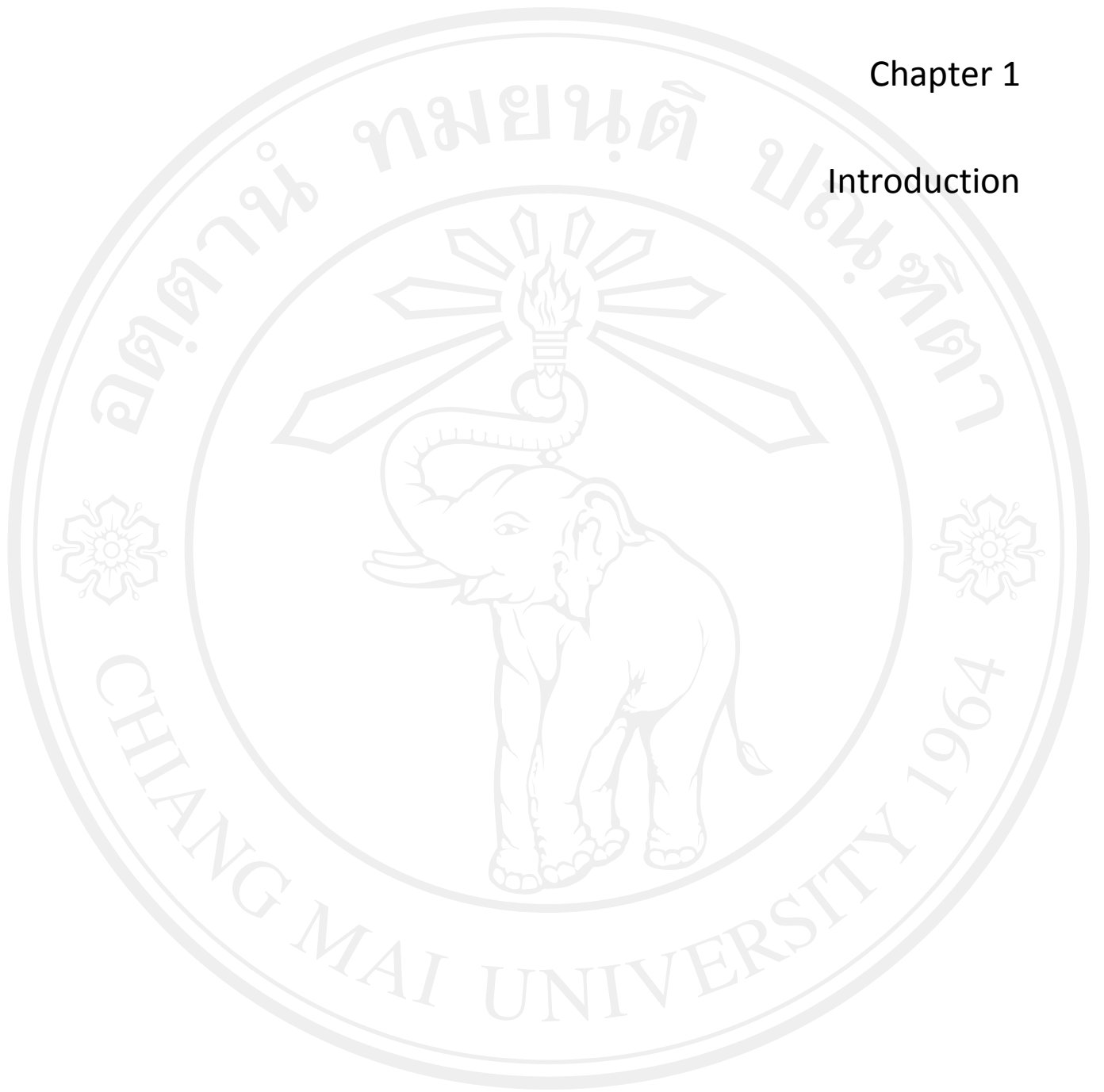


Chapter 1

Introduction



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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Menopause may be an action that happens in women's lives as a part of traditional age<sup>(1)</sup>, usually in their early 50s.<sup>(2)</sup> In Siam, the common age at biological time was  $49.5 \pm 3.6$  years and was not associated with weight, height, age at start, level of education, smoking or use of oral contraceptives.<sup>(3)</sup>

