Assessment Tool of Thai Menopause-Specific Quality of Life in Surat Thani Province, Thailand

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เครื่องมือประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดู จังหวัดสุราษฎร์ธานี ประเทศไทย

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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรดุษฎีบัณฑิต
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ดวงเดือน อินทร์บำรุง: เครื่องมือประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดูจังหวัดสุราษฎร์ธานี ประเทศไทย (Assessment Tool of Thai Menopause-Specific Quality of Life in Surat Thani Province, Thailand) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ศาสตราจารย์นายแพทย์สุรศักดิ์ ฐานีพานิชสกุล, อ.ที่ปรึกษาวิทยานิพนธ์ร่วม: รองศาสตราจารย์ สมรัตน์ เลิศมหาฤทธิ์, ผู้ช่วยศาสตราจารย์ นายแพทย์สัญญา ภัทราชัย, 140 หน้า.

วัตถุประสงค์ เพื่อสร้างแบบวัดคุณภาพชีวิตสำหรับหญิงไทยวัยหมดระดูในจังหวัดสุราษฎร์ธานี โดยการศึกษาครั้งนี้ได้แบ่งวิธีการดำเนินการวิจัยเป็น 3 ระยะคือ ระยะที่ 1 การศึกษากรอบแนวคิด โดยศึกษากรอบแนวคิดและทฤษฎีที่เกี่ยวข้องกับวัยหมดระดูจากเอกสารและงานวิจัย รวมทั้งการกำหนดกรอบในการสร้างเครื่องมือวิจัย ระยะที่ 2 การสร้างแบบสอบถาม เป็นการนำกรอบการสร้างเครื่องมือที่ได้ในระยะที่ 1 ไปใช้ในการสร้างและพัฒนาแบบสอบถาม ซึ่งประกอบด้วยการสัมภาษณ์เชิงลึกหญิงไทยวัยหมดระดู จำนวน 30 คน และการปรับปรุงแบบสอบถาม โดยทดสอบกับหญิงไทยวัยหมดระดู จำนวน 399 คน ระยะที่ 3 เป็นการนำเครื่องมือที่ได้ในระยะที่ 2 ไปใช้ทดสอบคุณภาพด้านความเชื่อมั่นและความเที่ยงตรงของเครื่องมือ (validity and reliability) กับหญิงไทยวัยหมดระดูจำนวน 402 คน โดยทดสอบจำนวน 2 ครั้ง ห่างกัน 2 สัปดาห์

ผลการศึกษาพบว่า แบบวัดคุณภาพชีวิตสำหรับสตรีไทยวัยหมดระดู มีค่า reliability = 0.952 สามารถสกัดองค์ประกอบได้ 3 องค์ประกอบ ได้แก่ 1) ปัจจัยที่มีผลกระทบต่อคุณภาพชีวิตจากการเปลี่ยนแปลงทางด้านร่างกายและจิตใจ (จำนวน51ข้อ) 2) ปัจจัยที่มีผลกระทบต่อคุณภาพชีวิตจากการเปลี่ยนแปลงทางด้านการมีเพศสัมพันธ์ อวัยวะสืบพันธุ์และสถานะทางเศรษฐกิจ (จำนวน 9 ข้อ) และ 3) ปัจจัยที่มีผลกระทบต่อคุณภาพชีวิตจากการเปลี่ยนแปลงทางด้านระบบประสาทอัตโนมัติ (จำนวน 3ข้อ) สรุป แบบวัดคุณภาพชีวิตสำหรับสตรีไทยวัยหมดระดูมีความเชื่อมั่นและความเที่ยงตรงอยู่ในเกณฑ์ดี และมีความเหมาะสมที่จะนำไปใช้ในการศึกษาคุณภาพชีวิตสำหรับสตรีไทยวัยหมดระดู

สาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ ลายมือชื่อนิสิต.....
ปีการศึกษา 2552 ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก.....
ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์ร่วม.....
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Objective: The purpose of this study was to develop an assessment tool of Thai menopause-specific quality of life in Surat Thani Province, Thailand. Methodology: This study was divided research design into three phases as follows; phase 1 Concept clarification: a thorough study of related literature was conducted to search for the concept of menopause-specific quality of life and its existing instruments to guide developing instrument, phase II Item development: in-depth interviews with 30 Thai menopausal women in Surat Thani was conducted and an initial pool of items relating to menopause-specific quality of life was generated to develop the instrument, then, tested with 399 menopausal women, and phase III psychometric test: the developed questionnaire was tested for validity and reliability with 402 menopausal women.

Result: The Thai Menopause-Specific Quality of Life instrument was well developed with 63 items, internal consistency reliability coefficient obtained 0.952, comprised of 3 domains including physic-psychological well-being (51 items), sexual-socio-economic well-being (9 items) and vasomotor well-being (3 items). Conclusion: The present study was directed to develop an effective instrument with integrity of psychometric property. This instrument was more likely meaningful to detect quality of life specific to Thai menopausal women.

Field of Study: Research for Health Development

Academic Year: 2009

Student's Signature .....

Advisor's Signature .....

Co-Advisor's Signature .....

Co-Advisor's Signature .....

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CHAPTER I

INTRODUCTION

Background

The life expectancy of women is increasing throughout the world and in most countries, women who reach the age 50 can expect to live another 30-40 years, adult women will therefore, live almost as long after menopause as they do before (Leplege, and Dennerstein, 2000). The total population of postmenopausal women throughout the world in 1990 was reported to number 476 million. An analysis of distribution of postmenopausal women from World Bank (1993) revealed that 40% live in the industrialized world. It is predicted that total number of postmenopausal women in 2030 will be approximately 1,200 million and the proportion of those living in the developing world will be increased to 76%. The Office of the National Economic and Social Development Board revealed that total number of menopause women (age between 45-59 years) of Thailand in 2020 will be approximately 4.7 million (18.4%)

Menopause is a universal female midlife transition association with the ageing process. It is variously defined in a number of different texts as ‘an estrogen deficiency disease’ (Riley, 1991; Hunter, 1996, and Klein et al., 1999). Menopause signifies the permanent cessation of menstruation and the end of the reproductive potential. A result of ageing changes in the ovary and in the hypothalamic-pituitary-ovarian axis function (Weiss et al., 2004), the menopausal transition is known to play a major role in the etiology of symptoms such as hot flashes, night sweats, uterine bleeding problems and vulvovaginal atrophy (NIH, 2005). Mood changes (Schmidt,

2005), sleep disturbances (Freedman, 2005) and sexual dysfunction (Dennerstein et al., 2005) also are commonly reported and may be attributable to the hormonal aberrations experienced during the transition.

There has been much ongoing debated in the clinical and epidemiological literature over which symptoms and health outcomes are related to the hormone aspects during the menopausal transition and which are pre-existing or related to aging or other psychosocial factors (Lorraine, and Edward, 2000). Nancy and other (2005) studied "A universal menopausal syndrome?" suggested that there was no precise evidence of menopausal syndrome. Previous studies reported several variables were related to menopausal symptoms and various worldwide clusters of its symptoms. In addition, menopause is a concept related to a number of factors which can vary from country to country including traditional, cultural and socioeconomic conditions. Studies in menopausal Asian women demonstrated that physical, psychological and sociocultural circumstances of mid-life Asian women lead to experience of menopausal symptoms and other related health outcome different among countries, and different from experiences reported by Western women (Wasti et al., 1993; Ismail, 1990). Chinese women more likely suffered from hot flushes and night sweats than Thai women (Punyahotra S. et al., 1997; Zhao et al., 2000). These studies also found a correlation between symptomatology and educational/professional status in the two ethic groups under investigation, e.g., the professional. Chinese women with high education were more likely symptomatic experiences than the farming women (Punyahotra et al., 1997). Furthermore, the pattern of menopausal symptoms experienced by Asian women also appears to be differed when compare to their Western counterparts. Post-menopausal women from

different Asian countries predominantly reported backaches, muscle pain, shoulder pain or joint pain (Ho et al., 1999; Chim et al., 2002; Lock et al., 1988; Lee 1997; and Lam et al., 2003) whereas less suffered from vasomotor disturbances (Ho et al., 1999; Chim et al., 2002; Haines et al., 2003; Haines et al., 1995; and Lam et al., 2003).

Conflicting findings reflect some of the methodological difficulties inherent in studies of the menopause as well as specific issues pertaining to the measurement of symptoms and quality of life according to menopause (Lorraine and Edward, 2000). However, researchers who acknowledged that differences in symptoms reporting may indeed reflect variations in the menopausal experiences (Kaufert, 1984, 1990; Kaufert et al., 1988; Avis and McKinlay, 1991; Zeserson, 2001). Several aspects are concerned regarding the methodology of previous studies that lead to potential weaknesses in research design and difficulty comparison of the studies. Including; (1) instruments (questionnaires) administered by interview or mails; (2) recall time frame (retrospective reporting of age at symptom recall from 2 weeks to 1 year or 'ever', particularly problematic as symptom recall of over 2 weeks is likely to be inaccurate); (3) menopause status analysis categories (inclusion or surgical menopause, assignments of perimenopausal status); (4) choice of symptoms and focus on 'menopause' versus 'midlife health'; and (5) language (complexity involved in translating medical terminology and everyday terms that describe bodily symptoms).

Most of the studies carried out so far, climacteric symptoms were analyzed using scales which had originated in the West, without taking into consideration the socioeconomic factors and cultural background of this region. Another important example if the application of Health related quality of life (HRQOL) instruments is

that the prevalence of individual menopausal symptoms was different among ethnic groups of Asian women (Haines, et al., 2005). Within each ethic group, the percentage of women reporting items of the Menopausal quality of life (MENQOL) varied substantially (Limpaphayom K. et al., 2006).There has been suggested that the utilizing of the same quality of life (QOL) measurement may not be applicable to worldwide population or across regional ethnicities unless linguistic and cultural adaptation is provided. Therefore, it would be appeared that health experiences of mid-life Thai women are structured of specific assumptions which focused on a different set of symptoms and cultural aspects (Punyahotra S. and Street, 1998).

According to the Western studies, mid-life women experienced in various deficiencies during menopausal period including capacity to reproduce, adequacy of estrogen hormone, comfortable symptoms, and physical and sexual desirability. However, when there are no reports of symptoms, the woman is described in terms of her lack of symptoms rather than her positive state of health (Punyahotra S. and Street, 1998).

In Thai society, the culture contributes women to demonstrate positive roles during their middle-aged. They may enjoy their tasks in to great influence in their household. Menstruation is defined as an indicator of healthy in Thai society. Cessation of menstruation is mean free from menstrual problems, contraception and pregnancy. Menopause means a time of declining body functions. There are also expectations that some women will experience in various symptoms during this time, particularly changes in behavior and emotions (Punyahotra S. et al., 1997).

These positive discourses of ageing do not necessarily mean that Thai women have good health during middle age (Health TDo, 1996). Punyahotra S. and Street (1998) mentioned that bodily experiences of Thai women were considered privacy and not the subject for social discussion. This changing processes not only a physical attribution but also cultural, socioeconomic and educational influences. However, the ability of Thai women's to tolerate health problems, in general, many women do not recognize their precise symptoms that occurring due to menopausal changes. Their fore, they explained the physical, emotional and psychiatric symptoms as a single general statement 'my heart is weak' to cover their excessive perspiration or palpitation or unhappiness or keep silence. Thai women may not be acknowledged a need for preventive care such as breast examinations or cervical cancer screening during this period. Some women do not concern these matters as a necessary part of caring for themselves. They may be embarrassed or ashamed when their personal parts of their bodies are displayed or objectified explored and lexicalized', particularly by male doctors as the expression in dialect that *"yaak ai*" hence refuse to have internal examination for cervical cancer screening, (Whittaker, 1996). Many women wait until they have troublesome symptoms and feeling ill. They may not seek medical attention until a problem is fairly advanced (Punyahotra S. and Street, 1998).

The ability of a woman to determine the anomalous signs and symptoms related to the menopausal transition is a great value for herself rather than understanding her need for contraception. The understanding issues may cover the reflection of whether the occurring symptom is related to hormonal fluctuations or underlying pathology, and whether menopausal symptoms and problematic bleeding patterns are self-limiting or need of intervention (Fries, 1988). Menopausal symptoms

and its specific issues may influence to health and quality of life of menopausal women.

