway, it's not much too salt. (60-year-old female)

I like salty. Salty increases good taste and is better than less taste.... I add *Pla Ra*. I know that salty diet will increase BP.... If I decrease salty, I will add more salt into dishes later. They're more delicious than less salty.... I tried to reduce, but it's not delicious. So, I added it more. (68-year-old male)

Monosodium glutamate (MSG) was another popular seasoning for most participants in the current study. Despite the negative effects of MSG, such as a burning

sensation on the back of the neck, nausea, weakness, and drowsiness (Raiten, Talbot, & Fisher, 1995), the participants added MSG to enhance their favorite foods. For instance, a 60-year-old female said:

I add it [MSG] a lot into *Nam Phrik* and soups. My family members eat it. Only four or five days, it is gone.... I can't quit. If I don't add it in food, I feel like losing something.... I know it's not good, but I still eat it.... Now I don't see its side effects. I don't want to quit it now. If I don't add MSG, it's like I'm missing something.

Another 60-year-old female said, "Providers advised me to avoid adding MSG into my food, but I can't do it. I put a little of it.... If my food doesn't have MSG, it isn't delicious." A 68-year-old male said, "I don't know about it. I just know that salt will increase BP.... I tried to reduce it, but it's not delicious. So, I added it more."

Some participants ate foods with MSG because another person, not the participants, cooked their meals and included the additive. An 83-year-old male said, "I don't cook my meals. My daughter cooks food for me, so she may add MSG in my meals.... I didn't know whether or not MSG affects my BP." A 65-year-old-female said, "Sometimes my daughter puts MSG during cooking, but I don't put as much as she does."

The Structure of the Phenomenon Experience

In the current study, lived experiences were derived from narratives provided by rural Thai older adults with poorly controlled hypertension. Their experiences were used to create the structure of the phenomenon of the experience among rural Thai older adults

with poorly controlled hypertension. In addition, the lived experience reflected the participants' views of hypertension.

Most participants perceived that hypertension is an asymptomatic condition or has no warning signs. Because of their asymptomatic condition, most participants perceived that they were as healthy as other persons. Many participants believed that healthy lifestyle changes were not essential to control blood pressure. Healthy lifestyle changes or life modifications that help reduce blood pressure include participating in physical activities, limiting dietary sodium intake, and adopting the Dietary Approaches to Stop Hypertension eating plan. Although some participants intended to change their lifestyles, they encountered barriers such as physical conditions, health knowledge, and responsibilities to their families. Therefore, their blood pressure control focused on the use of antihypertensive medication. They had a positive attitude towards the use of antihypertensive medications, and they believed that the medications could maintain their good health condition. Additionally, they believed medication alone would be adequate to control their blood pressure.

The participants experienced fear and worry in situations where they feared and worried about their high blood pressure and its complications, especially stroke. Their worry was also associated with concerns about their family. Some participants believed that their blood pressure was elevated due to their worrying about the health and financial status of their children. Some participants also experienced anger, especially participants who had conflicts with family members. Family conflicts were usually between a wife and a husband or between parents and their children.

In addition to emotional representations, the study participants experienced economic hardship in the forms of low income and household debt. Economic difficulties affected the participants' well-being and prohibited many participants from engaging in risk-reduction behaviors because they were mostly concerned with basic living expenses instead of health care concerns. They tried to control household expenses despite their inadequate incomes, and they attempted to pay off household debt with limited income resources. Instead of maintaining a healthy diet, they consumed only foods they could afford to buy. Furthermore, the study participants' debt and low income created additional stress and worry.

Daily living among the rural Thai older adults in the present study was associated with an agricultural society. Therefore, the physical activities of healthy participants focused on farming, gardening, and housework. Participants with physical health limitations often restricted their physical activity to light walking for short distances and only for short durations. Although the participants' local foods provided healthy diets with high fiber and low fat, their region's traditional foods also consisted of ingredients containing high sodium, such as fish sauce, *Pla Ra*, and monosodium glutamate.

Summary

From the lived experiences of rural Thai older adults with poorly controlled hypertension, four theme clusters and nine common themes emerged. The four theme clusters demonstrate perception of hypertension, emotional representations, economic difficulties, and folkways for living with high blood pressure. Perception of hypertension has three common themes: healthy due to silent symptoms, living as usual, and focusing

on medication use. The two common themes related to emotional representations are fear and worry, and anger. The economic difficulties are represented by two common themes: low income and debt. Finally, folkways for living with high blood pressure are expressed in two common themes. The first common theme is physical activities in terms of farming, gardening, housework, and light walking; the second is cuisine and seasoning from the *Isaan* (northeast) region of Thailand.

This chapter presented a brief description of the study participants. Giorgi's (2009) phenomenological method was used to analyze the lived experience among the participants with poorly controlled hypertension. The theme clusters and common themes were reported verbatim from the participants. In the next chapter, a summary of findings is presented, and the study's strengths and weakness are discussed. Also, implications for future work in this area of research are provided.

CHAPTER V

SUMMARY, DISCUSSION, AND IMPLICATIONS

This chapter contains seven sections: overview of the study, summary of the findings, discussion, implications, nursing research and further studies, study limitations, and conclusion. The first section provides an overview of the purpose of the study, the research question, the research methodology, and data analysis. The second section summarizes the conclusions drawn from the study's findings. In the third section, the findings are discussed and compared with existing literature. The fourth section describes implications of the findings for nursing practice, education, and health policy. The fifth section offers recommendations for the future development of health educational programs, dietary programs, and physical activity programs. The sixth section describes the limitations of the present study. The last section presents a conclusion that summarizes this chapter.

Overview of the Study

The purpose of the study was to explore the lived experience of rural Thai older adults with poorly controlled hypertension. The findings of this study proposed to answer the following research question: What is the lived experience of rural Thai older adults with poorly controlled hypertension?

Phenomenological inquiry, based on Husserl's philosophy and phenomenological approach, was used to explore the lived experience associated with poorly controlled hypertension among rural Thai older adults. The study utilized an interview guide and a

demographic survey to gather data. The interview guide was composed of open-ended questions and relevant probe questions (Appendix A). All interviews were performed as semi-structured interviews. The duration of each interview was between 45 and 60 minutes. Furthermore, the investigator used a demographic survey to collect background information on participants (Appendix B). The relevant demographic data of participants were gender, age, marital status, religion, education, occupation, economic status, length of illness, and values of blood pressure.

All interviews were analyzed according to the Giorgi (2009) method. Data analysis consisted of three main steps. The first step was read for sense of the whole. The researcher read the whole description to determine a general sense of the particular phenomenon. The second step of analysis was determination of meaning units. The investigator reviewed the description again and determined essential sentences or meaning units associated with the purpose of the study. The third step of analysis was transformation of the participant's natural attitude expressions into phenomenologically psychologically sensitive expressions. After identifying the meaning units, the investigator created common themes that correlated to the meaning units. Next, each interview was assigned a general description. In this process, common themes were organized into emergent themes or themes clusters.

Summary of the Findings

All 20 study participants were adults, aged 60 years or older. Thirteen participants were in the youngest category of older adults (60 to 74 years old). The majority of subjects were female ($n=14$). Most of the participants lived in rural areas of the Muang

District, which is located in Chaiyaphum, one of Thailand's northeastern provinces. All of the study's subjects were recruited from either Ban Khai Health Center or from Ban Non Samran Health Center. Most participants ($n=13$) were married. All participants were Buddhist. The majority of participants ($n=17$) had no formal education, and 11 participants were unemployed. All participants had a low-income status. Most of their incomes came from the elderly pension allowance (500 Baht, or about \$15.63, per person/month), which the Thai government offers to people who are 60 years old or older. The participants' other sources of financial support were from their children, relatives, and friends.

The lengths of diagnosis with hypertension among the study participants ranged from one to three years ($n=3$), from four to six years ($n=9$), and greater than six years ($n=8$). Nine participants had hypertension only, and 11 participants had hypertension in addition to other diseases. In the 3-month period before enrolling in the study, 11 participants had blood pressure levels diagnosed at Stage Two of hypertension. During the period of the study, 13 participants had blood pressure levels classified at Stage Two hypertension.

Four theme clusters emerged from the investigation of the lived experience of all participants with poorly controlled hypertension: perception of hypertension, emotional representations, economic difficulties, and folkways for living with high blood pressure. Each theme cluster revealed accompanying common themes. Perception of hypertension had three common themes: healthy due to silent symptoms, living as usual, and focusing on medication use. Emotional representations had two common themes. The first

common theme was fear and worry, and the second was anger. Economic difficulties contained two common themes: low income and debt. The fourth theme cluster, folkways for living with high blood pressure, had two common themes. The first common theme was physical activities in terms of farming, gardening, housework, and light walking. The second common theme was cuisine and seasoning from the *Isaan* (northeast) region of Thailand.