### 1.1 Definition and natural history of menopausal symptoms

Menopause is outlined by the planet Health Organization and therefore the Stages of fruitful Aging Workshop (STRAW) social unit because the permanent stop of discharge periods that happens naturally or is induced by surgery, therapy, or radiation. Natural biological time is recognized when twelve consecutive months while not discharge periods that don't seem to be related to a physical (e.g., lactation) or pathologic cause. Biological time transition usually begins with variations long of the oscillation. The secretion changes throughout the biological time transition will span many years.<sup>(1, 2)</sup> In 2011, STRAW+10 updated and divided the female life into 3 broad phases: fruitful, the biological time transition, and postmenopause. These 3 phases enclosed a complete of seven stages focused on the FMP (Stage 0). The fruitful section was divided into Stages -5, -4, and -3 like early, peak, and late, severally. The biological time transition section consisted of Stage -2 (early) and Stage -1 (late), and therefore the postmenopause section contained Stages +1 (early) and +2 (late). Stage -3 was characterised by regular discharge cycles and increasing levels of gonadotrophic hormone. Stage -2 was characterised by variability in oscillation length and inflated levels of gonadotrophic hormone. Stage -1 was characterised by onset of skipped cycles or symptom of a minimum of sixty days and continuing elevation of gonadotrophic hormone.<sup>(4)</sup>

Menopausal symptoms vary among girls at every stage of the biological time transition and additionally vary through these stages.<sup>(5)</sup> Many women have few or no symptoms; these women don't seem to be in want of medical treatment. Biological time or perimenopausal women World Health Organization have biological time evoked by surgery, therapy, or radiation are additional possible to expertise pestiferous and even disabling symptoms. These girls want safe and effective treatment.<sup>(2)</sup> It is tough to differentiate biological time symptoms that are actually related to biological time from those thanks to aging.<sup>(2)</sup> But, some factors related to earlier biological time embrace lower weight, expelling length, null parity, smoking, never-use of oral contraceptives, lower socioeconomic standing, and race or quality.<sup>(5)</sup> The subsequent symptoms are powerfully or moderately coupled to menopause: hot flashes, night sweats, channel status, and sleep disturbance. These symptoms are higher in early and late perimenopause than in pre- or postmenopause, except channel status (whose prevalence continues to rise across these stages).<sup>(2, 5)</sup>

To date, most longitudinal studies have followed girls for two to eight years, that isn't long enough to outline the explanation of biological time symptoms, throughout the biological time transition and into later life. Spontaneous premature

gonad failure cannot be thought of the equivalent of associate early natural biological time as a result of alternative unwellness processes is also concerned that have vital clinical implications.<sup>(5)</sup>

## 1.2 Definition and natural history of hypertension in menopause

Hypertension is high pressure level. Pressure level is that the force of blood pushing against the walls of arteries because it flows through them. Arteries square measure the blood vessels that carry ventilated blood from the center to the body's tissues.<sup>(6)</sup> The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VII) is predicated on the typical of 2 or additional properly measured sitting BP readings on every of 2 or additional workplace visits. Three categories of cardiovascular disease outlined as 1) prehypertension: SBP 120-139 mmHg or DBP 80-89 mmHg, (2) Stage one Hypertension: SBP 140-159 mmHg or DBP 90-99 mmHg, (3) Stage two Hypertension: SBP 140-159 mmHg or DBP 90-99 mmHg.<sup>(6)</sup>

Hypertension is often accompanied by other cardiovascular risk factors. Cardiovascular disease is commonly in the midst of alternative vas risk factors, e.g., obesity, dyslipidemia, and diabetes.<sup>(6)</sup> It is noteworthy that the prevalence of hypertension-related vas complications is bigger in biological time ladies than in age-matched men.<sup>(6)</sup> These complications represent the leading explanation for death in ladies.<sup>(7)</sup>