Therefore, it is crucial for health personnel to be clearly identifying factors related to vasomotor symptoms and general reporting symptoms, by defining how symptoms are interrelated, determining what factors are uniquely related to vasomotor symptoms, and identifying whether there is a subgroup of women who are more likely to report symptoms. On the other hand, health personnel can use such information to help patients to understand which other symptoms they may experience due to menopausal transition. Furthermore, there is a great need to generate an accurate assessment of health-related quality of life (HRQOL) in clinical practice, research, health interventions and health planning. The assessment tool of these effects requires a variety of validated instruments to capture their influence in variety of populations and for variety of outcomes. Thus, the purpose of this study is to develop the menopause-specific quality of life instrument as a self-administered condition specific tool to measure health-related quality of life in Thai middle-aged women.

Research Questions

(1) What are the situations of the menopause-specific quality of life instrument in global, region and Thailand?

(2) What is a menopause-specific quality of life instrument for Thai menopausal women?

(3) What are the domains of menopause-specific quality of life on Thai menopause women?

Research Objectives:

(1) To analyze situation of menopause-specific quality of life instruments in global, region and Thailand

(2) To develop a menopause-specific quality of life instrument for Thai menopausal women

(3) To determine the domain of menopause-specific quality of life on Thai menopausal women

Conceptual Framework

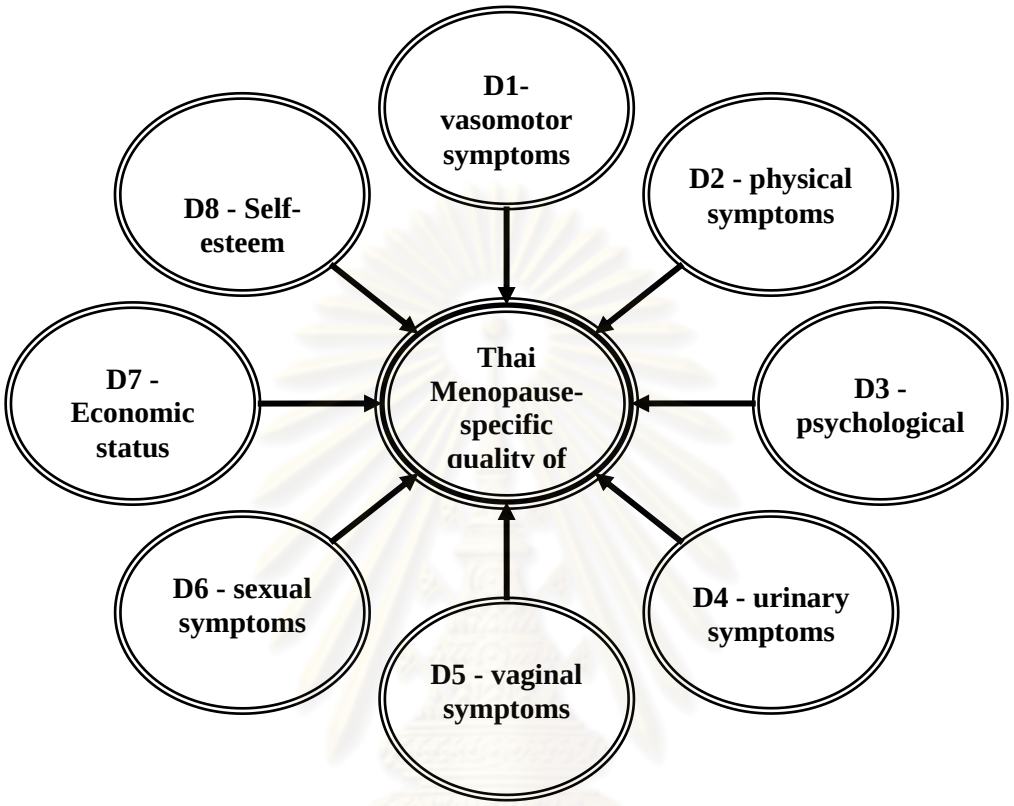


Figure 1 Conceptual Framework

Due to the literature reviewed the psychosocial model looks at the menopausal transition as a natural part of development, which should not be treated by medication such as estrogen (Olazabal et al., 1999). This model can lead to personal development with new knowledge and self-esteem, but in women with severe climacteric symptoms this model may lead to a conflict and a feeling of failure and loss of self-esteem. According to Thai women viewed menopause as a natural life process and accept as a normal physiological changed it (Peeyananjarassri K. et al., 2006).

In addition the conceptual framework of menopause-specific quality of life, of the present study was defined as a subject's perception of well-being that derives from menopause transition which composes of 8 domains: Vasomotor symptoms, Physical symptoms, Psychological symptoms, Urinary symptoms, Vaginal symptoms, Sexual symptoms, Economic status and Self-esteem, which effect to quality of life in Thai menopausal women.

The figure show indicators (Vasomotor symptoms, Physical symptoms, Psychological symptoms, Urinary symptoms, Vaginal symptoms, Sexual symptoms, Economic status and Self-esteem) affect quality of life in Thai menopausal women.

Operation Definition

Thai Menopausal woman is a Thai middle-aged women, age between 45-59 years old, in the years immediately beyond the onset of menopause

Menopause-specific quality of life is defined as a subject's perception of well-being deriving from menopausal transition which composes of 8 domains including vasomotor symptoms, physical symptoms, psychological symptoms, urinary symptoms, vaginal symptoms, sexual symptoms, economic status and self-esteem

Tool is the term refer to "instrument" or "scale" or "measurement" as a self-administered condition specific tool to measure health-related quality of life in Thai menopause women

CHAPTER II

LITERATURE REVIEWS

The purpose of this study was to develop a menopause-specific quality of life instrument for. Thai menopause women within the chapter, the researcher has reviewed related literatures that studied based on the definition of menopause-specific quality of life and instrument development and a review of existing measurement tools.

Menopause

Definition of menopause

Menopause is a universal female midlife transition associated with the ageing process. It is variously defined in a number of different texts as ‘an estrogen deficiency disease’ (Riley, 1991; Hunter, 1996; Klein et al., 1999), but Hunter and Riley stress the dangers and limitations of defining menopause as this alone. Riley (1991) acknowledges that ‘some but not all. Sexual problems can be explained in terms of changes resulting from estrogen deficiency, Psychological and behavioral disturbances may also contribute at this time,’ Hunter outlines the ‘implications for the way middle aged and older women’s views and behaviors are perceived in society’.

The terminology below includes that recommended by WHO in 1996.

1. National menopause is defined as the permanent cessation of menstruation resulting from the loss of ovarian follicular activity. It is recognized to have occurred

after 12 consecutive months of amenorrhea, for which there is no other obvious pathologic or physiologic cause. Menopause occurs with the final menstrual period (FMP). Which known certainty only in retrospect ≥ 1 year after the event. An adequate independent biologic marker for the event does not exist.

2. Perimenopause should include the period immediately before the menopause (when the endocrinologic, biologic, and clinical features of approaching menopause commence) and the first year after menopause. The term climacteric should be abandoned to avoid confusion.

3. Menopause transition should be reserved for that period before the FMP when variability in the menstrual cycle is usually increased.

4. The climacteric is the phase in the aging of women marking the transition from the reproductive phase to the nonreproductive state. This phase incorporates the perimenopause by extending for a longer variable period before and after the peri-menopause.

5. Premenopausal is often used ambiguously either to refer to the 1 or 2 years immediately before the menopause or to refer to the whole or the reproductive period before the menopause. The group recommended that the term be used consistently in the latter sense to encompass the entire reproductive period before the FMP.

6. Induced menopause is defined as the cessation of menstruation that follows either surgical removal of both ovaries (with or without hysterectomy) or iatrogenic ablation of ovarian function (e.g., by chemotherapy or radiation)

7. Simple hysterectomy, where ≥1 ovary is conserved, is used to define a distinct group of women in whom ovarian function may persist for a variable period after surgery.

8. Postmenopausal is defined as the period dating from the FMP, regardless of whether the menopause was induced or spontaneous.

9. Premature menopause ideally should be defined as menopause that occurs at an age <2 standard deviations below the mean estimate for the reference population. In practice, in the absence of reliable of the distribution of age at natural menopause in populations in developing countries, the age of 40 years is frequently used as an arbitrary cut-off point, below which menopause is said to be premature.

Opinions differ over exactly when menopause begins. Some of the epidemiological studies use cessation of menses as the beginning of menopause and ignore the perimenopause (Nicol-Smith, 1996; McPherson and Waller, 1997) However; the perimenopausal state may begin years before amenorrhea with somatic symptoms (Klein et al., 1999). Nicol-Smith argues, that the generally accepted research definition of the menopause as the final menstruation 'is unhelpful' because it makes it difficult to construct categories for data analysis.

The menopause is traditionally viewed as the time when a women passes from reproductive to non-reproductive phases (Riley, 1991), or from ovulatory to anovulatory changes (Klein et al., 1999). The start of menopause can provide a profound sense of liberation for some women (freedom from menstruation and the possibility of pregnancy), while in others there may be a decline in the woman's sense of self as a reproductive being. Both biological and psychosocial factors are likely to influence these emotions.

Age at menopause

While the main focus of this review is symptom reporting at menopause, much research has focused on age at menopause (Gold et al., 2001), which may influence

long-term disease risk and mortality in women (Jacobsen et al., 2003). The last 5 years have seen the publication of several large surveys from outside English-speaking Western countries including several countries in Asia and the Middle East. The highest reported mean menopausal ages were reported in Italy (50.9 years, n = 4300) (Meschia et al., 2000). Iran (50.4 years, median 49.6 years, n = 8194) (Mohammad et al., 2004) and Slovenia (50.4 years, median 52.03 years. N = 58) (Sievert et al., 2004). Mean menopausal ages between 47 and 50 years were reported for the following populations: Koreans living in Korea (49.3 $\pm$ 3.5) (Ku et al., 2004), Lebanese (49.3 median) (Reynolds and Obermeyer, 2001), Singaporean (49.1) (Chim et al., 2002), Korean emigrants to China (48.9 $\pm$ 3.1) (Ku et al., 2004), Greek (48.7 $\pm$ 3.8) (Adamopoulos et al., 2002), Moroccan (48.4 median) (Reynolds and Obermeyer, 2003), Mexican (48) (Malacara et al., 2002), Han Chinese in Taiwan (48) (Fuh et al., 2001) and Turkish (48 $\pm$ 4.2) (Ozdemir and Col, 2004). The lowest reported average menopausal age came from Turkey (45.8 $\pm$ 4.2) (Biri et al., 2005).

Menopausal symptom reporting

The most significant physiological change that occurs at the time of menopause is the fluctuation in the levels of circulating hormones, particularly estrogen. The ovary prior to menopause produces significant amounts of estrogen in response to the stimulating effect of the gonadotrophins, follicle stimulating hormone (FSH) and lutenizing hormone (LH), which is secreted by the anterior lobe of the pituitary gland. This balance is maintained in pre- menopausal women by the positive and negative feedback mechanism that works between the ovaries, pituitary gland and possibly the hypothalamus. With increasing age, the ovary becomes less sensitive to

circulating levels of gonadotrophins; ‘it becomes progressively resistant to the stimulating effects of FSH resulting in reduced estrogen production’ (Bancroft, 1989; Riley, 1991). Riley adds that specific symptoms can occur as a result of estrogen deficiency, but not all menopausal symptoms are directly attributable to this.

Physiological symptoms experienced due to declining estrogen levels have been reported in various texts (Masters and Johnson, 1966; Riley, 1991; Weijmar-Schultz et al., 1991; Hunter, 1996; Nicol-Smith, 1996; Butcher, 1999; Berman and Goldstein, 2001). Vaginal dryness is a frequent complaint of menopausal women. The formation of genital lubrication is dependent on estrogen production. During sexual arousal, the vaginal epithelium secretes a highly viscous solution by a process of transudation (seeping), the purpose of which is to aid vaginal penetration. Failure of this process due to inadequate sexual stimulation, poor arousal response or lack of estrogen can result in painful intercourse. If penetration is attempted, it may result in tears of the posterior labial commisure as a result of the labia minora being dragged into the vagina with thrusting.