Discussion

Perception of Hypertension

The theme cluster titled “Perception of Hypertension” revealed what the study participants thought about hypertension. Based on their personal perceptions, participants reflected their understanding about the symptoms of hypertension, their health, hypertensive medication, and lifestyles changes.

Healthy Due to Silent Symptoms

Most participants in the present study perceived hypertension as a symptomless condition. This finding is consistent with the professional literature in which hypertension has been described as an asymptomatic disease or “the silent killer” (American Heart Association, 2010). For example, Schoenberg and Drew (2002) reported that half of their study participants believed that patients with hypertension may not experience symptoms throughout their illness. In addition, other researchers found that many patients with hypertension feel healthy because they are symptom-free (Rose, Kim, Dennison, & Hill, 2000).

Cooper (2009) reported the similar experience of a 41-year-old African American

with poorly controlled hypertension. The male patient commented on his asymptomatic condition:

“I pretty much ignored the problem from there. I know that high blood pressure is a silent killer. You really don’t feel the effects — I didn’t. I think my body has adjusted to it. There are times when I have come into the hospital and I’ve felt very good, but my blood pressure was off the scale. To a certain degree, it scares me that I can feel good walking around. I feel pretty strong, but I’m like a walking time bomb. So I guess, in a sense, I’ve developed a proclivity for self-delusion when it comes to high blood pressure. I don’t look at it as a disease. When I think about a disease, I think about cancer or HIV, those types of things that you can readily see and feel. High blood pressure: you don’t see it; you don’t feel it.” (p. 1261)

Because of the asymptomatic tendency of hypertension, some participants in the present study were unaware that their blood pressure was elevated and the complications of hypertension. A low-level perception of the complications of hypertension could contribute to poorly controlled blood pressure and lessen adherence to treatment. Furthermore, the perception of patients with hypertension influences poor blood pressure control and lack of adherence to their treatment. The patients perceive ineffectiveness of treatment, harm from treatment, lack of self-efficacy, ignorance of coping, and ignorance of behavior change (Cooper, 2009). Chen, Tsai, and Lee (2009) explained that patients who experience symptoms after a hypertension diagnosis or who experience symptoms predicting high blood pressure are more likely to self-manage than patients who are

symptom-free.

Living as Usual

Although life modifications, especially dietary changes, are accepted as an effective treatment for controlling blood pressure (Chobanian, et al., 2003), many participants in the present study did not make any lifestyle changes. Some of them continued to eat the same food and perform the same physical activities despite the elevation in their blood pressure. This finding may be explained by the difficulty and inconvenience of making lifestyle changes, especially adjustments related to dietary habits and food preparation. For example, one of the female study participants described how she had to prepare food for her entire family, which often prevented her from making changes to her own dietary habits:

My family eats meals together, and they can't eat tasteless food. It doesn't taste good. Sometimes I boil *Pla Ra* with dry chilies. I have to cook with a lot of salt. If I cook only for me, I can reduce the saltiness.... I know, but I have to prepare breakfast and dinner for others in the family. We have many members. If I separate a meal only for me, I can reduce the salt. Although I separate my food from them, it's not convenient for me to use many containers. So I don't separate the meals. I eat food with them.

Another participant explained he was unable to make dietary changes because his daughter prepared his meals. He said, "My daughter cooks for me and brings meals here. I don't cook my meals.... she may add MSG [monosodium glutamate] in my meals."

The present study's finding that individuals diagnosed with hypertension often

fail to modify their eating habits is consistent with the literature. As researchers have reported in previous studies, eating habits can be difficult to change due to food preparation and costs. For example, Schlomann and Schmitke (2007) noted dietary change is not practical when a person who wants to make diet adjustments has to prepare food for others or when others cook food for the person. Researchers reported similar findings in an earlier study involving nine focus groups with 88 Latinos and African Americans with poor financial status (Horowitz, Tuzzio, Rojas, Monteith, & Sisk, 2004). The researchers' objective was to examine participants' knowledge, attitudes, behaviors, and beliefs concerning hypertension. Several group members attributed their difficulties in changing diets to the inconvenience of cooking and separating healthy food for their own diets from food prepared for their family. They also said that cooking different foods increases food costs, as noted by a Hispanic female in the study who said, "Excuse me, maybe it would be difficult because if a person doesn't have money, for them to keep a diet, for them to buy differently for the rest of the family, maybe it would be difficult..." (p. 638).

It is important to note that dietary changes usually are not effective enough to warrant reducing the level of medication of patients diagnosed with hypertension (Horowitz, et al., 2004). Benefits from dietary changes are not a guarantee that patients will be free from hypertension symptoms or particular complications. Consequently, beliefs about taking medication throughout the rest of their life cause patients to resist changing their eating habits (Schlomann & Schmitke, 2007).

Focusing on Medication Use

Among the participants in the present study, focusing on medication emerged as a common theme of their perception of hypertension. Most participants believed that anti-hypertensive medication intake was a main approach to reduce their high blood pressure and symptoms of hypertension. They preferred taking medication rather than modifying their lifestyle, such as participating in physical activities, consuming a low-salt diet, or limiting alcohol consumption. Some participants modified the doses of hypertensive drugs without discussing the change with their health providers. They sometimes took a double dose of medication if they experienced severe symptoms.

The finding that rural Thai older adults with hypertension tend to focus on medication use as a primary means to control their blood pressure is consistent with the literature. For example, van Wissen, Litchfield, and Maling (1998) reported that several participants in their study did not attempt to change their lifestyle to reduce blood pressure, but they valued medication use as a primary option to reduce their blood pressure. In a study that explored the problem of high blood pressure control among Iranian patients, the researchers reported that many of their study participants wanted to take high blood pressure medications although they perceived that hypertension is not a severe condition (Mohammadi, Abedi, Gofranipour, & Jalali, 2002). In a separate investigation, study participants with hypertension believed in the necessity of taking medication, which resulted in their compliance with antihypertensive medication (Ross, Walker, & MacLeod, 2004).

Additional findings from previous research indicate that individuals with chronic

diseases often perceive medication use is vital to treating and, perhaps, even improving their condition. In a recent study, many participants believed that anti-hypertensive medications could control their blood pressure and prevent complications of hypertension such as stroke (Levwis, Askie, Randleman, & Shelton-Dunston, 2010). Similarly, in an earlier study involving patients with HIV/AIDS, participants perceived that their medication use would prolong their life (Gao, Nau, Rosenbluth, Scott, & Woodward, 2000). The researchers also reported that patients who experienced severe symptoms of HIV/AIDS perceived a high risk of complications if they poorly adhered to prescribed medication use.

However, as reported in the literature, some patients with hypertension experience negative outcomes from medications and, consequently, poorly adhere to prescribed medication use. For example, Lewwis et al. (2010) noted that some participants in their study described the following adverse effects from anti-hypertensive medications: swelling, lethargy, and increased urination. The study participants perceived that living with the side effects of medications caused more suffering than having hypertension. They said, “ ‘The medications are making me feel worse at night,’ ” and “ ‘I am better now without taking my blood pressure medicine’ ” (p. 202). The adverse outcomes of their condition were associated with adherence to their prescribed medication regimen. According to findings from a 2009 study that examined factors influencing poor medication adherence among patients with diabetes, individuals may deviate from prescribed medication use because they are concerned about side effects, the medications are difficult to take, or they distrust the effects of the medicines (Mann, Ponieman,

Leventhal, & Halm, 2009). Consequently, many participants in Mann et al.'s study reported not taking medication when their blood sugar level was normal or only when their glucose level was high.

Emotional Representations

The theme cluster titled "Emotional Representations" illustrated the study participants' emotional experience with their illness and conflicts within their families. They often responded to their experience with fear and worry, as well as with anger.

Fear and Worry

In the present study, fear and worry were common emotions among the participants. Although hypertension is an asymptomatic condition, participants who directly or indirectly experienced complications of hypertension were often fearful of and worried about high blood pressure. For example, a 60-year-old female said:

My BP [blood pressure] was 200. I couldn't walk, and I was weak in the side of my body. I called someone to help me while my condition was very severe in the morning. I hurried to go to a hospital.... My heartbeat seemed to stop. I regained consciousness at the Chaiyaphum hospital.... I try to reduce stress and eat a little. I have to live with the disease. I don't know when I will pass away. My sister died of hypertension. Many people are dead from hypertension.

Similarly, an 83-year-old male described his experience: "I worry about my BP.... My sister passed away from hypertension. Medicines couldn't help her. Her BP increased more and more. After her BP increased, she was shocked."

The emotional representations of fear and worry among participants in the present

study are similar to findings in DeCoster's (2003) study, which explored the emotions of patients with diabetes. Fear was the most common emotion among Decoster's study participants, who were especially fearful of complications due to diabetes. For example, one of the participants said, " 'Things happen to diabetic friends.... One fellow that I was fond of he had kidney failure and died. And another gal went blind. I have this to remind me how bad my disease is and it was scary' " (p. 87).