In biological time transition, many ladies have dilatation symptoms, which can have an effect on their traditional daily activities. With declining in oestrogen levels, risk factors for coronary cardiovascular disease (CHD) become additional apparent, particularly cardiovascular disease. The onset of cardiovascular disease will cause a spread of complaints that square measure usually attributed to the biological time.<sup>(8-12)</sup> Early onsets of menopause and also the biological time standing square measure related to higher pressure level levels.<sup>(9-11)</sup> However, cardiovascular disease in ladies is commonly unknown or inadequately treated, particularly once biological time once vas risk will increase<sup>(12)</sup>

## Summary

Pre- or perimenopausal women, who have biological time elicited by surgery, therapy, or radiation, square measure additional seemingly to expertise plague and even disabling symptoms. Cardiovascular disease is that the most typical modifiable risk issue for upset in ladies. Evidence-based pointers suggest each activity interventions and pharmacotherapy for treatment of cardiovascular disease. A widely known activity methodology for treating cardiovascular disease and biological time symptoms is relaxation technique, which incorporates paced respiration, muscle relaxation, and a mix as applied relaxation.<sup>(13)</sup> These techniques effectively ameliorate climacteric symptoms<sup>(14-16)</sup> and scale back pressure level.<sup>(13, 17, 18)</sup> There is

a robust proof to support the continued use of Applied Relaxation (AR) in clinical settings.<sup>(19)</sup>

### Scope of this thesis

Three studies had been carried out to answer the following research questions:

1. Are relaxation techniques effective for treating hot flushes, night sweats, and sleeps disturbance? If so, what are their performances?
2. Is our modified version (MR) of the Applied Relaxation (AR) effective for treating menopausal symptoms when compared with the original method in a randomized controlled clinical trial?
3. Is MR effective for hypertension control in Thai postmenopausal women when compared with a control group, who practice no MR?

### Title of the studies

#### 1. Relaxation for perimenopausal and postmenopausal symptoms

To date, there is not enough proof to support the utilization of relaxation techniques as a treatment for biological time symptoms. During this study, we trend to project to see the effectiveness of relaxation techniques as a treatment for vasomotor symptoms and sleep disturbances in peri- and postmenopausal women.

##### 1.1 Effectiveness of a modified version of the applied relaxation technique in treatment of peri- and postmenopausal symptoms

In Thailand, there has been no clinical analysis to indicate that Thai postmenopausal women use relaxation techniques for treating climacteric symptoms. However, the initial AR technique is simply too cumbersome. It involves intensive coaching once per week for 12 consecutive weeks. Every weekly session takes an hour, and subjects area unit requested to try and do self-practice reception for a minimum of 15-20 minutes/day. As such, >25% of recruited subjects drop out from the coaching course. We have changed the initial AR technique by reducing the period of coaching to one time, lasting hour. Participants area unit requested to try and do self-practice reception for 15-20 minutes/day as within the original technique. Rather than coming back to a weekly category, we tend to use a phone call to speak with the topics once per week for twelve consecutive weeks. A preliminary study at Mahasarakham Hospital showed that each one ten recruited subjects remained within the study until completion. All of them reported dramatic improvement in their constriction symptoms. This study projected to match our changed version of AR (MR; changed relaxation technique) with the initial methodology in an exceedingly irregular controlled trial.

## 1.2 Modified relaxation technique for treating hypertension in Thai postmenopausal women

Clinical proof from three RCTs reportable that relaxation techniques area unit effective in reducing the SBP and DBP, even once a brief observe of solely 2 months.<sup>(19)(20, 21)</sup> This study projected an irregular management trial to look at the effectiveness of changed relaxation (MR) technique to regulate cardiovascular disease in Thai postmenopausal women, compared with a management cluster World Health Organization did not practice mister. Such a study in Thai population has not been done before. Additionally, we tend to extend the amount of observation up to sixteen weeks, to assess longer-term patients' compliance, and also the effects of mister on BP.

Philosophical context of a clinical epidemiology research including theoretical design, data collection, and data analysis for each study is presented in Appendix A.