It is easy to associate vaginal dryness with dyspareunia, but this is not the only cause of painful intercourse. The rate of arousal is slower in the menopausal woman, vaginal mucosa thins and loses elasticity and there is slower and less lubrication than premenopausal. The vagina undergoes atrophic changes, including shortening and narrowing. General loss of elasticity and muscle tone of the genital and pelvic area occurs, and loss of fat from the labia minora and majora all contribute to the condition.

During menopause, many other changes are taking place as a result of falling estrogen levels. Adequate vasocongestion in the pelvic area slows engorgement of the

perivaginal tissues; pelvic engorgement also protects the urethra and bladder and acts as a buffer from penile thrusting. The vasocongestive response also contributes to the lubrication response (Riley, 1991). Other important vasocongestive changes may contribute to diminished pelvic blood flow secondary to atherosclerotic disease, leading to vaginal wall and clitoral smooth muscle fibrosis (Berman and Goldstein, 2001), and a lack of clitoral engorgement may result in a loss of subjective awareness of arousal.

Vasomotor symptoms consist of hot flushes, night sweats and possibly palpitations, although their endocrine basis is not understood. No one hormone has been identified as the ‘culprit’, but it has been suggested that a change in the body thermostat (hypothalamic thermoregulatory centre) promotes heat loss (flushes and sweats). Estrogen in sufficient doses abolishes menopausal flushes in nearly all women. The associated insomnia and fatigue that women get with night sweats also rises (Bancroft, 1989). In a controlled study, exercise, cut flushes by 50% and cognitive behavioral therapy and deep breathing are other effective non-HRT treatments of flushes (McPherson and Waller, 1997)

Urinary tract symptoms and incontinence may be related to estrogen deficiency (Bancroft, 1989; Berman and Goldstein, 2001).

One of the chief problems associated with urinary incontinence and loss of sexual sensation is poor pelvic floor tone. Many post- menopausal women, and even younger multigravida women, seem to accept with dismal resignation the fact that some involuntary expulsion of urine is to be expected when they cough, sneeze, run or even laugh (stress incontinence). The question is: how much urine leakage will they accept before they seek help? As with sexual dysfunction, some women suffer in

silence, too embarrassed to ask for help for fear of being regarded as freakish or dirty. McPherson and Waller (1997) wrote that "Women do no volunteer the symptom of incontinence, but welcome the chance of unburdening themselves, gaining relief from knowing that they are not the only ones to suffer and they need not be ashamed.'

Much has been written about the association of disturbed or altered mood and the menopause. In the literature, there has been a dramatic change since 1980, when the diagnosis of involutional melancholia was removed from the third edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1987). There is now universal acceptance that menopause and depression are not related.

Nicol-smith (1996) studied 43 epidemiological primary research articles published between 1966 and 1996, with the focus of the search being on the categories of emotion, affective symptoms, and mental disorders and climacteric, she concluded that there was insufficient evidence at present to maintain that menopause causes depression. The author stated that mood changes had been reported after using HRT. However, the author only used one database (Medline) when conducting this search, and although she acknowledges that some element of bias may exist, she does not spell out the limitations of using certain search criteria on one database alone.

Klein et al., (1999) states that failure to distinguish between different affective/anxiety disorders may be particularly important in therapeutic trials, and is also critical of studies that 'lump all emotional symptoms in one group'. He notes that the emotional changers attending the peri- menopausal state are quite diverse and may include different forms of depression. Hunter (1996) considers the linking of the menopause with depression, pervasive in the lay and medical press. She attributes this

not to evidence-based research but to historical myths and menstrual taboos. She says that poor attitudes to fertility and ageing have produced an image of menopause as a time of physical and emotional decline.

Klein et al., (1999) writes that women with a past history of affective/anxiety disorders in the setting of endocrine fluctuation may be particularly at risk of developing peri-menopausal affective/anxiety disorders. His plea for more carefully designed non-epidemiological studies appears justified.

In Western societies, ageing in women is not always valued, and there is a constant pressure on women to maintain a youthful appearance. This obsession with youth is demonstrated in popular culture. The absence of realistic role models with whom older women can identify needs to be continuously challenged if we are to prevent women becoming dissatisfied with how they look as they age. Poor body image can contribute to negative feelings, and therefore these women may be predisposed to some form of depression if they feel that they are no longer attractive to their partner. Women may also find menopause a time to reflect on the past. They may look at their past and present relationships and their choices about children and work satisfaction. Some may regret certain decisions or have unfulfilled dreams.

While some women report feeling greatly relieved to cease menstruation (Hunter, 1996). Others feel a sense of loss. For women who see menstruation as a symbol of femininity and womanliness, its end may lead them to question their female identity. Other women may find it difficult to accept the loss of reproduction. A range of other life circumstances often occurring at midlife can impact on a woman's menopausal experience. These may include children leaving home, loss of a partner through death and separation of divorce. Another factor may be caring for elderly

relatives. Sometimes the changes that illness brings affect the structure of people's relationships, and the independent person may become the care or the cared for. This shift can alter an adult/adult relationship to parent/child relationship, and it is difficult to maintain an active sex life under these circumstances, particularly if the illness impacts on self esteem (Russell, 1998). Many women may dread the thought of taking early retirement form a career that they have enjoyed. They may be anxious about spending more time together as a couple, and may not know what to say or how to fill the time with a partner.

The impact of disease and disability cannot be ignored when considering life events at the time of the menopause. The conditions that may have an impact on a woman's sexuality can be considered under the broad headings of physical and treatment effects. The first group may include procedures that involve the genitalia due to gynecological conditions and their treatments, particularly those for malignant disease. This type of treatment also affects the psychological well being of the woman. When sexuality is affected, patients can be taught to adjust and adapt to their new situations rather than accepting an end to their sexual lives. However here is a lack of suitably trained health professionals that deal with these problems, and referring these patients may not be an option. Other non-specific conditions not related directly to the genitalia but which affect sexual function include stroke, pain, tiredness and immobility due to arthritic changes, alteration in body image, either perceived or actual. Commonly used drugs may have an effect on an individual's sexuality by decreasing libido or altering the sexual response. When considering the use of drugs, the negative effect may be outweighed by the positive effect of mood enhancement.

Female sexuality and the menopause

Regarding the effects on sexuality of selective serotonin reuptake inhibitors (SSRIs), an excellent review paper by Edwards and Anderson (1999) listed 36 side effects (under system order) that had been noted within the first 2 years of the individual SSRI being marketed. Out of the 122600 prescriptions written, sexual dysfunction was reported on only 177 occasions. While male sexual dysfunction was reported in the others, female sexual dysfunction was not referred to. A consensus view is that up to 40% of women complain of at least one sexual symptom (Basson et al., 2000).

Defining female sexuality is like defining the menopause: not without its difficulties, but unique to the individual women. It cannot be defined by looking only at the medical model. And the psychological element to female sexuality must be addressed. Female sexual dysfunction is a multicausal and multidimensional problem combining biological, psychological and interpersonal determinants (Basson et al., 2000). It has a major impact on quality of life and interpersonal relationships and can cause marked distress and interpersonal difficulty (DSM-IV: American psychiatric Association, 1994). Many dysfunctions in women are not exclusively psychologically or organically based (Basson et al., 2000).

Basson argues that female sexuality differs from men's in three distinct areas: women are not driven, as men are, by their hormones; women's motivation (or willingness) to be sexual stems from a series of rewards or gains that are not strictly sexual; and 'women's sexual arousal is a subjective mental excitement that may or may not be accompanied by awareness of vasocongestive changes in her genitalia.' She believes that many women who are sexually functional (i.e., can respond to a

partner's needs) do not have spontaneous sexual desire, and she considers physiological arousal to take place secondarily to the conscious decision to be sexual for one of the reasons given. Basson seems to consider that 'brain sex' is what happens initially to a woman, when she says 'women are mainly speaking of mental excitement when they speak of sexual arousal'.

Given all that we know (which still isn't a lot), and using Basson's 2000 model of sexual response, it is easy to understand why Western women find difficulty responding to their partners (if they have one) or maintaining any spontaneous desire for self stimulation during their menopausal years, with all the attendant life events that may be happening.

Cultural influences and the menopause

Several studies or non-Western women suggest cultural differences in menopausal symptom, for example, Australian and Japanese Midlife Women's Health Study. The relationships among menopausal status, country of residence and symptoms were examined in 886 Australian and 848 Japanese women (aged 40-60 years) (Anderson et al., 2004). Surveys including data on menopausal symptoms (using the Greene Climacteric Scale), menstrual history and socio-graphics were mailed to randomly selected populations in both countries with response rates of 58 and 56% in Australia and Japan, respectively. More than half of the women were post- menopausal, 14.5% were perimenopausal and 12.3% were premenopausal. In both cultures similar increases in prevalence of depression, somatic symptoms and vasomotor symptoms were observed in the perimenopause. Statistically significant

differences were observed in psychological symptoms, somatic symptoms and sexual symptoms by menopausal status but not by country of residence. Australian women experienced more night sweats than Japanese women, but the prevalence of hot flushers was not statistically different. Vasomotor, psychological and somatic symptoms decreased after menopause in Australian women, with only sexual symptoms continuing. In Japanese' women, somatic, psychological and sexual symptoms remained high after menopause. Rates of symptom reporting in this study were higher than those found in other studies of Japanese general populations (Lock, 1993), and may be due to historical changes, geographical differences, differences in recall period (i.e. 2 week recall period in Lock and Melby and unspecified period in the above study), inclusion of cases of surgical menopause is symptom rate data, participation bias due to low participation rates (i.e. participation rates could have been higher among symptomatic women, resulting in a study population with higher symptom rates) and differences in the ways symptom terms were translated [i.e. participation rates could have been higher among symptomatic women, resulting in a the ways symptom terms were translated i.e. the Australian and Japanese Midlife Women's Health Study (AJMWHS) reduced cultural bias by making the English and Japanese surveys consistent, but as several researchers have noted, Japanese hot flush terminology is more detailed and not easily translated into English (Lock, 1993; Zeserson, 2001).

An earlier paper by the same authors compared symptoms among 712 Australian and 1502 Japanese women aged 46-60 years old. Reported hot flush rates did not differ significantly between the two countries or between menopausal status groups in either country (Anderson et al., 2004). The latter result is particularly

surprising, as almost all studies have found significantly higher rates in peri-and post-menopausal women compared to premenopausal women. However, this study used different menopausal symptom scales, generated separately in each country, and thus the findings are potentially not comparable, highlighting a major difficulty in carrying out cross-cultural research.

Longitudinal findings from Japan and comparisons with North America

One of the first examples of interdisciplinary, cross-cultural research to demonstrate variation in symptom reporting was completed in the 1980s. Analysis of data sets designed to be statistically comparable comprised of 7802 Massachusetts women (Avis and McKinlay, 1991), 1307 Manitoban women (Kaufert, 1984) and 1225 Japanese women (Lock, 1993). All aged between 45 and 55 inclusively. In all three sites, samples were selected from a general and not a clinical population of women. Those women who had undergone gynecological surgery were treated as a separate category in the analyses.

The Japanese word konenki usually translated into English as menopause. Does not convey the same meaning as does menopause, rather it is similar to the concept of the climacteric, that is, it is understood as a long, gradual process to which the end of menstruation is just one contributing factor. Most Japanese respondents in the study placed its timing at aged 45 or even earlier, lasting until nearly 60. One quarter of the questionnaire respondents who were post- menopausal and had ceased menstruation for over 1 year reported that they had no sign of konenki, This suggests strongly that it is important, before creating questionnaires, to establish just what is conveyed by local terminology. A second difficulty arose in the research in Japan

because, as is the case in many other societies, no word exists in Japanese that refers uniquely and specifically to the menopausal hot flush, even though Japanese is a language in which very fine discriminations can be made in connection with bodily states, In fact several words are used to denote a hot flush depending on the location and attributes of the symptom, but these words can also be used to refer to feelings of heat resulting from non- menopausal causes such as cold/flu (Zeserson, 2001).