Mayne and Bonanno (2001) described the relationship between fear and health. They noted that although people should have a physical exam or see a physician at the first sign of a disease, most people only see a physician when they fail to manage their symptoms or the symptoms disturb their daily living. Emotions such as fear and distress influence their health behaviors. The researchers reported that patients with a high level of fear will have a higher level of symptom perception, exhibit greater health-care seeking behaviors, and are more likely to have a higher level of adherence to physicians' advice. People believe that health behaviors, such as having a cancer screening, can reduce their fear of disease. Therefore, as Mayne and Bonanno concluded, fear can motivate people to adopt positive health behaviors. Their finding supports results reported by researchers in an earlier study that explored the experience of hypertensive patients with long-term treatment (van Wissen, et al., 1998). The study participants felt fearful of the complications of hypertension: stroke and myocardial infarction. Their fear resulted in a good adherence to physicians' advice.

In addition to experiencing fear, participants in the present study also worried about their blood pressure and the complications of hypertension. Worry has been

defined as follows:

[Worry is] a chain of thoughts and images, negatively affect-laden and relatively uncontrollable. The worry process represents an attempt to engage in mental problem-solving on an issue whose outcome is uncertain but contains the possibility of one or more negative outcomes. Consequently, worry relates closely to fear processes. (Borkovec, Robinson, Pruzinsky, & Depree, 1983, p. 9)

According to Fox (2008), two common sources of worry are social evaluation and the possibility of physical harm or illness. Social evaluation can result in poor relationships, an aimless feeling about the future, and a lack of confidence. A person with emotional disorders tends to worry continuously and repeatedly and does not deal directly with problems. On the other hand, a healthy person tends to worry only in short-term thoughts and images. Sometimes, as Fox noted, worry intrudes on one's ability to solve a problem, even though the person may already have a possible solution for a problem.

As reported in the literature (Fox, 2008), fear and worry can induce people to adopt positive health behaviors. However, in the present study, fear and worry did not effectively motivate the participants to engage in preventive behaviors. For example, although an 83-year-old male participant worried about his blood pressure and indirectly experienced complications. He said, "I can't stop the human body getting worse. I think whatever will happen, we let it happen." A 60-year-old female participant expressed similar opinions about her health behaviors after she experienced a crisis. She said, "If my BP isn't too severe, I don't to see a doctor. I rest at home. When my BP increases, I borrow a BP monitor from a community health volunteer to check it." Possibly, in these

cases, fear and worry were not at the sufficiently high level to affect the participants' health behavior. It is also possible that participants felt a very high level of fear, which has been shown to induce avoidance or denial that is unhealthy, and often causes a reduction of adherence (Mayne & Bonanno, 2001).

Furthermore, it was difficult for participants with fears and worries about hypertension to engage in appropriate health behaviors such as seeking health care or adopting preventive behaviors because most participants in the present study had a low level of education, and many participants could not read. This is a barrier to seek health care information.

Anger

Many participants in the present study experienced the emotional representation of anger, which alternately contributed to and was caused by their symptoms of hypertension. They were not satisfied with their health condition, and dealing with their symptoms, such as dizziness and headaches, often made them angry. Conflicts with their family members also caused expressions of anger. Unfortunately, the participants' expressions of anger impacted their health by increasing their blood pressure. For example, a 60-year-old female participant said, "I always argue with my husband. We argue a lot. Whenever I argue with him, my BP increases."

The effects and presence of anger among the study's participants may be explained by findings from previous studies. According to Mayne and Bonanno (2001), anger induces a person to fight and flee, and it leads to increased cardiovascular activation, oxygen exchange, and glucose availability. The physical activation of anger,

thus, impacts the heart, lungs, and immune systems, just as anger expressed by the participants in the present study may have contributed to an increase in their blood pressure.

Anger among the participants in the present study may also have contributed to conflicts with their family members, which, in turn, exacerbated their symptoms of hypertension. According to Lewis, Haviland-Jones, and Barrett (2008), anger regulates interpersonal and social behaviors. At the individual level, anger regulates and organizes psychological and physiological processes associated with mastery and self-defense. Appropriate expressions of anger and regulation are main developmental tasks. Persons must learn their culture's "display rules" and they must learn how to express their emotion in ways that are culturally acceptable. In different cultures, emotion may be valued in different ways. As Fox (2008) noted, anger is acceptable in Western societies because it is considered a legitimate expression of a person's feeling. However, in Asian societies, anger indicates the person is not compliant with the social regulations maintaining the balance of the social group. Thus, the anger expressed by the Thai participants in the present study may have created and increased conflicts with their family members and, in turn, negatively affected their health.

As Mayne and Bonanno (2001) found in their study, emotion, behavior, and health are associated. Each person has a different capacity to tolerate different emotions. If an individual experiences an emotion as undesirable, unpleasant, or toxic, the person will avoid that feeling. Some individuals may be able to tolerate the feeling and be satisfied with the results. On the other hand, other people may seek to engage in

behaviors that regulate emotions. However, individuals may sometimes allow an emotion to negatively control their behaviors, such as abuses in eating, drug use, and drinking. If individuals are dominated by an emotion for a long duration, intensely, and frequently, the emotion can cause physical damage. In the present study, Mayne and Bonanno's findings are supported by the participants' emotional representations of fear, worry, and anger. The participants' emotions not only may have prevented them from seeking appropriate health care and adopting positive health behaviors but also may have increased their risk to the complications associated with hypertension.

Economic Difficulties

The theme cluster titled "Economic Difficulties" indicated the study participants' financial challenges: low income and debt. Economic difficulties were associated with the well-being, mental health, and physical health of the study participants.

Low Income

All of the participants in the present study had a low-income status. They primarily depended upon the Thai government for a monthly pension and on financial support from family and friends. Their meager income was likely associated with their hypertension and poor blood pressure control, as indicated in findings from previous studies.

Several studies involving a variety of regional populations have demonstrated that inadequate incomes are associated with hypertension. For example, in a Spanish study that examined the relationship between adult socioeconomic status and older adults with hypertension, the researchers found that a high prevalence of hypertension frequently

occurred in Spanish people, aged 60 years and older, with low social class and low level of education (Regidor, et al., 2006). Caucasians and African Americans in the lowest socioeconomic categories also exhibited a high risk of developing hypertension (Diez Roux, 2002). A Canadian researcher reported that uncontrolled hypertension was mostly found among low and middle income Canadians (Butler, 2001). According to Cooper (2009), financial difficulties, socioeconomic status, and unemployment influence adherence to treatment and access to health care, which, in turn, contribute to uncontrolled hypertension. Conversely, Wu et al. (2008) reported that individuals' awareness of hypertension, adherence to treatment, and blood pressure control are greater when their income increases.

Studies indicate low income is a barrier to controlling hypertension because financial difficulty often reduces one's ability to access appropriate health care services. For example, participants in Levwis et al.'s (2010) focus groups agreed that inadequate financial resources were a barrier that prevented them from medication adherence. In Boutain's (2001) study involving individuals who lived in rural south Louisiana, participants had low incomes, which included financial support received from social agencies and wages earned by employment. Their incomes were inadequate to pay for the health care cost of treating their high blood pressure. Webb and Gonzalez (2006) studied the burden of hypertension among African American women. Several participants reported their inadequate incomes limited their access to health exams, prescriptions, or yearly screenings and check-ups. Most of the study participants could not afford to see a doctor, receive follow-up care, and purchase medications. As one participant explained:

“There are a lot of us that can’t afford to go to a doctor, or if you go to a doctor, you can’t afford to follow up, you can’t afford the medication.... I don’t have the money. It’s the poor ones.” (p. 262)

Unlike the low-income status of participants in previous studies, the meager income of participants in the present study was not a limitation to their access to health care services and medications to control their blood pressure. The health care system of Thailand is a universal coverage system, and people, especially older people, can access primary health care services. All older adults with hypertension can receive medications and health services without great cost. Some villages have a hypertension clinic at health centers so that patients with hypertension can receive follow-up care near their houses.

Similar to the present investigation, two previous studies also found that access to healthcare is not always a key variable for poor blood pressure control. In a study conducted by Wang (2005), 92% of the participants with poorly controlled hypertension had health insurance and 86% received a regular source of care. Although many of the participants had private insurance and a regular health provider, their blood pressure remained uncontrolled. In another study, researchers reported that effective blood pressure control was higher among patients with private insurance than among patients with free-care or self-pay status (Hicks et al., 2004). The findings reported by Wang and by Hicks et al. are similar to the findings in the current study. Although participants could access health care services, their blood pressure and hypertension remained poorly controlled. Therefore, health care access is not the main cause of poorly controlled hypertension.

Nevertheless, in the present study, the participants' low income was associated with their ability to afford quality foods to help control their blood pressure. They often could not afford the high costs of purchasing special foods to modify their diets or deviate from their usual local foods, which are high in sodium. Indeed, most participants were more concerned about their basic living expenses than the expenses associated with dietary and healthcare concerns.