## References

1. Peck AC, Chervenak JL, Santoro N. Decisions Regarding Treatment During the Menopause Transition. In: Lobo RA, editor. *Treatment of the Postmenopausal Woman*. Third ed. London, United Kingdom: Academic Press; 2007. p. 157-65.
2. NIH State-of-the-Science Conference Statement on Management of Menopause-Related Symptoms NIH Consensus and State-of-the-Science Statements March 21-23, 2005. p. 5-13.
3. Chompootweep S, Tankeyoona M, Yamaratb K, Poomsuwanb P, Dusitsinb N. The menopausal age and climacteric complaints in Thai women in Bangkok. *Maturitas* 1993;17(1):63-71.
4. Harlow SD, Gass M, Hall JE, Lobo R, Maki P, Rebar RW, et al. Executive summary of the Stages of Reproductive Aging Workshop + 10: addressing the unfinished agenda of staging reproductive aging. *Menopause* 2012;19(4):1-9.
5. Weschler T. *Taking Charge of Your Fertility*. Revised ed. New York: HarperCollins; 2002.
6. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL, et al. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension* 2003;42:1206-52.
7. Rosamond W, Flegal K, Friday G, Furie K, Go A, Greenlund K, et al. Heart disease and stroke statistics-2007 update: a report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation* 2007;115:e69-e171.
8. Maas AH, Franke HR. Women's health in menopause with a focus on hypertension. *Neth Heart J* 2009;17:68-72.
9. Izumi Y, Matsumoto K, Ozawa Y, Kasamaki Y, Shinndo A, Ohta M, et al. Effect of age at menopause on blood pressure in postmenopausal women. *Am J Hypertens* 2007;20:1045-50.
10. Mercurio G, Zoncu S, Saiu F, Mascia M, Melis GB, Rosano GM. Menopause induced by oophorectomy reveals a role of ovarian estrogen on the maintenance of pressure homeostasis. *Maturitas* 2004;47:131-8.
11. Barton M, Meyer MR, Haas E. Hormone replacement therapy and atherosclerosis in postmenopausal women: does aging limit therapeutic benefits? *Arterioscler Thromb Vasc Biol* 2007;27:1669-72.
12. Barton M, Meyer MR. Postmenopausal Hypertension : Mechanisms and Therapy. *JAHA* 2009;54:11-8.
13. Hoffman WJ, Benson H, Arns AP. Reduced sympathetic nervous system responsivity associated with the relaxation response. *Science* 1981;2215:190-2.
14. Freedman EW, Sammel MD, Lin H, Gracia CR, Kapoor S, Ferdousi T. The role of anxiety and hormonal changes in menopausal hot flashes. *Menopause* 2005;12:258-66.
15. Freedman RR, Woodward S, Brown B, Javaid IJ, Pandey GN. Biochemical and thermoregulatory effects of behavioral treatment for menopausal hot flashes. *Menopause* 1995;4:211-8.
16. North American Menopause Society. Treatment of menopause-associated vasomotor symptoms: position statement of The North American Menopause Society. *Menopause* 2004;11:11-33.

17. Lee D, Kimura S, Quatro VD, Davison G. Relaxation therapy lowers blood pressure in hypertensives with raised plasma norepinephrine and blunts pressor response to anger. *Clin Exp Hyperten Part A, Thor Pract* 1989;11(1):191-8.
18. Hjemdahl P, Fagius J, Freyschuss U. Muscle sympathetic activity and norepinephrine release during mental challenge in humans. *Am J Physiol* 1989;257:341-7.
19. Wijma K, Melin A, Nedstrand E, Hammar M. Treatment of menopausal symptoms with applied relaxation: a pilot study. *J Behav Ther Exp Psychiatry* 1997;28:251-64.
20. Schneider RH, Stagers F, Alexander CN, Sheppard W, Rainforth M, Kondwani K, et al. A Randomized Controlled Trial of Stress Reduction for Hypertension in Older African Americans. *Hypertension* 1995;26:820-39.
21. Yen L-L, Patrick WK, Chie W-C. Comparison of Relaxation Techniques, Routine Blood Pressure Measurements, and Self-learning Packages in Hypertension Control. *Preventive Medicine* 1996;25:339-45.