There is no word for menopause in the Chinese language, and in Chinese philosophy midlife is just an accepted part of the natural ageing process helped by the use of traditional medicines, In Japanese society, where the work ethic is strong, menopausal problems are often viewed as a luxury disease of modernity, affecting women with too much time on their hands. An interesting small study by Rice (1995) Looked at the menopausal experiences of women of the Hmong Tribe living in Melbourne, Australia. The Hmong are from Laos in Se Asia, and they live as hill tribes in high mountainous areas. The Hmong follow ancestral worship, and they believe in reincarnation and rebirth. The traditional Hmong family is large, with boys having a particularly high social value to carry on the traditions; the traditions are still practiced, even though this small cohort that was studied (n = 26) live in Australia, Hmong girls' and adolescents' status change when they marry and have children. Giving birth brings prestige to among women, and her status changes again when she becomes old. They are referred to as respected elders. Because menopause is associated with ageing, post- menopausal Hmong women gain respect and a higher status than when they were young.

In the Hmong language, there is no equivalent work for menopause. Menopause is seen as the consequence of transition from fertility to infertility. All the

postmenopausal women in the study (n = 9) had their menopause at a mean age of 43 years (also noted that Mayan women were already postmenopausal in their early 40s, attributing this to poor nutritional status). Because of this, some women regretted no longer being able to bear children, even though they already had large families, but this was the only negative aspect they saw to menopause. When the women asked about physical changes that occurred during menopause, they only reported irregular and lighter menstruation. Women were asked about emotional changes or difficulties, again no symptoms were reported, and they found it amusing that this was not the case with Western women.

Hmong women had a positive attitude and a positive experience of the menopause. Is this because the Hmong value age over youth? Similar findings have been reported by Kaufert's, 1982 study of Indian women of the Rajput caste in the states of Rajistan and Himachal Pradesh, but unfortunately the specific issue of sex and sexuality were not addressed in these studies. This may have been because of strict cultural taboos that prevented discussion of the topic, or the researchers might have felt that even if the question ware asked, they would be unlikely to get an honest reply.

Several studies in Thailand, symptoms included in the Thai checklists range from eight vasomotor and psycho logical symptoms (Chompootweep et al., 1993) to 17 vasomotor, physical and psychological symptoms (Chirawatkul S. and Manderson, 1994), and some studies also included urinary tract and vaginal symptoms (Sukwatana et al., 1991; Punyahotra S. et al., 1997), fracture (Sukwatana P. et al., 1991) and lack of sexual desire (Chirawatkul S. and Manderson, 1994).

A more complex, culturally specific pattern of symptoms has emerged rather than a universal menopausal syndrome (Avis et al., 2001).

Differences in symptom reporting among women are suggested to be artifacts of differences in symptom sensitivity or a tendency to under-report, due to lack of education or else embarrassment (Boulet et al., 1994). On the other hand researchers who acknowledge that differences in symptom reporting may indeed reflect variation in the menopausal experience (Kaufert, 1984, 1990; Kaufert et al., 1988; Avis and McKinlay, 1991; Zeserson, 2001) remain concerned about methodological differences that make comparison difficult and chronic weaknesses in research design and reporting including : (1) instrument (Questionnaires administered by interview or mail); (2) recall time frame (retrospective reporting of age at menopause and symptom recall from 2 weeks to 1 year or 'eyer' particularly problematic as symptom recall of over 2 weeks is likely to be inaccurate); (3) menopausal status analysis categories (inclusion of surgical menopause, assignments of perimenopausal status); (4) choice of symptoms and focus on 'menopause' versus 'midlife health', and (5) language (complexity involved in translating medical terminology and everyday terms that describe bodily symptoms).

Menopause in Thailand

Thailand's society has changed rapidly from an agricultural to an industrial base and this how impacted upon the environment and on people's lifestyles (Xuto, 1992).

The roles of women in Thai society are determined by custom and culture; it is acceptable in the traditional Thai family for women to work in the home, while men work outside the home. Earning an income and communicating with the outside society. Frequently, a wife addresses her husband by the term ‘pee’, or elder brother. The relationship between husband and wife is therefore like that of a brother and sister. The husband assumes the role of leader and the wife that of follower

Formerly, Thai women generally had lower levels of education than men. Before the introduction of Western education, Thai education was administered solely by the monasteries and only a small portion of the population, mostly male, received formal education. Since women were unable to become monks, they were deprived of any education.

Illiterate women tended to have low self-esteem and very little self-confidence in public. This inhibited their thinking, limited their world-view and their perception of life beyond the daily routine of their lives. This was one of the factors that encouraged Thai women to view men as their superiors (Dharmasakti, 1991).

At present, although women supposedly have equal access to educational opportunities, there are more young girls, particularly in rural areas, who do not continue their studies to junior high school level (Chutikul S., 1992). This may be because of socioeconomic problems, many being obliged to bring an income into the family.

The rotes of Thai women have now changed. Both men and women undertake mutual decisions concerning marital and family problems and the woman is the key decision-maker regarding such issues as family size, birth spacing and child care. For family planning behaviors, both men and women consider this a women’s domain,

and women feel comfortable in discussing contraception with their friends or other female relatives.

Some women now have better opportunities to acquire further education, to work outside the home, becoming more self-reliant and independent.

As women get older, their power and authority in their families increases. Most women control the household purse and play an important role in decision making and family management. They also have greater influence and become free from the dominance of their husband. The elderly in Nonthaburi are also highly respected by people in the community at large.

The family structures in Thai society are those of both extended and nuclear families. Extended families are usually comprised, in total or in part of maternal grandparents, married daughters, unmarried daughters and/or unmarried sons. Such households have been common in rural areas (Yoddumnern-Atting, 1992). Nuclear households containing not more than two generations can be found in most urban areas.

Many Thai words are used for menopause: Mod lyad or Sud lyad (run out of menstrual blood) or Mod prachamdyan (run out of monthly period) (Chirawatkul S. and Manderson, 1994). In Thailand, menopause is perceived as the "change". "Lyad cha pailom cha ma" (the blood will go-the wind will come) is a Thai idiom used to describe changes in a woman's behavior, emotions and well being during menopause (Punyahotra S. and Dennerstein, 1997). This change mostly refers to an emotional change, which is believed to happen occasionally and is not expected in every woman, "Wai thong" (Golden age women) is another word that expresses a positive view towards menopause in Thai society. It refers to the age range during menopause

when women are stronger, wiser, and get more respect from those around them (Punyahtra S. and Street, 1998).

Many Thai women express positive views about the effect of 'the change' in their lives. This time of change is usually seen as an experience that affords more freedom to the woman. Rather than a focus of deficits, the discourses that shape the image of mid-life Thai women are generally positive and focus on gains. As women age they can expect more respect from those around them and in Thai culture this is demonstrated informally and formally through language and actions. Thai household structure usually includes three generations. Although men exercise power in all aspects of Thai public life, older women are the authority figures within the family. They play an important role in decision-making and family. They play an important role in decision-making and family management (Yodumern-Attig, 1992). Many women attain the status of mother-in-law and the obedience of daughters-in-law further enhances their position. Despite physically hard lives and financial difficulties, Buddhist mother-in-laws are generally accorded respect that provides a sense of worth at a time when their bodies are changing.

The term wai ngarm has no direct correlate in the English language but refers to the Thai woman at mid-life who is strong, wise and attractive, a term both desirable and esteemed-a golden age woman. It is not specifically linked to menopause but has been the name adopted for mid-life women, a term that reflects the positive discursive framing of this time in a Thai woman's life. Wai ngarn speaks out of a different discursive frame to the word 'menopause' with its Western connotations. Most Thai women accept that at mid-life menstruation stops and they naturally enter the ageing period. The idea of maintaining youth and beauty after menopause is quite rare,

particularly in rural Thai women (Chirawatkul S., 1992; Dusitsin N. and Snidvong, 1993). It is not a priority within the structure of their daily lives (Whittaker, 1996).

Thus many Thai women are ill informed about any health risks or expected changes during their mid-life years. Unlike the situation with their Western counterparts, who perceive menopause as a medical condition requiring treatment, (Kaufert, 1993) this time of life is usually thought of as a private change in Thai women's lives which is little remarked upon or connected to a set of expected symptoms.

Buddhism plays an importance role in shaping attitudes towards menopause among Thai women (Punyahotra S., Dennerstein, and Lehert, 1997). Thai Buddhism concept of impermanence of life leads Thai women to accept the decline in body function resulting from aging process (Chirawatkul S., 1992). Another study found that Thai women also applied Buddhism concepts for coping with their psychological problems during menopause (Derekbusarakom, 1997).

Thai women tend to view menopause as a private matter (Punyahotra S. and Street, 1998). The bodies' experiences are considered private and not the subject for social discussion. The changes or symptoms during menopause that could be related to illness are normalized. Many women do not seek medical attention until a problem is fairly advanced. The percentages of Thai women who discussed menopausal symptom experiences with their physicians varied from 16% to 50% (Ministry of Public Health, 1996; Punyahotra S., Dennerstein, and Lehert, 1997; Sukwatana P. et al., 1994). Chaikittisilpa S., et al., (1997) found that approximately 20% of women who experienced vasomotor symptoms perceived them as medical problems that needed medical attention.

These positive discourses of ageing do not necessarily mean that Thai women have good health during middle age (Health T Do., 1996). Rather, bodily experiences are considered private and not the subject for social discussion. The ageing process takes its physical toll but cultural, socioeconomic and educational influences combine to both silence and define the Thai woman's ability to tolerate health problems. The silences surrounding women's bodies and health problems in general and menopause in particular, means that many women do not recognize that their symptoms may be from menopausal changes. Physical, emotional and psychiatric problems will be explained by a single general statement. Women will often say 'my heart is weak' to cover either excessive perspiration or palpitation or unhappiness. Silences also mean that health education and health promotion are not addressed. Thai women may not acknowledge a need for preventive care such as breast examinations or cervical cancer screening. Some do not regard this as a necessary part of caring for themselves; others may be yak ai (ashamed and embarrassed) by the need to have an internal examination where 'hitherto secret parts of their bodies are displayed, objectified, explored and medicalized', particularly by male doctors (Whittaker, 1996). Many women wait until they have troublesome symptoms and feel ill, not seeking medical attention until a problem is fairly advanced.

Quality of life in menopause

In the medical context, use of the concept of quality of life is deliberately confined to health-related quality of life (Guyatt et al., 1989). The most important and universally accepted domains reflect physical, emotional and social functioning

(Spitzer, 1987; Palmore and Linkhardt, 1972). With the menopause, the physical aspects of quality of life primarily concern vasomotor symptoms, such as hot flushes and sweating, which are experienced by as many as 80% of women during their postmenopausal years (Mckinlay et al., 1987). Some investigators have also reported sleep disturbances, anxiety, depression and sexual dysfunction, but these complaints have commonly been argued to be the result of a number of different negative sociodemographic and psychosocial circumstances rather than adverse reactions to the vasomotor symptoms (Green, 1984; Holte and Mikkelsen, 1991).

Although vasomotor symptoms are most pronounced during the first years after the menopause, it has been shown that 50% of women continue to suffer for up to 5 years and that 10% suffer for 10 years or more (McKinlay et al., 1987; McKinlay et al., 1987). It would therefore seem essential to extend studies of the menopause beyond looking simply at the relief of vasomotor symptoms and explore the extent to which the symptoms influence the post menopausal woman's quality of life. In view of the psychological nature of many of the problems that are categorized as postmenopausal complaints, quality of life issues in the menopause clearly merit further attention.

Quality of life assessment have many potential applications in clinical practice, For example, in the evaluation of hormone replacement therapy, quality of life outcomes represent a useful tool for screening and monitoring the initial response and general progress of patients treated with estrogen. Dose response interactions may be followed in relation to changes in quality of life, in order to decide the optimal treatment strategy for each individual. As the severity of vasomotor symptoms usually reflects their impact on quality of life, this information can be employed to predict the

magnitude of the therapeutic response. Patients are very interested in the advantages as well as the potential drawbacks of treatment. Similarly, clinicians are becoming increasingly concerned about the impact that treatment may have on quality of life. By using quality of life data, clinicians can provide their patients with extensive information on different treatment options. Ultimately, enhanced provider-patient communications will serve the purpose of explaining treatment options and hence motivating patients to comply with the prescribed regimen. Compliance is an important issue, as surveys of the use of estrogen tend to show a discrepancy between the publicized enthusiasm for hormone replacement therapy and its actual use, reported by the women themselves, which is considerably lower. In fact, only a minority of the women who might benefit from hormone replacement therapy actually receives treatment (Harris et al., 1990). Reasons for non-use pertain to conservative gynecologists, fear of cancer, unwillingness to interfere with what is considered to be a natural process or simply a lack of knowledge, Women who do receive treatment have been shown to be generally younger, take more regular exercise, have fewer people living in their household and are less likely to be widowed (Ware et al., 1993). There is also an association indicating that in women who use hormone replacement therapy hot flushes and other menopausal symptoms are reported as being more severe (Moorhead et al., 1997).