Findings from two previous studies also demonstrate the relationship between low-income status and the ability of individuals with hypertension to afford purchasing appropriate foods. Fongwa et al. (2008) explored adherence treatment factors among African American women with hypertension and found many of their study participants could not afford the foods needed to maintain a healthy diet. One of their study participants provided the following description of her situation regarding unaffordable, quality foods: “ ‘...you know you can't eat proper foods so you end up getting the macaroni and cheese ... you have children to feed ... you can't always get the fresh vegetables ... prices are high in the grocery store. ...’ ” (p. 161). She believed her situation was similar to others: “That is a big problem with black women. Black American women are going through that low income’ ” (p. 161). Another study also demonstrated the relationship of inadequate incomes with the inability to afford appropriate foods (Webb & Gonzalez, 2006). As one of the study participants explained: “We have to eat what we can afford.... some of us can't afford to find out what's wrong with us.... And we just go around thinking that we're fine. As far as the diet goes, there are some of us who cannot afford to eat certain foods that are

good for us. We have to eat what we can eat, and that's unfortunate for us." (p. 261)

Debt

In the present study, debt was associated with the participants' health, mental status, and well-being. Some participants believed their concern about debt increased their high blood pressure. Several participants also acknowledged that debt negatively influenced their mental health and well-being.

The present study's finding that debt negatively affects individuals' mental and physical health is consistent with the literature. According to the British Household Panel Survey (British Association for Counseling and Psychotherapy, 2008), households without debt have higher average levels of psychological well-being than households with consumer debt. Persons with debt experience worry and stress, which is positively associated with anxiety. Moreover, depression increases when people have more financial difficulties (Fitch et al., 2009). Jenkins et al. (2008) found that people with high debt have a high risk to have mental disorders. The researchers reported that, compared to people without debt, people with debt are somewhat more likely to have mental disorders, psychosis, neurosis, drug dependency, and alcohol dependency. Jenkins et al. also found that low income by itself does not cause people to have mental disorders as much as debt does. Fitch, Simpson, Collard, and Teasdale (2007) found that the burden of debt pressure causes people to ignore problems, which, in turn, can create personal and financial breakdowns. The researchers also reported that debt can cause people to become mentally less healthy. Conversely, mental health problems can cause debt. For example,

the United Kingdom's Office for National Statistics reported that mental health problems are mostly found in people who are in debt (Fitch et al., 2009).

Folkways for Living with High Blood Pressure

The theme cluster titled "Folkways for Living with High Blood Pressure" reflected the lifestyles of rural older Thai persons within an agricultural society. The participants' folkways included farming, gardening, housework, light walking, and local dietary habits and were associated with their high blood pressure. The participants' folkways also included cuisine and seasoning from the *Isaan* (northeast) region of Thailand, which also contributed to their high blood pressure.

Physical Activities in Terms of Farming, Gardening, Housework, and Light Walking

Instead of formalized physical activities, the rural, older, Thai participants in the present study preferred their culture's lifestyle-compatible or "folkways" physical activities that could be easily incorporated into their daily living, such as farming, gardening, housework, and light walking. Some participants still worked in rice fields or gardens, and their physical activities were usually performed in their work places. Some of the female participants had family responsibilities, so their physical activities focused on housework. Some of the older participants with physical limitations walked for short distances and only for short durations.

Findings from numerous studies suggest effective physical activities can reduce high blood pressure among individuals diagnosed with hypertension. For example, *The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure* states that systolic blood pressure is reduced (4–9

mmHg) when an individual engages in physical activity for at least half an hour a day (Chobanian, et al., 2003). Blumenthal et al. (2000) found that, among a study cohort of overweight men and women with Stage 1 to Stage 2 hypertension, a three-to-four-times-a-week exercise regimen of warm-up exercises for 10 minutes, cycle ergometry (stationary bicycle) and walking (or jogging) for 35 minutes, and cool-down exercises for 10 minutes reduced systolic blood pressure (4.4mmHg) and diastolic blood pressure (4.3 mmHg). Results from another study that included older, Japanese adults showed that high-intensity interval walking was effective to decrease the participants' systolic blood pressure (Nemoto, et al., 2007).

Aside from formalized physical activities such as aerobics classes, cycle ergometry, high-intensity interval walking, and jogging, lifestyle-compatible physical activities such as walking to the store, climbing stairs instead of taking an elevator, and movement associated with housework, job requirements, and other daily activities can also be effective in lowering blood pressure. For example, Staffileno, Minnick, Coke, and Hollenberg (2007) reported that routinely performed, lifestyle-compatible physical activity reduced the blood pressure in their sample of hypertensive patients. The participants were African American women who were aged 18 to 45 years old and were diagnosed with pre-hypertension or Stage 1 hypertension without treatment. Five days a week, they performed a lifestyle-compatible physical activity. The duration of their daily physical activity was 10 minutes, three times a day (Staffileno, Minnick, Coke, & Hollenberg, 2007). The participants' lifestyle-compatible physical activities were preferred activities that they were comfortable in performing as part of their daily

schedule and physical activity habits. The participants chose activities among the following options: walking to the store instead of driving, spending half a lunch break walking instead of sitting, walking up stairs instead of riding in an elevator, or getting up to move around during television advertisements. Participants who had child-care responsibilities were encouraged to choose activities that they could participate in with their children (e.g., hula hooping, jumping rope, dancing, or walking). Staffileno et al. found that the systolic blood pressure of participants in the exercise group that routinely performed lifestyle-compatible physical activities was reduced by 6.4 mmHg.

Although lifestyle-compatible physical activities can be helpful measures to treat hypertension, the folkways physical activities performed by the present study's participants did not seem to significantly impact their blood pressure control. An explanation for this finding might be that the participants' activities were not conducted at an effective level or consistently performed enough to reduce their blood pressure. Also, as Webb and Gonzalez (2006) reported, factors such as time restraints, family responsibilities, and busy schedules often present barriers to perform a healthy routine of physical activities.

The low-income level of the present study's participants may have created another barrier to participating in healthy physical activities. Lee and Laffrey (2006) noted that factors that influence older, hypertensive adults' participation in physical activities are gender, previous experience with physical activity, self-confidence to exercise, incentive to participate in physical activities, and income. They also reported that, compared to individuals with low incomes, individuals with high incomes participate more in physical

activities because they have a greater perception of their health, possess a higher motivation to maintain their health, perceive fewer barriers to physical activities, and are more concerned about their blood pressure. In the present study, the participants were older persons with a low income. Therefore, their income status may have contributed to a reduction in their performance level of physical activities.

Cuisine and Seasoning from the Isaan (Northeast) Region of Thailand

The study participants reported eating the traditional or “folkways” dishes indigenous to the *Isaan* (northeast) region in Thailand where they lived. The *Isaan* dishes they mentioned in the study’s interviews were grilled fish, steamed fish, fish soup, steamed vegetables, vegetable soup, and *Nam Phrik* (a spicy chili sauce or chili paste used for dipping). The seasonings they reported using were *Pla Ra* (fish fermented with salt and roasted rice bran) and fish sauce (a fishy liquid made from fish fermented with salt and water). *Pla Ra* and fish sauce are common ingredients of *Isaan* dishes: fish soup, vegetable soup, *Nam Phrik*, Papaya salad, and bamboo shoot salad. Although the participants did not mention Papaya salad and bamboo shoot salad in their interviews, the dishes are popular among *Isaan* people and other Thais.

In general, *Isaan* cuisine can be categorized as a healthy food because it contains high fiber, is composed mostly of vegetables, and is low in fat. However, most *Isaan* dishes also include ingredients and seasonings with high levels of sodium, such as *Pla Ra*, fish sauce, and monosodium glutamate. In addition, most of the study participants tended to follow their region’s folkways tradition of *Isaan* foods and flavorings.

Strong evidence from several studies indicate that reducing salt intake and maintaining diets that are high in fiber and low in fat can reduce blood pressure. According to *The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure* (Chobanian, et al., 2003), controlling sodium intake effectively reduces systolic blood pressure (from 2 mmHg to 8 mmHg). The report recommends that dietary sodium intake should not exceed 100 mmol per day, or that sodium and sodium chloride consumption should not exceed 12.4g per day and 6g per day, respectively. The Dietary Approaches to Stop Hypertension (DASH) eating plan—which focuses on high fibers and low-fat dairy products—is also recommended as a means to reduce systolic blood pressure (from 8 mmHg to 14 mmHg) (Chobanian, et al., 2003).