Given the increasing concern with regard to cost containment in health care, it is essential to point out the utility of quality of life instruments in establishing the most appropriate therapy from a cost perspective. Considering the overall treatment benefits by including effects on morbidity in terms of a reduction in urogenital problems, fewer fractures related to osteoporosis, potential beneficial cardio

protective effects and recently reported intriguing results pointing to effects and recently reported intriguing results pointing to effects on cognitive functioning, a new risk benefit scenario has emerged. Some of these issues have been described extensively elsewhere (Cheung and Wren, 1992; Tostesson and Weinstein, 1991; Fitzpatrick et al., 1992).

Assessment of the quality of life

By definition quality of life is a subjective parameter and direct questioning is therefore a simple and appropriate way of accruing information about how patients fell and function. Health-related quality of life measures have a theoretical basis and as the items are generated directly from patients, the content is perceived as relevant. It has been argued that subjective outcomes, such as quality of life, are generally open to substantial bias interpretation and are often measured with less quantitative rigor. The assessment of quality of life by using standard questionnaires does, however, ensure that the psychometric properties are well documented. For routine use in clinical practice or in clinical trials, it is essential that the instruments employed are simple and comparatively short. Clinicians often express concern over burdening their patients with quality of life assessments. However, it has been shown that the majority of patients welcome the opportunity to report how symptoms and their subsequent treatment affect daily life (Fletcher et al., 1987).

Questionnaires allow uniform administration and unbiased quantification of data, as the response options are predetermined and thus equal for all respondents. Comparison of study results and patient populations can be made, provided a core set

of questionnaires is used. Increasingly, the emphasis has been on self-administered questionnaires, however, these may exclude certain groups of patients, for example, those who cannot read or write the elderly and those with severe somatic conditions. Another problem is that the use of self-administered questionnaires can mean the possible loss of certain score values, though this will be minimized by careful quality control of the questionnaires, Interviews have the advantages that most patients can be assessed and the completeness of the data is ensured. However, these tend to be outweighed by the disadvantages. Interviewers have to be trained, to reduce the variation in the quality of their interviewing, Bias any be introduced relating to age, gender or race and the scoring is subject to bias in interpretation. Last but not least, interviews an expensive way of gathering quality of life data (Aaronson, 1989). Hence, the advantages of using questionnaires in terms of standardization, compatibility, lack of bias and economy of use are significant.

There are two basic types of questionnaire, generic and disease- or treatment-specific (Guyatt et al., 1989; Wiklund et al., 1990). Despite the variability in definition of quality of life, the contents of the different generic scales show many similarities, assessing the ability of patients to cope with their condition physically, emotionally and socially, as well as their general performance at work and in daily life (Fitzpatrick et al.1992). Among the more commonly used instruments are the Nottingham Health Profile (NHP) (Hunt et al., 1986) and the Sickness Impact Profile (Bergner et al., 1981). The generic measures cover the multidimensional aspects of quality of life and are applicable to a wide range of health problems. They provide comprehensive information and results can be compared over studies and populations. There is, however, evidence suggesting that they are less responsive to treatment-

induced changes (Guyatt et al., 1989; Patrick and Deyo, 1989; Fitzpatrick et al., 1992). Another disadvantage is that, in addition to being lengthy and time-consuming to complete, they may not address topics comparatively 'normal' populations, such as women in the postmenopausal period, a low score value merely reflects that the subjects suffer from very few problems. The scales are either able to discriminate versus a normal population, nor are they sensitive enough to detect any improvements. In fact, the use of psychiatric rating scales may be one fact, the reasons why few scientific studies have yet been able to prove that the natural menopause affects mood (Holte, 1992; Nicol-Smith, 1996).

An investigator is not limited to the application of just one tool, but will often find it advantageous to employ a battery of instruments simultaneously. An index intended to measure a single attribute may be unresponsive or insensitive to change, or irrelevant in terms of its content. Thus, the multidimensional approach it the most acceptable and, in terms of clinical relevance, the most appropriate way of assessing quality of life, at least in clinical trials (Fitzpatrick et al., 1992; Wiklund et al., 1992). Several studies, undertaken to address the impact of treatment on various aspects of quality of life during the menopause, have used a whole range of questionnaires (Wiklund et al., 1992; Wiklund et al., 1993; Limouzin-Lamothe et al., 1994).

In the collection of quality of life data, it cannot be emphasized strongly enough that measures that have already been established should be used first and foremost. Undocumented or so-called 'ad hoc' measures are not recommended for use in clinical trials (Cox et al., 1992; Anon, 1991). 'Ad hoc' measures are rarely submitted to validation studies and their psychometric properties are often unknown. Moreover, many of them are designed for a particular study and do not allow

comparisons of study populations or study results. Established measures that provide a better basis for comparisons with previously reported study results should therefore be used (McKeigan and Pathak, 1992; Fletcher et al., 1992). Thus, though generic measures do have their uses, they lack the range, sensitivity and flexibility to deal with the specific problems of a particular condition, such as climacteric complaints (Wiklund and Karberg, 1991).

In contrast, the disease-specific measures, which are confined to addressing the problems of selected patient groups, are more likely to be responsive and make sense to clinicians as well as to patients. The women health questionnaire (WHQ) was one of the very first disease-specific questionnaires developed for the purpose of addressing the particular problems induced by the peri-and post-menopausal periods (Hunter et al., 1986). The WHQ assesses, in addition to vasomotor symptoms, important areas such as other somatic symptoms, mood, sleep problems, cognitive difficulties and sexual functioning. The WHQ is well validated in terms of its psychometric properties and has been used in several clinical trials to monitor treatment-induced changes over time (Wiklund et al., 1992; Wiklund et al., 1993; Limouzin-Lamothe et al., 1994). Recently, an-other menopause-specific quality of life instrument was introduced (MENQOL) (Hilditch et al., 1996). This questionnaire was designed with particular reference to being responsive to change in clinical trials (Hilditch et al., 1996). The MENQOL assesses the impact of vasomotor symptoms in terms of their effects on physical, psychosocial, sexual and global quality of life, in addition to their effects simply as symptoms. A potential disadvantage with disease-specific instruments, in general, is that a new measure is required for every condition, thereby precluding comparisons between conditions. A description of the merits and

shortcomings of the different tools has been presented elsewhere (Wiklund et al., 1990).

In addition to generic and disease-specific questionnaires, there are several measures that address particular problems such as sexual dysfunction (McCoy, and Davidson, 1985), sleep disturbance (Jenkins et al., 1988), pain (Melzack R., 1975) or psychiatric problems (Beck AP., 1967; Goldberg DP., 1972; Hamilton M., 1959). Psychiatric rating scales have been used in many of the studies of the menopause, but a disadvantage of this type of scale is that it is entirely focused on psychiatric problems. As women in their postmenopausal years are not considered to be psychiatric cases, the employment of these scales in inappropriate. Psychiatric rating scales are developed for screening and/or diagnostic purposes, to detect patients with severe psychiatric problems.

Measurement to assess menopause affliction quality of life

There are relatively few measures that can be regarded as particularly relevant to symptoms of menopause and related quality of life.

Greene Climacteric Scale

This was the first properly analyzed climacteric symptom scale. In 1976, Gerald Greene developed his original 30-item self-administered scale (Green, 1976). It was derived from an earlier study by Neugarten and Kraines (Neugarten and Kraines, 1965), based on endocrine and emotional factors underlying the etiology and emotional factors underlying the etiology and dynamics of menopause. Greene

investigated the relationships among menopausal symptoms. Factor analysis of climacteric symptoms established independent domains such as vasomotor and physical. The final scale yielded 21 items from an initial list of 30. Greene's tool represents a pioneering piece of work. While the original scale was never designed today, it applied quantitative techniques to questionnaire construction and marked the beginning of the use of factor analysis in clinical studies with 'patient-reported' outcomes as an endpoint in the field of women's health. Since Greene's early work, factor analysis has been applied world-wide in order to generate new menopausal scales. Later, Greene tried to reconcile the findings of seven other factor analytic studies and meet the demand for a 'communal and comprehensive measure' of climacteric symptoms; this revised new tool was published in 1998 (Green, 1998) and looked at the optimum number of factors of domains to be established with resultant communal' scales of psychological' somatic and vasomotor symptoms. The result is a 2-1 item, four-level questionnaire. This 'standardized' Greene Climacteric Scale of 1998 was employed in a trial of Kliogest (Ulrich, 1998).

Women's Health Questionnaire

The Women's Health Questionnaire (WHQ), developed by Myra Hunter, is a self-administered questionnaire which measures physical and emotional experience and functioning of women aged 45-65 year (Hunter, 1992). It was designed specifically to study possible changes in perceptions of health and well-being during the menopausal transition. The questionnaire wan initially developed in UK English and is composed of 36 items. These constitute nine domains, each providing a score:

depressed mood, somatic symptoms, Memory/concentration, vasomotor symptoms, anxiety/fear, sexual behavior, sleep problems, menstrual symptoms and attractiveness.

The WHQ was used both in epidemiological and intervention studies (Zollner et al., 2001; Karlberg et al., 1995). Recently, the structure of the SHQ was examined in a UK sample; a revised model was developed and verified to be used in multicenter, international studies (Girod et al., 2006). The revised WHQ comprised 23 items, investigating six domains. Reproducibility and responsiveness still need to be documented.

Qualifemme

The Qualifemme questionnaire was developed in France to measure the impact of menopausal hormone deficiency on a woman's quality of life. The first version consisted of 32 items delineated from several other validated and accepted HRQOL instruments. These items were translated and linguistically validated for use in France (Le Floch et al., 1994). The Qualifemme is scored using a visual analog scale. A principal component analysis indentified five domains with 32 items: general (9), psychological (12), vasomotor (2), urogenital (6), and a final domain covering pain and problems with hair and skin (3).

The Qualifemme was applied in a multicenter trial in France (Le Floch et al., 1999). From this experience, Qualifemme appears to be a valid instrument; it also attempts to include the side-effects of menopausal hormone therapy such as androgenic skin effects.

Menopause-specific Quality of Life Questionnaire

The Menopause-specific quality of Life Questionnaire (MENQOL) was developed by a group of researchers from Canada during the mid-1990 (Le Floch et al., 1999). A list of postmenopausal symptoms was established by extrapolation from the menopause and quality-of-life literature plus quality-of life questionnaires and the investigators' clinical experience. The final list included 106 items. The original live domains such as physical, vasomotor, psychosocial and sexual, and working life, upon completion of the study, were reduced by deleting 'working life'.

The final 32-item menopause-specific HRQOL instrument encompasses four subscales (physical, vasomotor, psychosocial and sexual) plus one overall HOQOL item. Each domain is scored separately within a possible range from 1 (not experiencing a problem) to 8 (extremely bothered). The mean of the subscale serves as the overall subscale score. As with the WHQ, no overall score can be obtained from this questionnaire, as the relative contribution of each domain to and overall score is unknown. As with most of the other instruments, MENQUL also does not address the full picture of potential side-effects of menopausal hormone therapy (Zollner et al., 2005).

Menopausal Symptom List

The Menopause Symptom List (MSL) was developed in 1997 to measure the severity of symptoms commonly associated with menopause. The theoretical symptom check list was sent to 40 women aged 45-55 years living in Australia, Following two principal component analyses, 25 significant items emerged in three domains: psychological, vasosomatic, and general somatic (Perz, 1997). The latter combines the anxiety and depression subscales of the Greene Climacteric Scale and

the Women's Health Questionnaire. The vasomotor subscale includes two vasomotor symptoms and other somatic symptoms for reasons not quite apparent. The items are scored on a six-point Likert scale of both frequency and severity. Validation experience is limited.

Menopause Rating Scale

The Menopause Rating Scale has been used since 1992 (Schneider and Doeren, 1996; Hauser et al., 1994). It was initially developed to provide the physician with a tool to document specific climacteric symptoms and their changes during treatment and was seen as an improvement over the commonly applied Kupperman Index. A critical assessment of this new scale, however, disclosed methodological deficiencies, which both in theory and practice limited its use. Accordingly, the original physician-based scale was much improved and validated.

This new MRS questionnaire was standardized in early 1996 using a representative random sample of 689 German women aged 40-60 years (Potthoff et al., 2000). The MRS was formally standardized following up-to-date psychometric methods. Factor analysis of the standardized 11-item version identified three domains: psychological, somato-vegetative, and urogenital. Scoring is based on a five-point Likert scale ranging from no symptoms to mild, moderate, marked or severe complaints.

The results of a follow-up survey demonstrated stability in individual scores. The total score and scores of the three defined dimensions have significant agreement, as demonstrated using k statistics (Schneider et al., 2000).

The validity of the MRS to measure HRQOL in postmenopausal women was determined by comparing the instrument both to the Kupperman Index (Kupperman et al., 1953; Kupperman et al., 1959) and the SF-36 (Schneider et al., 2000). Thus, the MRS is a reliable, well-defined instrument for measuring the impact of climacteric symptoms on HRQOL (Schneider et al., 2000; Wiklund, 1998). It can be regarded as a brief and compact instrument, easy to complete and to score, and suitable for routine use in clinical and other studies. It covers the key complaints of women during and after menopause. This type of scale is not suitable for tailoring specific therapies to the needs of each individual woman.

The need for cross-nationally and cross-culturally valid, reliable, and responsive HRQOL instruments is great. Linguistic validation of the Authors from the Institute of Health Sciences at Oxford have undertaken an extensive review to describe the extent to which patient-assessed outcome measures have been developed and applied and examined whether such instruments are available for all aspects of clinical research (Garratt et al., 2002). They collected 3921 reports, f which 46% were disease-or population-specific, another 22% were generic, 18% were dimension-specific, 10% were utility and 1% were individualized measures. During 1990-1999, the number of new reports of development and evaluation rose from144 to 650 per year. Over 30% of evaluations were cancer, rheumatology and musculoskeletal disorders, and older people's health). The generic measures SF-36, Sickness Impact Profile, and Nottingham Health Profile accounted for 16% of the reports. The authors were not surprised that there is evidence of a lack of consistency in the selection of measures for clinical trials which hinders comparison between studies.

For routine application in clinical practice or in clinical trials, it is essential that the instruments employed are simple and comparatively short. The majority of patients welcome the opportunity to report how symptoms and their subsequent treatment affect daily life. A core set of questionnaires would allow the comparison of study results in patient populations. This is why such widely used and well-validated instruments have been reviewed in this report.

Certain difficulties, however, can introduce bias into the interpretation of data. These include the experiences of some interviewed individuals, particularly of older age who might have difficulty with reading or writing, ethnic and language issues, or being exposed to less experienced interviewers. The expense involved in gathering HRQOL data may also create problems. Standardization, compatibility, minimizing possible bias and economy are therefore important variables for the validity of any type of HRQOL assessment. The application of HRQOL instruments requires the same scrutiny and attention as the measurement of physiological outcomes.

Random and representative samples of the population should be investigated in sufficient numbers and over prolonged periods of time. In terms of statistics, HRQOL is, by definition, an assessment of multiple variables. However, the use of many measures and multiple statistical tests reduces the statistical power of the analysis.

HRQOL is a multi-dimensional concept. Whether or not the aggregation of several dimensions into a summary index is appropriate remains open to continuing debate. A summary score may reflect improvement in one vital area but conceal deterioration in another. Nonetheless, the overall summary score gives an indication whether of not on the subject is better off, unchanged, or worse off. It may also be

useful to display disaggregated information, e.g. by pointing to domains that improved, remaining stable, or deteriorated.

In a larger representative study (Schultz-Zehden, 1998), important sequelae for the understanding of well-being in menopausal women were found to be women's self-confidence, the quality of their partner relationship and the re-orientation process initiated by menopause and their psychosocial condition. Employment is considered to be a protective factor. The experience of relief from several physical and psychosocial conditions has to be considered in the assessment of well-being in menopausal women. Another important example of the application of HRQOL instruments is evidence that the prevalence of individual MRS has been published. The first translation was into English (Schneider et al., 2002). Other translations followed (Heinemann et al., 2003) and the following versions are currently available : Brazilian, Bulgarian, Belgium-French, Belgium-Dutch, Chilean, Chinese, Croatian, English, French, German, Greek, Indonesian, Spanish, Polish, Swedish, Romanian, Russian, South African English, South African Afrikaans, Turkish, Ukrainian (Russia), and Ukrainian (Ukraine).

Menopausal Quality of Life Scale

The Menopause Quality of Life Scale (MQOL) was developed in 2000 (Jacobs et al., 2000). It was intended as a condition-specific questionnaire that examines the effects of menopause on HRQOL as well as the impact of employment, age, and medical history. Cross-sectional information on differences in HRQOL was obtained in a community-based sample of women consequent to a self-rated change in menopausal status. The effects of hormone replacement therapy in the early post-

menopause were investigated. A pilot questionnaire was developed containing 63 items divided into seven domains: energy, sleep, appetite, cognition, feelings, interactions, and symptoms. Items are reported using a six-point Likert scale. The return of 99 questionnaires served for psychometric analysis and resulted in a 48-item questionnaire as well as a global HRQOL question to rate the overall HRQOL.

This structure proved unstable across subsamples. Therefore, the MQOL questionnaire was given an overall score instead of seven subscale scores (Kupperman et al., 1959). The empirical foundation of this questionnaire with several psychometric shortcomings limits the usefulness of this instrument.

Utian Quality of Life Score

The Utian Quality of Life Score (UQOL) is a modification of the original Utian questionnaire from the 1970s (Utian, 1972). It was developed from a questionnaire originally designed to assess the sense of well-being of participants in a treatment study comparing estrogen to placebo (Utain et al., 2002). The UQOL id focused on general quality of life rather than HRQOL in menopause women. Factor analysis was applied through two stages. The 23 items are rated with a five-point Likert scale and create four subscales (occupational, health, emotional, and sexual).

A field study was conducted on 327 women aged 46-65, recruited from 11 separate communities throughout the east and mid-west of the United States, The resulting 23-item instrument was then administered to a second sample of 270 menopausal women and subsequently re-administered to determine test-retest validity. The SF-36 was concurrently administered to determine scale validity.

The UQOL can measure severity of QOL burden. However, only limited data on reliability and validity are as yet available. The paucity of menopausal symptom-specific items may require a parallel application of another more menopausal symptom-related scale for the most widely practiced application of such scales, which is during the menopausal transition.

How the menopause affects an individual's health-related quality of life (HRQoL), as well as the relationship between HRQoL and menopause, is a controversial subject. Four factors appear to be contributing to the discrepancies and controversy surrounding this relationship (Jacobs et al., 2000)

(1) Lack of understanding of the proper definition of HRQoL;

(2) Wide variety of 'checklists' and HRQoL instruments currently in use, each measuring a different aspect of menopause or the climacteric with a different type of underlying scale;

(3) Different samples of women surveyed in each study. Stemming from a wide variety of demographics and cultures;

(4) Different ways of defining and measuring menopausal status.

If a questionnaire in a different language is used, a simple translation is unlikely to be adequate. Although experience with translations is still limited, we know that without rigorous back-translation and pre-testing the instrument may be interpreted differently in the new language (Berkanovic, 1980). Even if the translation is adequate, cultural differences can adversely affect an instrument's measurement properties (Deyo, 1984).

Instrument Development

Steps and procedures vary from author to author based on the goals and purposes of the measurement. According to the five sequential steps, Involved in questionnaire development and testing (Redhakrishna, 2007). Each step depends on fine tuning and testing of previous steps that must be completed before the next step. A brief description of each of the five steps as follows.

Step 1 - - Background

In this initial step, the purpose, objectives, research questions, and hypothesis of the proposed research are examined. Determining who the audience, their background, is especially their educational/readability levels, access, and the process used to select the respondents (sample vs. population) are also part of this step. A thorough understanding of the problem through literature search and readings is a must. Good preparation and understanding of Step1 provides the foundation for Step2.

Step 2- -Questionnaire Conceptualization

After developing a thorough understanding of the research, the next step is to generate statements/questions for the questionnaire. In this step, content (from literature/theoretical framework) is transformed into statements/questions. In addition link among the objectives of the study and their translation into content is established. For example, the researcher must indicate what the questionnaire is measuring, that is, knowledge, attitudes, perceptions, opinions, recalling facts, behavior change, etc.

Major variables (independent, dependent, and moderator variables) are identified and defined in this step.

Step 3 - -Format and Data Analysis

In Step 3, the focus is on writing statements/questions, selection of appropriate scales of measurement, questionnaire layout, format, question ordering, font size, front and back cover, and proposed data analysis, Scales are devices used to quantify a subject's response on a particular variable. Understanding the relationship between the level of measurement and the appropriateness of data analysis is important. For example if ANOVA (analysis of variance) is one mode of data analysis, the independent variable must be measured on a nominal scale with two or more levels (yes, no, not sure), and the dependent variable must be measured on a interval/ratio scale (strongly agree to strongly disagree).

Step 4 - -Establishing Validity

As a result of Steps 1-3, a draft questionnaire is ready for establishing validity. Validity is the amount of systematic or built-in error in measurement (Norland, 1990). Validity is established using a panel of experts and a field test. Which type of validity (content, construct, criterion, and face) to use depends on the objectives of the study. The following questions are addressed in Step 4:

1. Is the questionnaire valid? In other words, is the questionnaire measuring what it intended to measure?

2. Does it represent the content?

3. Is it appropriate for the sample/population?

4. Is the questionnaire comprehensive enough to collect all the information needed to address the purpose and goals of the study?

5. Does the instrument look like a questionnaire?

Addressing these questions coupled with carrying out a readability test enhances questionnaire validity. The Fog Index, Flesch Reading Ease, Flesch-Kinkaid Readability Formula, and Gunning-Fog Index are formulas used to determine readability. Approval from the Institutional Review Board (IRB) must also be obtained. Following IRB approval, the next step is to conduct a field test using subjects not included in the sample. Make changes, as appropriate, based on both a field test and expert opinion. Now the questionnaire is ready to pilot test.

Step 5 - -Establishing Reliability

In this final step, reliability of the questionnaire using a pilot test is carried out. Reliability refers to random error in measurement. Reliability indicates the accuracy precision of the measuring instrument (Norland, 1990). The pilot test seeks to answer the question; does the questionnaire consistently measure whatever it measures?

The use of reliability types (test-retest, split half, alternate form, internal consistency) depends on the nature of data (Nominal, ordinal, interval/ratio). For example, to assess reliability of questions measured on an interval/ratio scale, internal consistency is appropriate to use. To assess reliability of knowledge questions, test-retest or split-half is appropriate.

Reliability is established using a pilot test by collecting data from 20-30 subjects not included in the sample. Data collected from pilot test is analyzed using SPSS (Statistical Package for Social Sciences) or another software. SPSS provides

two key pieces of information. These are “correlation matrix” and “view alpha if item deleted” column. Make sure that items/statements that have 0s, Is, and negatives are eliminated. Then view “alpha if item deleted’ column to determine if alpha can be raised by deletion of items. Delete items that substantially improve reliability. To preserve content, delete no more than 20% of the items. The reliability coefficient (alpha) can range from 0 to 1, with 0 representing an instrument with full of error and 1 representing total absence of error. A reliability coefficient (alpha) of 70 or higher is considered acceptable reliability.