In a 2001 DASH Trial, researchers investigated whether or not the DASH diet could affect blood pressure. The 72 participants of this study were patients with Stage 1 isolated systolic hypertension. After implementing the DASH eating plan intervention, the researchers found that the participants' blood pressure values were reduced from 146/85 mmHg to 134/82 mmHg (Moore, Conlin, Ard, & Svetkey, 2001). In a subsequent DASH-Sodium trial, researchers reported on 188 participants who had three different levels of sodium intake. The lower, medium, and higher levels of sodium intake were 62, 104, and 140 mmol/d, respectively. After the subsequent DASH-Sodium trial, systolic blood pressure was changed from -32 mmHg to +17 mmHg. Furthermore, the systolic blood pressure of 33.5% of the participants decreased 10 mmHg or more (Obarzanek et al., 2003).

The association of dietary sodium reduction with reduced blood pressure is also clearly evident in findings from additional studies. A meta-analysis of longer-term trials demonstrated that a reduction of salt intake of 3 grams/day can predict a reduction of blood pressure. Systolic blood pressure was reduced from 3.6 to 5.6 mmHg, and diastolic blood pressure decreased from 1.9 to 3.2 mmHg (He & MacGregor, 2003). In another study, researchers investigated the reduction of blood pressure after implementing dietary salt restrictions among 12 participants with resistant hypertension. The study's findings showed that a reduction of systolic and diastolic blood pressure was 22.7/9.1 mmHg when the participants consumed a low-sodium diet (Pimenta et al., 2009).

Although *Isaan* cuisine is high in fiber and low in fat, traditional *Isaan* flavorings such as fish sauce and *Pla Ra* all contain high levels of sodium, which likely contributed to the high blood pressure among the present study's participants. The most common form of sodium is sodium chloride or salt. According to the Asian Food Information Centre (2006), humans should not intake more than 12.4g sodium/day, or the equivalent of 6g salt/day. The centre also reported that one tablespoon of fish sauce contains 1,390 mg of sodium, which is significantly higher than the 298 mg of sodium contained in one packet (50g) of potato chips. The centre warned that most people may consume more sodium than is required for their health. In addition, *Pla Ra* or fish fermented with salt and roasted rice bran also contains high sodium. Two pounds of fresh fish are fermented with one pound of salt (Faculty of Agriculture at Ubon Ratchathani University, n.d.).

Furthermore, sodium is found not only in flavorings but also in food preservatives such as monosodium glutamate, sodium saccharin, and sodium nitrite (Asian Food

Information Centre, 2006). Monosodium glutamate (MSG), or sodium salt of glutamic acid, contains 78% of free glutamic acid and 22% of salt (Leung & Foster, 1996). It acts like glutamate, a naturally occurring amino acid. Glutamate can be found in meat, fish, dairy products, mushrooms, and tomatoes. It enhances the flavor of food with a taste called “umami” or meaty taste (European Food Information Council, 2002).

All of the participants in the current study added MSG to their foods. For instance, a 75-year-old female participant said, “I put a teaspoon of MSG. I use it as much as fish sauce. If the taste is bland, I add more salt.” A 60-year-old female also described her MSG use:

I add it [MSG] a lot into *Nam Phrik* and soups.... I can't quit. If I don't add it in food, I feel like missing something.... I know it's not good, but I still eat it.... I don't see its side effects. I don't want to quit it now.

Despite the unhealthy nature of high levels of sodium in their foods and its impact on their blood pressure, the participants continued the cultural or folkways tradition of their region's dietary habits. As explained by a participant in Webb and Gonzalez's (2006) study, dietary habits associated with cultural traditions are passed on through the generations:

“Our foreparents [sic] grew the vegetables where they were allowed to grow vegetables. But they also ate the parts of the animals that had a high fat content. Some of us have changed our diets because we know it's better, but there are very many people who still eat at that same level, out of habit... Soul food.” (p. 259)

Study Implications

The results of the present study can be utilized in clinical practice, nursing education, and health policy. The details are presented in the following subsections.

Clinical Practice

The findings of this study can be helpful for health providers to better understand the daily living habits of rural, Thai, older adults with poorly controlled hypertension. An increased understanding will assist providers in modifying their practice to fit their patients' lifestyles. The study participants' perception of hypertension indicated that most participants were unaware of hypertension due to the asymptomatic condition of the disease. Even after receiving the diagnosis of hypertension, most participants did not change their daily living habits. Additionally, to treat their hypertension, most participants of the present study valued medication use more than lifestyle modifications, such as participating in physical activities and reducing their dietary sodium intake. Many participants ate salty foods, and their lifestyle-compatible physical activities did not reduce their high blood pressure.

Based on the study's findings, it is recommended that community health nurses assume the major role in approaching rural, older people with hypertension. In Thailand, community health nurses are the main providers of primary care services throughout the county's regions, including health promotion among all age groups, prevention & control of illness, and management of chronic illness at home and in the community (Hanucharunkul, 2007). Therefore, community health nurses are in an optimal position to encourage and motivate rural, older, Thai adults to be aware of the complications of

hypertension and assist them in developing an appropriate understanding of hypertension. An attitude of health promotion must be emphasized among rural, older adults, especially in the areas of physical activities and dietary habits.

It is important to note that many participants in the study were ashamed to ask questions about their health care or to express their health care needs. In Thai culture, clients give a high level of respect to health providers. Therefore, it is important that community nurses and other health providers offer not only culturally sensitive care but also two-way communication opportunities that involve both the provider and the client.

Based on the interview responses from study participants, health providers' advice frequently may not be practical for patients' lifestyle and inclinations. For example, some participants did not wish to participate in aerobic dance classes that providers established for people in their community. Instead of performing additional physical activities, they wanted to incorporate housework or activities related to their jobs into their exercise routine. For example, one participant preferred the physical activity that occurred while rice farming rather than walking or jogging, which providers had advised her to do. Therefore, community health nurses need to be more aware of the differing lifestyles of rural, older people and of their preferences and physical limitations. Community health nurses and rural, older adults can be encouraged to work together to select appropriate physical activities that suit the lifestyle and capacity of an older person. Appropriate physical activities for rural, older, Thai adults can be riding a bicycle instead of riding a motorcycle or driving a car, walking to a temple with friends, walking with

their grandchild to school, watering vegetables and trees, wiping floors during housework, and climbing stairs.

To promote appropriate dietary habits, community nurses can be encouraged to be more aware of culturally acceptable diets for rural, older people with hypertension. In this study, the common theme titled “Cuisine and Seasoning from the *Isaan* (Northeast) Region of Thailand” describes favorite dishes of older, rural, Thai people. The local foods are generally healthy, but they are also salty. Community nurses can help local, elderly people become better informed about the benefits of healthy foods (e.g., steamed fish, steamed vegetables, vegetable soups, etc.). To address the problem of salty seasoning, community nurses can offer helpful strategies, such as sodium dilution. However, nurses must take into account strategies that are practical for application in social settings and, again, they must be mindful of the preferences of rural, older people. For example, rural Thai older adults often prefer *Nam Phrik* that includes *Pla Ra* as an ingredient. Before adding *Pla Ra* into *Nam Phrik*, older adults with hypertension can be encouraged to dilute the *Pla Ra* with water in order to reduce the density of its sodium content. Therefore, the older adults can enjoy their favorite food and, at the same time, lower its sodium content.

The study’s theme clusters titled “Economic Difficulties” and “Emotional Representations” reflect the financial and psychological problems of rural, older people with poorly controlled hypertension. To help alleviate these problems, community health nurses can offer workshops during follow-up sessions at a hypertension clinic. The workshops can provide relevant material about financial and debt management and about

emotional management, including physical massage therapy. Because health providers often have insufficient knowledge about debt, external debt-counseling agencies can be invited to the workshops to advise clients on how to address specific debt-related issues (Rukin, 2006). Financial advisors can also be invited to offer recommendations on income management and planning. For a workshop on emotional management, a nurse or a psychologist should be a leader of this workshop in order to recommend strategies to manage fear, worry, anger, and stress. Because physical massage decreases tension and blood pressure (Day, Gillan, Francis, Kelloway, & Natarajan, 2009), community health nurses can also offer a workshop that provides physical massage therapy and training from massage therapists.

In addition to a psychologist, a Buddhist monk can also be invited to participate in emotional-management workshops to advise clients about practicing meditation. The benefits of meditation include enhancing mindfulness, improving mood, and reducing anxiety and fatigue (Zeidan, Johnson, Diamond, David, & Goolkasian, 2010). Moreover, most Thai people (including those from *Isaan*) are Buddhists. Buddhism plays a major role in the Thai way of life. A Buddhist monk could not only advise clients on how to practice meditation but also offer instructions on problem-solving techniques according to Buddhist principles.

Nursing Education

Nurse educators can use this study's findings in nursing courses (e.g., courses on older adult nursing, community and public health nursing, and health issues in culturally diverse populations). In various kinds of courses, the study findings can be adopted in

terms of case studies, and case conferences.

Older adult nursing focuses on nursing care for the unique needs of older patients. Hypertension is a common disease among older populations. To explore a chronic disease in older people, the lived experience of this study's participants can be helpful in describing perceptions of hypertension, the signs and symptoms of hypertension, hypertension management, and the use of hypertensive medication.