The other widely accepted standard process for the construction of scale instruments is the multi-step procedure proposed by Churchill (1997). The process comprises the following eight steps: (i) definition of the construct to be measure; (ii) the generation of items to represent construct dimensions; (iii) content validity check by expert judges; (iv) items reduction (pre-test); (v) data collection with revised scale; (vi) assessment of the scale’s dimensionality; (vii) assessment of scale reliability; and (viii) assessment of construct validity. Churchill’s process has been used widely in the marketing field, (Cronin and Taylor, 1992; Parasuraman, Zeithaml, and Berry, 1988) tourism field (Lee and Crompton, 1992) and in the recreation field (Kaczynski, 2003; McKay, 1994). Based on Jamie DeCoster (2002), the typical procedure for developing a scale is

1. Write out the original items in the scale. There should be a somewhat larger number of items than you would actually want in the final version of the scale, since you may decide to drop items during revision.

2. Have another person read through the items and check them for clarity. This person does not necessarily need to be an expert in the topic being examined. It is

more important that they have the confidence to point out items that are badly worded, overly complex, or simply difficult to understand. These comments can greatly help sharpen a scale.

3. Administer the current version of the scale to a pretest sample. This should consist of at least 20 respondents, none of whom have seen the scale before.

4. Conduct a preliminary reliability analysis. In this step you obtain the item-total score correlations and the reliability if each item were removed from the scale. Both of these can be obtained easily using either SAS or SPSS

5. Conduct the primary reliability analysis. If you have a particular number of items that you want, simply select the appropriate number from those with the highest item-total score correlation. Otherwise, select all the items that would reduce the reliability if they were removed from the scale, calculate all the reliability of the scale including only the selected items.

6. If the reliability is sufficiently high, proceed to step 7. The items you selected in step 5 compose the final version of your scale. Otherwise you should attempt to rewrite the items with the lowest item-total score correlations (making them more consistent with the abstract construct they are meant to represent) and return to step 3.

7. Administer the final version of the scale to a test sample. In addition to the scale, you should have respondents complete whatever additional measures you will need for your validity analyses.

8. Conduct final reliability analysis. Your reliability estimate should be approximately the same as the estimate calculated in step 5. If the reliability is

significantly lower (such that you think the power of your validity analyses may be endangered) you should treat the sample as a pretest and return to step 4.

9. Conduct validity analyze.

CHAPTER III

RESEARCH METTHODOLOGY

Research design

This descriptive study designed to develop a menopause-specific quality of life instrument for Thai menopause women.

Population and Samples

This study was conducted in urban and rural areas of Surat Thani Province in the Southern Thailand. Population was Thai menopause women aged 45-59 years currently living in Surat Thani Province. Samples were drawn from the population applying convenience sampling technique as in the following steps; a) researcher contacted nurses working at primary health care unit and health volunteers of the villages for assisting in subjects recruitment, b) researcher introduced herself and provided brief information of the study to all potential participants, c) Potential participants who met the inclusion criteria were invited to participate in the study, d) data were collected at participants' home or in community health center at date and time that they convenience. The inclusion criteria were included Thai middle-age a woman (45-59 years old) have ceased menstruation at least for 1 year, has not had a hysterectomy, and has never taken hormonal therapy during the preceding 6 months. The exclusion criteria were contraindications to estrogen use, currently has had unstable medical or social problem, and has other chronic disease that might affect health related quality of life. Participants of each phase would not be allowed to involve in the other step of the questionnaire development.

Sample size

According to the study design, samples of this study were drawn differently in each 3 phases of the study as the following

Phase II Item Development**:** Steps 3 qualitative study to guide item generation

Thirty (30) selected participants who met the inclusion criteria were invited to in-depth interviews. These participants were individually recruited from various groups of ethnicity, income, occupational, education, and age. The interviews were arranged and set up at privacy room in community health center of the communities or at the participant's home in Surat Thani province.

Phase II Item Development: Steps 7 Item reduction (pre-test)

In this step, 400 menopause women who have never been involved in the previous steps, the questionnaire development, were invited to join in the item reduction step. Participants were asked to complete the developed questionnaire for pre-testing. The Pre-testing was conducted to determine if the interpretation of the questions is consistent and the questions are unambiguous and jargon free.

Phase III Psychometric Test: Steps 8 Establish reliability

The Thai menopause-specific quality of life questionnaire was tested the reliability and validity in menopause women. The number of subjects need is equal to the multiplication of the number of items and levels of answers (DeVellis, 2003). The recommended number of the study should be included 5 to 10 subjects per item for up to 300 subject totals (Tinsley and Tinsley, 1987). For example, if the total items of

tool are 100 items, the participants for testing the tool are 500-1000 persons. Therefore, a total of subjects in this step were 402.

Inclusion criteria:

- Eligibility Thai middle-age women (45-59 years old) has ceased menstruation at least for 1 year,

- Who has not had a hysterectomy, and

- Who has not used hormone therapy during the preceding 6 months

Exclusion criteria:

- Contraindications to estrogen use or who has a current unstable medical or social problem and they has other chronic disease that might affect health related quality of life.

Procedure for Instrumental Development

The conceptual model for the instrumental development is applied from Cramer and Spilker (1998). Figure 2 is interrelationships among clinical evaluation, patient's integration and assessment phenomena of menopause-specific quality of life. These three dimensions are integrated to develop instrument for Thai menopause women.

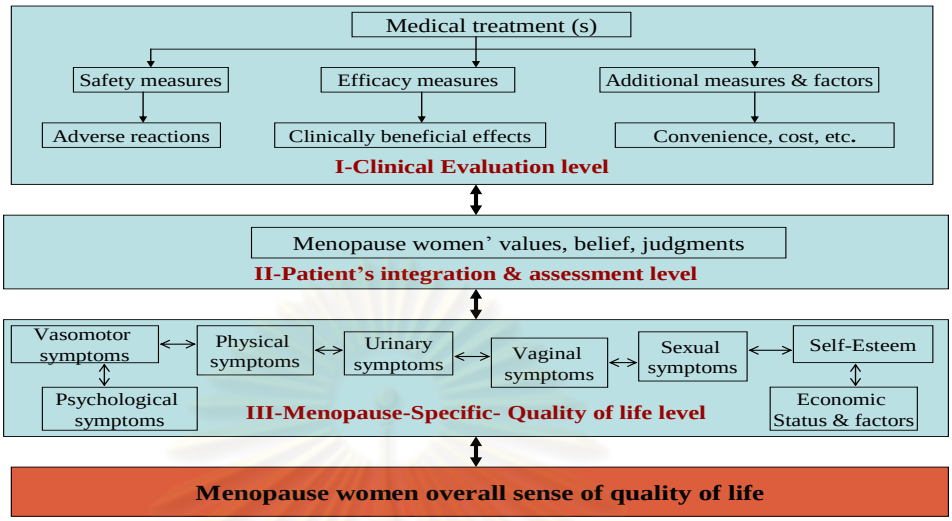


Figure 2 Conceptual for development the instrument

The process of instrumental development comprises of 3 phases covering nine steps as the following summary:

Phase I is covering step1-2: Step 1- Identification of population, and Step 2- Definition of the construct to be measured

Phase II is covering step 3-5: Step 3-Qualitative research to guide item generation; Step 4-Generation of items to represent construct dimensions; Step 5- Design and scale format; Step 6-Content validity check by expert judges and Step 7- Item reduction (pre-test the result on the sample of potential respondents)

Phase III is covering step 8-9: Step 8-Establish reliability and Step 9- Establish validity

A summary of the nine-step process is given in Figure 3.

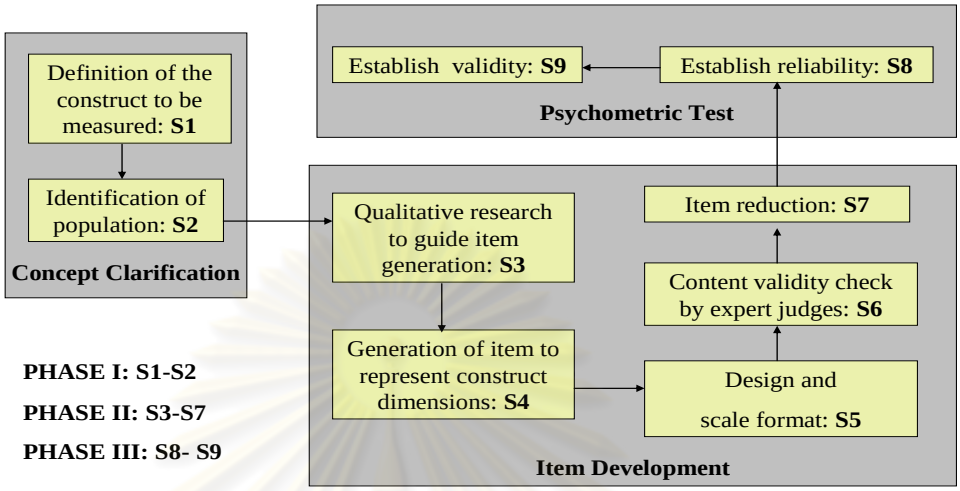


Figure 3 Procedure for Instrument Development

PHASE I Concept Clarification (Step 1 - Step 2)

Step 1 Identification of population

The specific purpose of this instrument is to evaluate the menopause specific quality of life of Thai menopause women. Participants representing the experiences symptoms of menopause were identified. Therefore, inclusion criteria were included eligible Thai middle-age women has ceased menstruation at least for 1 year, who has never had a hysterectomy or used hormone therapy during the preceding 6 months. Participants will be excluded from the study by using the criteria including have had contraindications to estrogen use, who currently unstable medical or social problems or other chronic disease that might affect health related quality of life.

Step 2 Definition of the construct to be measured

In this initial step, the objectives research questions of the study were examined. A thorough study of related literature was conducted to search for definition of menopause-specific quality of life. Researcher reviewed existing measurements related to menopause and quality of life and critically analyzed to obtain the integrity of instruments. Based on the obtained information from the literature review, specific domains were selected to guide developing instrument. Possible questions that belong to each domain were derived.

PHASE II Item Development (Step 3 - Step 7)

Steps 3 Qualitative Study to guide item generation

The primary reason for including this qualitative study step is to provide guidance on the appropriateness of the language to be used in initial scale development. In addition, respondents are able to provide a level of detail in explaining or justify their opinions.

In-depth interviews were undertaken with a sample of Thai menopause women in Surat Thani Province, Thailand. The sample was selected so as to include individuals from a wide spectrum of ethnicity, income, occupational, education, and age. Informed consent for participating in the study was given by participant individually. Participants were provided information about the study that included description of the study, risks and benefits of participation, the right to withdraw from the study at any time, and maintenance of confidentiality. Permission was obtained from all respondents to tape-record by a micro-cassette recorder. The interviews were

performed in private settings in the communities. Researcher applied the four forms of interviews useful for qualitative research (Henderson, 1991) including a) closed-end, b) standardized open-ended, c) interview guide approach and d) informal conversational. The interviews were conducted by using the interview guide approach. During the interview, participants were asked to identify their experiences of menopause symptoms that affected their quality of life. They were asked specifically about each of domains. New respondents were interviewed with consecutive interviews, a technique termed interviewing to redundancy until no new information were identified.

The interview guide approaches were as the following:

1. What are the natural menopause transitions and when do they occur?

2. What sign or symptoms accompany the transitions?

    - Did your urinary system have been changed and how?

    - Did your skin have been changed and how?

    - Did your pulse have been changed and how?

    - Did your extremity sensory have been changed and how?

    - Did your power have been changed and how?

    - Did your dietary system have been changed and how?

    - Did your mood have been changed and how?

    - Did your memory system have been changed and how?

- Did your genital organ have been changed and how?
- Did your sexual intercourse have been changed and how?

3. Can you describe how these symptoms affect you /and person around you?
4. Did you have satisfaction on your menopause transition and how?
5. Which symptoms related to menopause did or you experience during this period and seek for help and how?
6. Which symptoms related to menopause did your family or your friends have been experience during this period and how are the same as you or not? What factors affect the transitions?
7. Did you have been worried about your economic status?
8. Did you have been image about yourself by self-esteem and how?

Interviewing

The actual interview consisted of three main parts. The first part involves introducing researcher and the study. It is crucial that the interviewer establishes a good rapport with the respondents. Interviewer also provided the respondents at ease and main responsibility by carefully listened and observed through a conversation until all of the important issues on the interview guide were explored. This, of course, was one of the most difficult aspects of the in-depth interviewing process. However, there were some strategies that researcher had been used to improve the quality of the in-depth interview experience for both the researcher and the respondents. Some strategies included:

- Active listening: Listened and rephrased carefully to ensure that researcher completely understand the meaning intended by the respondents.