Furthermore, the study's findings display the health perceptions, socioeconomic problems, health problems, and health behaviors of participants in a community. For example, the study's theme cluster titled "Healthy Due to Silent Symptoms" reflects the participants' perception of hypertension. The theme clusters "Economic Difficulties" and "Emotional Representations" reveal the participants' financial problems and family conflict. The theme cluster "Cuisine and Seasoning from the *Isaan* (northeast) Region of Thailand" presents both healthy and unhealthy food choices of rural, Thai, older adults. These particular theme clusters can be useful for a course on community and public health nursing. In the classroom, nurse educators can employ this study's findings as a scenario, or as case studies, for discussing individuals' health problems in the community. In course activities, students could practice applying community and public health concepts from the case studies in order to encourage the development of students' professional roles in the fields of health promotion, health maintenance, health education, and applying cultural competence.

Findings from this study can also be used in nursing courses that examine health issues in culturally diverse populations. The study's theme cluster titled "Folkways for

Living with High Blood Pressure” represents the preferred, cultural physical activities and dietary habits of rural, Thai, older people with poorly controlled hypertension. Rice farming and vegetable gardening are presented as part of the cultural lifestyle of rural, Thai, older people with hypertension. This population’s popular *Isaan* dish, *Nam Phrik*, and preferred seasonings of *Pla Ra* and fish sauce indicate a culture of traditional dietary habits. These findings can be used as examples for learning about health disparities in culturally diverse populations.

Health Policy

The study’s qualitative outcomes clearly show that rural, Thai, older adults have inadequate knowledge regarding hypertension and healthcare. Therefore, policy measures that provide appropriate health education are recommended as a key task to help advance health promotion. For example, each health center can offer an effective health education program to patients who visit a hypertension clinic.

The study’s findings also suggest that policy measures are needed to develop a multidisciplinary approach that addresses the variety of needs of rural, older adults with poorly controlled hypertension. Participants in the study not only had to deal with health problems associated with hypertension, but they also had to confront emotional and financial difficulties that often exacerbated their health problems. For example, one study participant reported having a problem with debt, but her family members did not want to help her pay off the debt. She was so worried about her debt problem that she was unable to sleep at night. Consequently, her blood pressure levels increased. In a case such as this, the primary health provider could develop a care plan that involves a multidisciplinary

team of professionals to help improve the woman's health and her living condition: a health provider to recommend hypertension management, a psychologist to provide consultations regarding emotional management, and a financial or debt advisor to help solve financial difficulties. A multidisciplinary approach in the primary health care setting may improve health outcomes and provide benefits to clients who confront a variety of problems related to health, emotional issues, financial status, and family conflicts. Therefore, it is recommended that care related to controlling hypertension in rural communities be performed by a multidisciplinary team that includes nurses, physicians, psychologists, community developers, financial advisors or debt experts, and social workers.

Previous study findings demonstrate that a multidisciplinary approach to health care provides numerous benefits for patients. For example, in a study conducted by Burnham, Day, and Dudley (2010), a multidisciplinary chronic pain management team contributed helpful services to clients at the Central Alberta Pain and Rehabilitation Institute in Canada. The multidisciplinary team included a physical therapist, a family physician, a nurse, a physiatrist, a psychologist, a kinesiologist, and a dietician. Over the course of the team's services, the patients' pain and disability were significantly reduced. Similarly, in a randomized controlled trial, Hogg et al. (2009) created the Anticipatory and Preventive Team Care (APTCare) to improve quality of care and preventive care for patients with chronic diseases. The APTCare team consisted of a doctor, a nurse, and a pharmacist. Their multidisciplinary approach was effective, improving quality of care by 9.2% and preventive care by 16.5%.

Nursing Research and Recommendations for Developing Programs

Results of the study can be used to investigate, test, and develop specific health care interventions, such as health educational programs, physical activity programs, and dietary programs.

Based on the study participants' perception regarding hypertension, most rural, older adults may need health care knowledge and information regarding hypertension. Because Thailand does not have national guidelines that address health education for patients with hypertension, health education programs must be developed and tested in order to improve patients' knowledge. The content of these programs must emphasize the symptoms and complications of hypertension, suggestions for life modifications to reduce high blood pressure, and recommendations for taking the appropriate medicine.

The study's findings also indicate that health providers' knowledge of local foods can be extremely important in providing guidance for creating a diet plan in health care interventions. Diet programs can be useful for rural, older adults with hypertension. The diet plan must also take into account rural, older adults' food preferences and culturally acceptable diets. The diet plan can include local foods and is practically applied in the rural context. Additionally, people in all socioeconomic statuses must be able to afford the diet program.

Another recommendation is based on the study's finding that rural, older adults prefer lifestyle-compatible physical activities such as farming, gardening, housework, and light walking. The daily activities of the study's participants could be used as background information to design and test physical activity programs that fit the needs of rural, older

adults (e.g., a lifestyle-compatible physical activity program and a walking program). Based on the findings of the current study, a lifestyle-compatible physical activity program for rural, older adults can include aerobic activities such as bicycling to rice fields or vegetable gardens, raking with and pushing a wheel plow, and brisk walking to rice fields. Muscle-strengthening activities should also be included in the program. These activities could include digging, lifting equipment, carrying tools, climbing stairs, and wiping, as part of the daily routine of farming, gardening, and housework.

According to the U.S. Department of Health and Human Services (USDHHS, 2008), the level of aerobic physical activities should be conducted at a moderate level, a powerful level, or as a combination of moderate and vigorous levels in order to meet health benefits. An activity performed at the moderate level is identified as a moderate-intensity activity that can increase the heart rate and breathing more than a nonactivity. An individual should perform the moderate-intensity activity at least 150 minutes per week. An activity performed at the powerful level is identified as a forceful-intensity activity that extremely increases the heart rate and breathing. The powerful-level physical activity should be performed 75 minutes per week. The USDHHS also recommends that older persons perform aerobic activity three or more days per week. Furthermore, older persons are encouraged to engage in muscle-strengthening activity at least two days a week. Muscle-strengthening activities should involve moving major muscle groups that are not usually affected during normal daily activities: shoulders, chest, back, arms, abdomen, hips, and legs. To achieve maximum health benefits, the USDHHS recommends older adults perform at least one set of 8 to 12 repetitions of each activity.

Balance training is important for older persons in order to reduce their risk of falls. Therefore, balance-training activities are also recommended as part of a lifestyle-compatible physical activity program. Balance training consists of sideways walking, standing from a sitting position, toe walking, heel walking, and backward walking. Older people should perform these activities at least three days a week (USDHHS, 2008). To test the effectiveness of a lifestyle- physical activity program among rural, older adults with hypertension, future studies should be designed as randomized control trials.

Study Limitations

This study had several limitations. Two limitations are based on its phenomenological design, which explored the lived experience among rural, Thai, older adults with poorly controlled high blood pressure. The study's findings represented individuals' experience; therefore, the findings cannot be generalizable to a larger population. Also, the findings were generated from verbal responses; therefore, the findings were obtained only from participants who could clearly verbalize their experiences with poorly controlled high blood pressure.

Another study limitation involved the process of data gathering. The participants' interviews were performed at their homes. On occasion, an interview was interrupted by the participant's spouse or other family members, which may have influenced the study participant's responses. For example, one participant's wife wanted to participate in the interview; her presence might have influenced the study participant's interview responses.

Finally, the study is also limited because of the relationship I had with the study's

participants during the interviews. Prior to the interviews, I provided information about my study and introduced myself as a doctoral student in nursing at The Catholic University of America. I also offered a blood pressure screening for the study participants in order to have their current blood pressure values. Consequently, the study participants perceived my professional role in the field of health care. Some participants may have been reluctant to express particular issues during the interviews (e.g., satisfaction or dissatisfaction with health care services, their unhealthy behaviors, or very personal topics).

Conclusion

This study aimed to explore perceptions of rural Thai older adults while they are dealing with poorly controlled hypertension. A phenomenological method developed from Husserl's philosophy was used to guide the study. All interviews were analyzed following Giorgi's methodology.

The findings revealed four theme clusters: perception of hypertension, emotional representations, economic difficulties, and folkways for living with high blood pressure. The perception of hypertension included three common themes: healthy due to silent symptoms, living as usual, and focusing on medication use. In the emotional representation cluster, the first common theme was fear and worry; the second common theme was anger. The theme cluster of economic difficulties revealed two common themes: low income and debt. The fourth theme cluster, folkways for living with high blood pressure, had two common themes. The first common theme was physical activities in terms of light walking, farming, gardening, and housework. The second common

theme was cuisine and seasoning from the *Isaan* (northeast) region of Thailand.

The findings for this study add to the literature of existing research and theories. Although this study was limited by its methodological restrictions, the findings can be utilized by future researchers in indentifying pertinent health educational programs, physical activities programs, and dietary plans for rural, Thai, older adults with poorly controlled hypertension.

Appendix A
Interview Guide

The Interview Guide

Opening statement for experience with high blood pressure:

1. What is it like to live with poorly controlled high blood pressure?

Relevant probes:

How do you know you have high blood pressure?

How has your life changed when you were diagnosed with hypertension?

What is your major concern about your high blood pressure? Why?

What are the factors that affect how you take care of yourself with this disease?

How important is it for you to stick to your doctor's or nurse's treatment plan?

Opening statement for experience with poorly controlled hypertension:

2. Can you describe your experience when your blood pressure is poorly controlled?

Relevant probes:

- a) How do you feel when your BP is increasing?
- b) How do you feel when your BP is uncontrollable?
- c) In your opinion, what are the causes of your poorly controlled hypertension?
- d) How do you control the causes?

- e) Once your BP became poorly controlled, how did your life change? How do you deal with this problem?
- f) What do you need [or do] to keep your blood pressure under control?
- g) Do you need someone to help you to manage high blood pressure? Who is that person (or persons)? How do they help you?
- h) How does living with someone affect poor control of your blood pressure?
- i) Do you think it is important for you to take antihypertensive medicines all the time? Why or why not?
- j) What stops or prevents you from sticking to your doctor's or nurse's treatment plan for your high blood pressure?
- k) How do you feel when you lose regular treatment?

Appendix B
The Demographic Survey

The Demographic Survey

1. Participant number: _____ Date: _____
2. Gender: ___ Male ___ Female
3. Age: _____
4. Marital Status: ___ Single ___ Married ___ Divorced ___ Separated
_____ Widowed
5. Religion: ___ Buddhist ___ Islam ___ Christian
6. Education: ___ Grade school (___1 ___2 ___3 ___4 ___5 ___6)
_____ Intermediate school ___7 ___8
_____ High school ___1 ___2 ___3 ___4
_____ Technical School
_____ College (Undergraduate) ___1 ___2 ___3 ___4
_____ Graduate school ___ Master ___ Doctorate
7. What is your occupation? _____
8. How long have you been diagnosed with hypertension? ___ Years and ___ Months
9. Blood pressure _____/_____ mmHg
10. Do you have other health problems?
___ No ___ Yes If yes, they are _____.
11. How do you pay for your
healthcare? _____
12. Where do you access your healthcare? _____

Appendix C
Example Tables of Transformation

Transformation of Case Number 2

Meaning Units	Description for Meaning Units and Themes
<p><i>Participant 2:</i> I felt weary in my mind, why it highly increased.</p>	<p>The participant stated that his feeling was unhappy when his blood pressure increased or was high. (Fear and Worry)</p>
<p><i>Interviewer:</i> What do you think about hypertension? <i>Participant 2:</i> I'm afraid of shock by the disease. Someone said hypertensive patients are easy to shock.</p>	<p>The participant stated that he feared health complications due to hypertension because his risk for experiencing a stroke was high. (Fear and Worry)</p>
<p><i>Interviewer:</i> Have you ever tried to reduce MSG [monosodium glutamate] <i>Participant 2:</i> Yes, I tried to reduce, but it's not delicious. So, I added it more.</p>	<p>The participant stated that he tried to reduce the amount of MSG in his foods but was unsuccessful because he did not enjoy eating foods without MSG. (Cuisine and Seasoning from the Isaan (Northeast) Region of Thailand)</p>

Transformation of Case Number 3

Meaning Units	Description for Meaning Units and Themes
<p><i>Participant 3:</i> My husband and I always eat boiled vegetables with <i>Nam Phrik</i>. When I have fish, I cook a sour fish soup with vegetables. We don't like to eat stir-fried food.</p>	<p>The participant stated that she and her husband preferred local foods such as boiled vegetables, <i>Nam Phrik</i>, and a sour fish soup with vegetables. They did not like stir-fried food. (Cuisine and Seasoning from the Isaan (Northeast) Region of Thailand)</p>
<p><i>Participant 3:</i> In the past, I had debt about 200,000 Baht [\$6,060], and the titles to my land were taken by someone. Now, I've gotten the titles back, but I can't forget this problem.</p>	<p>The participant stated that she had high debt. The titles to her land were taken by someone else. Although she had retrieved the titles to her land, she stated she could not forget her problem with debt. (Debt)</p>
<p><i>Participant 3:</i> My daily life is still normal. Although my BP [blood pressure] has increased, the headache was not too severe.</p>	<p>The participant stated that her daily lifestyle remained unchanged despite her increased blood pressure. The light headache she experienced due to high blood pressure did not cause her to change her lifestyle. (Living as Usual)</p>

Transformation of Case Number 4

Meaning Units	Description for Meaning Units and Themes
<p><i>Participant 4:</i> I worried too much about money. My kids took my money away during this month. When I asked for payment, my daughter said that she didn't have enough money to pay me back. Now I don't have money too. Sometimes I was unable to sleep because of thinking about the money again and again. I have to take a sleeping pill, and then I could sleep early at night. I thought about the money always before I got up from my bed.</p>	<p>The participant stated that she was very worried about money because her children had taken her money and had never paid her back. Because of her worry about having no money, she could not sleep without the use of sleeping pills. However, the sleeping pills were not always helpful. She thought about the money whenever she woke up. (Low Income)</p>
<p><i>Participant 4:</i> I don't exercise, but I do housework sometimes. I can't do housework often because I'm so tired and have chest pain. So, my husband does housework. I just walk to a market two or three times per day.</p>	<p>The participant stated that her physical activities were restricted to housework and light walking because she had limitations in her physical condition. (Physical Activities in Terms of Farming, Gardening, Housework, and Light Walking)</p>

Transformation of Case Number 7

Meaning Units	Description for Meaning Units and Themes
<p><i>Participant 7:</i> I don't worry because I don't have a headache. I'm fine, although my BP [blood pressure] increases.</p> <p><i>Interviewer:</i> Your BP was 160 in January. Besides medication intake, how do you control your BP?</p> <p><i>Participant 7:</i> Nothing, just take medications.... I take medications to control BP. If medications can't help me, there is nothing to help me.</p> <p><i>Participant 7:</i> I think that I'll let my BP be high if it is. I don't worry about it. Medication can't help me, so I will accept the impact.</p>	<p>The participant stated that he was healthy because he had no headache. High blood pressure did not affect his health because hypertensive symptoms were not present. (Healthy Due to Silent Symptoms)</p> <p>The participant stated that he used antihypertensive medications to reduce high blood pressure. Medication use was his only method to reduce his blood pressure. (Focusing on Medication Use)</p> <p>The participant stated that he would not do anything else if the antihypertensive medication could not reduce his blood pressure, and he accepted the effects of high blood pressure. (Focusing on Medication Use)</p>

Transformation of Case Number 10

Meaning Units	Description for Meaning Units and Themes
<p><i>Participant 10:</i> I and my husband get 500 Baht per person from the elderly pension allowance, so our household income is 1,000 Baht [about \$31.25] per month. I also have income from selling woven bamboo baskets. All income is used for only meals.... Sometimes, I don't want to be hungry because I will lose money for food. I eat only food that I can find around my house.... I don't buy them [vegetables] because I can get them around here.</p>	<p>The participant said that she and her husband had a low household income that came from their elderly pension allowances and from selling woven bamboo baskets. Because the couple's income was only used to pay for foods, the participant did not want to eat anything so she could save her money. She only bought foods that she could afford and local foods that she could find in her area. (Low Income)</p>
<p><i>Interviewer:</i> How did you take care of your health when you had vertigo and dizziness? <i>Participant 10:</i> I'm fine and live as usual.</p>	<p>The participant said that she did not modify her lifestyle, even though she experienced hypertensive symptoms. (Living as Usual)</p>

Transformation of Case Number 14

Meaning Units	Description for Meaning Units and Themes
<p><i>Participant 14:</i> I feel normal because I don't have a headache or get sick. Someone said hypertension symptoms are dizziness and headache, but I haven't had these symptoms.</p>	<p>The participant said that she did not have a health problem because she did not have any hypertensive symptoms. (Healthy Due to Silent Symptoms)</p>
<p><i>Participant 14:</i> At first, I was very worried when a doctor said I had hypertension. However, I wonder why I don't have any symptoms although my BP [blood pressure] is high. So, I don't worry about it. My health is all right, and I don't have diabetes either.</p>	<p>The participant said that, initially, she was very worried when she was diagnosed with hypertension. After the diagnosis, she could not understand why she did not have any symptoms despite her high blood pressure. Due to the asymptomatic condition of her hypertension, she did not worry about high blood pressure. (Healthy Due to Silent Symptoms)</p>
<p><i>Participant 14:</i> If I don't have money, I will borrow money from a merchant. Whenever I have money, I return it back to him.</p>	<p>The participant said that she did not have a lot of money and that sometimes she borrowed money from a merchant. When she had enough money, she paid off her debt. (Debt)</p>

Transformation of Case Number 15

Meaning Units	Description for Meaning Units and Themes
<p><i>Participant 15:</i> Two [of my] sons went abroad to work, and they didn't send money back to pay the debt that I owed to someone. The interest was three percent. I paid the interest instead of them. The interest was 4,000 to 6,000 Baht [about \$125 to \$187.50] per month. The problems with both sons make me think a lot. In the past, I had a lot of debt until they almost confiscated my house and lands. My children can't help me. Someone will sue me. My house was almost confiscated by a bank.</p>	<p>The participant said that her sons' needs caused her debt and that her sons did not help to pay off the debt. Thus, she was solely responsible for the debt and its high interest rate. Her lands and house were almost confiscated by a bank. Her children did not help her pay off the debt and its interest. Based on this situation, she was very stressed and worried. (Debt)</p>
<p><i>Participant 15:</i> I'm afraid of being disabled. My children will have a problem with me. Because of it, I don't want to go anywhere when my BP [blood pressure] increases. I have to rest at home.</p>	<p>The participant said that she feared becoming disabled. Her disability would create difficulties for her children because they would have to take care of her. Thus, she attempted to take care of her high blood pressure. (Fear and Worry)</p>
<p><i>Interviewer:</i> Do you add MSG [monosodium glutamate] into your food? <i>Participant 15:</i> I add a lot of MSG into <i>Nam Phrik</i> and soups. If I don't add MSG in food, it feels like losing something. It makes my food delicious. I'm accustomed to it. Providers advised me to quit it, but I can't do it. I know it's not good, but I still eat it.</p>	<p>The participant said that she always used a lot of MSG as an ingredient in her foods. She had to have MSG with her foods in order to enhance their flavors. Although she was advised to quit using MSG and she knew that MSG is not good for her health, she added it into her foods. (Cuisine and Seasoning from the Isaan (Northeast) Region of Thailand)</p>

Appendix D
Informed Consent

CUA



THE CATHOLIC UNIVERSITY OF AMERICA

*School of Nursing
Washington , D.C. 20064
202-319-5400
Fax 202-319-6485*

Informed Consent Form

Name of Study: The Lived Experience of Rural Thai Older Adults with Poorly Controlled Hypertension

Investigator: Atiporn Samranbua, RN, MSN, Doctoral Candidate
Telephone: (044) 80-0261 (Thailand), (571) 217-0791 (USA)
E-mail: 60samranbua@cardinalmail.cua.edu

Dissertation Director: Sister Mary Elizabeth O'Brien, PhD, RN, FAAN
Telephone: (202) 319-6459 (USA)
E-mail: obrienm@cardinalmail.cua.edu

Description and purpose of the study: I understand that I am being asked to participate in this study that is being conducted by Atiporn Samranbua, a doctoral candidate at The Catholic University of America. I understand the purpose of the study, which is to explore the lived experience of rural Thai older adults with high blood pressure.

Description of the procedures: If I agree to learn more about this study, I will be given the purpose and procedures of this study. Prior to the participation, I can read and understand the consent form. Then I will sign the consent form. First, the researcher will offer a blood pressure screening for me. Second, I will be asked to complete a demographic survey which will ask me about age, marital status, religion, education, occupation, length of illness, and health care access. Third, I will be interviewed about my experience with high blood pressure, and my interview will be audiotaped. The interview will be expected to take about 45-60 minutes. Once there are topics causing emotional discomfort, I can decline to answer any question. If the researcher requests me to participate in a second time to clarify what I said or meant during my first interview, I am willing to cooperate.

Risk, inconveniences, and/or discomforts that may arise: I understand that there are no known risks associated with participating in this study. I may choose not to answer any of the study questions if the questions make me uncomfortable.

Expected benefits: I understand that participation in the study will not help me personally, but my information from the interview may assist other health providers to better understand my daily living behavior patterns with poorly controlled hypertension.

This knowledge may provide advantages for the providers to modify their practice to fit my life styles. This understanding could contribute positively to the response to my problems within the context of rural regions.

Confidentiality: I understand that my information will be confidential and anonymous, but the information is not anonymous to the researcher. My name will be replaced by the researcher using initials or pseudonyms, and my name will not be on the tape record and the transcript. To protect my confidentiality, all data will be kept in a secure and locked filing cabinet, and electronic data will be kept on a computer with a secure username and password. No one can access my data except the dissertation director and the investigator. After completion of the study, my data will be kept for five years and then must be destroyed (i.e. erased or shredded). If this study is published in papers or presented at meetings, my name will not be used in these presentations or papers. I understand that my research records may be inspected by federal regulatory authorities or may be subpoenaed by court order.

Withdrawal from the study: I understand that my participation in this research is completely voluntary. I may choose not to take part at all. If I decide to participate in this research, I may stop participating at any time. If I decide not to participate in this study or if I stop participating at any time, I will not be penalized or lose any benefits for which I may otherwise qualify.

I have had an opportunity to ask any questions about the research and/or my participation in this study. These questions have been answered to my satisfaction.

I understand that I will receive a copy of this consent form after the entire signatures have been obtained.

I volunteer to participate in this study.

Participant's Signature

Date

Investigator's Signature

Date

Any complaints or comments about your participation in this research project should be directed to Secretary, Committee for the Protection of Human Subjects, Office of Sponsored Programs and Research Services, The Catholic University of America, Washington, D.C. 20064; Telephone 202.319.5218

Appendix E
IRB Approval Certifications



THE CATHOLIC UNIVERSITY OF AMERICA

Office of Sponsored Programs and Research Services
Washington, D.C. 20064
202-319-5218

December 18, 2009

Ms. Atiporn Samranbua
13638 Clarendon Spring Court
Centreville, VA 20121

Dear Ms. Samranbua:

Your research project titled "The Lived Experience of Rural Thai Older Adults with Poorly Controlled Hypertension," was certified by the Committee for the Protection of Human Subjects (CPHS) as meeting the requirements of the Federal regulations governing protection of human subjects.

CPHS will maintain a copy of your submission on file. You are obligated to follow the research protocol and procedures for obtaining informed consent as you have specified. If you wish to initiate any changes in the research protocol or the informed consent procedure, you should submit this request to CPHS in writing.

This approval will expire on December 1, 2010. If the project continues beyond this period, please resubmit your materials for renewal in a timely fashion so that your research may continue uninterrupted. You are required to use the stamped and dated consent forms that accompany this letter.

Good luck with your research.

Sincerely,

Ralph Albano
Secretary
Committee for the Protection
of Human Subjects

cc: Sr. Mary Elizabeth O'Brien



Chaiyaphum Provincial Public Health Office
Muang District, Chaiyaphum Province
36000 Thailand

October 8, 2009

Name of study: The Lived Experience of Rural Thai Older Adults with Poorly Controlled Hypertension

Investigator: Atiporn Samranbua, RN, MSN, PhD Candidate

Document Reviewed: 1. Dissertation proposal

2. Instruments for data gathering

3. Informed consent form

I, as Chaiyaphum Public Health Physician, have approved this study that will be carried out as a doctoral dissertation. This letter certifies that the aforementioned documents have been reviewed.



Choorat Koosakulrat

Choorat Koosakulrat, M.D.

Chaiyaphum Public Health Physician

Chaiyaphum Provincial Public Health Office

10/08/2009

Date of Approval

The Director of Ban Non Samran Healthcare Center
Ban Non Samran Healthcare Center
Muang District, Chaiyaphum Province
Thailand

October 7, 2009

Name of study: The Lived Experience of Rural Thai Older Adults with Poorly Controlled Hypertension

Investigator: Atiporn Samranbua, RN, MSN, PhD Candidate

Document Reviewed: 1. Dissertation proposal

2. Instruments for collecting data

3. Informed consent form

The aforementioned documents have been reviewed. I, as The Director of Ban Non Samran Healthcare Center, have approved this study and provided permission for Ms. Atiporn Samrabua to collect data in this setting.



Chaicharn

Chaicharn Klongklaw

The Director of Ban Non Samran Healthcare Center
Ban Non Samran Healthcare Center

10/07/2009

Date of Approval

The Director of Ban Khai Healthcare Center
Ban Khai Healthcare Center
Muang District, Chaiyaphum Province
Thailand

October 7, 2009

Name of study: The Lived Experience of Rural Thai Older Adults with Poorly Controlled Hypertension

Investigator: Atiporn Samranbua, RN, MSN, PhD Candidate

Document Reviewed: 1. Dissertation proposal

2. Instruments for collecting data

3. Informed consent form

I, as The Director of Ban Khai Healthcare Center, have reviewed the documents of this study. I understand the purpose and description of the study.

Therefore, this letter certifies that the study has been approved, and Ms. Atiporn Samranbua has received permission for data gathering in this setting.



Juthamas.....

Juthamas Pansanga

The Director of Ban Khai Healthcare Center

Ban Khai Healthcare Center

10/07/2009

Date of Approval

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