- Patience: Did not rush the respondent and allow her to freely speak while guiding the conversation to cover important issues.

- Flexibility: Opened to slight deviations from each topic, which may require rearranging/reordering the questions or coming up with new questions. If the respondent deviates too far from the topic, then carefully return her to the topic at hand.

- Audio recording: When possible, audiotape the interview for later reference and increased accuracy. Researcher always asked permission from the interviewee before audio recording.

Steps 4 The generation of items to represent construct dimensions

After reviewed a thorough understanding of the literature/theoretical framework and qualitative study, this step was to generate statements/questions for the questionnaire. An initial pool of related items to menopause-specific quality of life was derived.

Steps 5 Design and scale format

The heart of the scale construction was that the scaling method used for selecting items. Several methods were described, grouped according to the type of scale (stimulus-centered, subject-centered, or response). This study used *Subject-*

Centered Scale Methods. Subject-Centered scales are probably the kind of scale in the most frequent use in counseling psychology research. Individual differences in both the clients and the counselors were thought to account for significant portions of counseling outcomes variance. Also possibly because individual differences variables were among the most easily accessible to researchers, much effort have had put into constructing and developing subject-centered scales. The processes were followed:

1. The classic method for developing subject-centered scales is the Likert method. The Likert procedure can be described as follows: A number of items were written to represent the content domain. Five-point anchored rating scales which typically used were response choices for each item (hence, the mistaken use of Likert to refer to the 5-point-rating item format). Scoring weights from 1 to 5 were assigned to the five rating-scale points. Direction of scoring (whether 1 or 5 is high) was immaterial provided it is consistent for all items.

2. The items were administered to a large group of respondents (N of at least 100). Each respondent's item rating choices were scored and the item scores were summed to constitute the respondent's total score.

3. Items are selected according to their ability to discriminate between high and low scores on the total score. One could also use an item-total-score correlation procedure, as was currently done in ability test construction.

4. The best criminating items were then selected to constitute the scale. The scoring of scale was obtained by summing the item scores for the selected items.

Additionally, of all the scale construction methods, the most convenient for researchers was the Likert method because it can be employed with the used of ordinary SPSS programs.

Steps 6 Content validity check by expert judges

The first version of Thai menopause-specific quality of life was refined and edited for validated content by expert judges who are healthcare professionals with menopause. Means for each of the dimensions were obtained by asking respondents to indicate the degree of agreement with each of statements describing the dimensions of menopause-specific quality of life. Those expert judges included gynecologists, and nurses. Each of these judges was given a brief description of the dimensions of menopause-specific quality of life from the literature review and list of potential distinctive facets that characterized each dimension and then they were asked to complete five tasks:

1) Rating each item as being (Petrick, 2002):

A. *Clearly relevant* to the menopause-specific quality of life

B. *Somewhat relevant* to the menopause-specific quality of life

C. *Not relevant* to the menopause-specific quality of life

2) Assignment each of the items in the (a) and (b) categories into one of the total dimension according to the operation were provided by the researcher.

3) Reviewing those items in the (a) and (b) categories which did not fit into one of the specified dimensions and, if possible, suggest additional dimensions into which these items might fit.

4) Editing and improving the items provided for clarity, readability and/or content.

5) Answering a short list of questions provided:

a. Indicate any additional operation of menopause-specific quality of life that might apply to the study.

b. Indicate any items that may be objectionable to respondents.

c. Provide any suggestions, along with a corresponding dimension, for additional items that will improve the content validity of the scale.

d. Indicate any other suggestions that might contribute to improving the study

Steps 7 item reduction (pre-test)

Pre-testing was conducted to determine if the interpretation of the questions is consistent and the questions were unambiguous and jargon free. The questionnaire was administered to a group of 400 menopause women who have never been involved in the previous steps of the questionnaire development. They were asked to describe what each question meant to them, if there were any problems with the question, or if there were any omissions from the instrument. Discrepancies between the intended and understood meanings of the question were noted. The questionnaire was adjusted

to correct the identified problems and was retested using the same criteria on a new set of 10 menopause women.

PHASE III Psychometric Test (Step 8 - Step 9)

The Thai menopause-specific quality of life was tested the reliability and validity in menopause women who meet the inclusion criteria as follows: 1) ability to communicate in the Thai language, 2) ability to respond to questions, and 3) willing to participate in the study. The study excluded all women with contraindications to estrogen use or who have been currently experience unstable medical or social problem and other chronic disease that might affect health related quality of life. The sample size was based on DeVellis (2003) where the number of subjects need is equal to the multiplication of the number of items and levels of answers. Tinsley (1987) noted that it is sometimes difficult to estimate the number of expected factors. In that event, they extended the recommendation to include 5 to 10 subjects per item for up to 300 subject total.

Steps 8 Establish reliability

Test-retest reliability was determined by comparing domain and summary scores using infraclass correlation coefficients. Domain internal consistency was calculated using Cronbach's alpha. To test reliability, this measurement tool was administered at two time points. Ideally, the time interval should not exceed six months because most measures were not stable over long periods of time (Anastasi, 1982). Then, the first administration was the baseline followed by re-administration at 2 weeks. Reliability was expressed as a number (a coefficient). The higher the number was the more reliable. Theoretically, reliability coefficients can range from 0 (the

measure consists of error only) to 1.0 (no error exists in the measure) (Windsor et al., 1994). In general, classification guidelines for reliability were as follows: if the correlation is higher than 0.7, it is considered to be adequate reliability; whereas if the correlation is 0.6 or less, it is considered marginal. Correlations of 0.8 or higher are excellent (Minium, 1978).

The time period for test-retest reliability was chosen (two weeks) in this study because that it was long enough for individuals not to remember specific responses and not too long so that maturation and learning was most likely not occur in this time frame, affecting the answers. Monitoring process by village health volunteer and appointment before collecting data to ensure the numbers and the same samples were filled the questionnaire. The researcher assistants for collecting data were nursing **i**nstructors at Borommarajonani College of Nursing, Surathani, Thailand**.**

Steps 9 Establish validity

Although a scale must be reliable in order to be valid, the mere present of reliability does not ensure validity. Validity, synonymous with accuracy, suggests that a measure accurately captures the characteristic of interest (Churchill, 1995). Because it is not possible to know the true score, we must infer validity by looking for evidence of its pragmatic, content and construct validity (Churchill, 1995). Pragmatic validity is the ability of the instrument to predict some other characteristic or behavior. In the initial development of a scale, it is more important to determine what the measure actually measure than whether is predicts accurately or not. To determine this requires concentrating on content and construct validity. “Content validity focuses on the adequacy with which the domain of the characteristic is captured by

the measure" (Churchill, 1995). Measuring construct validity, on the other hand, requires ensuring that the instrument is actually measuring what it intends to measure (Churchill, 1995). Factor analysis is one way of establishing construct validity. Factor analysis is calculated to statistically define subgroups for the indexes created by the researcher (Field, 2005). According to Nunnally and Berstein (1994), the most appropriate method for assessing the construct validity is to investigate the coefficient alphas for each of the dimensions. Additionally, a factor analysis will run on items into the identified dimensions to provide further insight into whether or not items should be dropped. Therefore, factor analysis was cautiously conducted to obtained instrument construct validity of this study.

Ethical considerations

According to the focus and reporting on personal information about clients participating in the study, the first gain their consent to do so. Participants should understand what researcher is doing with them and how any information associated with them were reported by clearly convey terms of confidentiality regarding access to results. They should have the right to participate or not. Have participants review and sign an informed consent form. Therefore, to obtain informed consent from all participants appropriate standard ethical safeguards were followed according to the Helsinki Declaration in its latest version, including:

1. Protection of confidentiality of personally identifiable data of all participants, Names and contact details of participants were not be stored with other data

obtained through primary data collection, but a coding system was used to link data to participant names and contact details for re-interview where possible.

2. Names and contact details of participants were stored separately from all other data. All data were stored in locked cupboards that can be accessed only by members of the research team. Neither names nor any details of participants could be used to identify individuals in data analysis and report.

3. Protection of privacy of all participants, the privacy of participants was chosen by carried out the data collection, interviews and discussions in the private locations.

4. Respect of ownership of personal and intellectual property

5. Respect for equality and justice in research

6. This study was approved by the ethical research committee from Chulalongkorn University.

CHAPTER IV

RESULTS

The goal of this study was to develop a menopause-specific quality of life instrument for Thai menopausal women. According to the methodology of the study that divided into three phases, this chapter presents the results of the study as phase of the study design.

Phase I Concept Clarification (Step 1-2)

Step 1 Identification of population

The goal of the instrument is to evaluate the menopause specific quality of life of Thai menopausal women. Therefore, participants representing the experiences symptoms of menopause were identified. Inclusion criteria were including eligibility Thai middle-age women has ceased menstruation at least for 1 year, has not had a hysterectomy, and had never used hormone therapy during the preceding 6 months. Participants would be excluded with contraindications to estrogen use or have had currently unstable medical or social problem and other chronic disease that might affect their health related quality of life.

The subjects were menopausal women living in Surat Thani, Thailand. They were separately invited to participate in three step of the study. A total of 831 participants from three groups were engaged in the study as the following:

Sample A. In-depth interviews were undertaken with 30 samples of Thai menopausal women in Surat Thani province, Thailand. The majority of participants (60.00%) were aged between 55-59 years, 76.66% were married, and 56.66% of those women have more than two children.

Sample B. Item reduction of questionnaire development, 399 menopausal women who had not been involved in the previous steps of the questionnaire development were participated. Almost three out of four women were aged between 50-59 years. 267 (66.91%) were married while 38 (9.52%) were single. Most women (43.35%) were private employee. And only 6.51% were government officer. The majority of them were Buddhist (97.74%). The number of living children ranged from 0 to 8 in the family.

Sample C. Psychometric test, the questionnaires were administered to a group of 402 menopausal women who had not been involved in the previous steps of the study. The majority of the samples were aged between 50-59 years. The percentage of the women who had received some education was 91.05%. 60.69% had attained primary school education, interestingly, 8.95% of the women had not attended school at all. Regarding marital status 8.45% were single while 67.66% were married. 41.04% were private employee while 22.13% were unemployed. Majority of them have children 2 or more (73.86%). Most of them had not smoking and alcohol consumption (98.25%), however 1.74% and 2.48% of the women had cigarettes and small amount of alcohol consumption. Demographic characteristics of the subjects who participated in the study are presented in Table 1.

Table 1 Demographic Characteristics of the three samples.

	Sample A* **n = 30**	**Sample B**** **n = 399**	**Sample C***** **n = 402**
Age			
45-49	3 (9.99)	100 (24.05)	100 (24.8)
50-54	9 (30.0)	139 (34.83)	140 (34.82)
55-59	18 (60.00)	160 (40.10)	162 (40.29)
Education level			
No formal education	9 (30.0)	38 (9.52)	36 (8.95)
Primary school	15 (50.0)	239 (59.89)	244 (60.69)
High school	5 (16.66)	75 (18.79)	77 (19.15)
Tertiary/ university	1 (3.33)	47 (11.77)	45 (11.19)
Marital status			
Never married	7 (23.33)	38 (9.52)	24 (8.45)
Married	23 (76.66)	267 (66.91)	272 (67.66)
Widowed	-	75 (18.79)	80 (19.90)
Divorced	-	19 (4.76)	16 (3.98)
Employment status			
Unemployed	9 (30.0)	90 (22.55)	89 (22.13)
Employed	11 (36.66)	110 (27.56)	113 (28.11)
Government officer	2 (6.66)	26 (6.51)	35 (8.70)
Private employee	8 (26.66)	173 (43.35)	165 (41.04)
Religion			
Buddhist	30 (100.00)	390 (97.74)	390 (97.01)
Christian	-	2 (0.50)	3 (0.74)
Islam	-	7 (1.75)	9 (2.23)
Number of Children			
0	2 (6.66)	53 (13.30)	51 (12.70)
1	3 (10.00)	53 (13.30)	54 (13.40)
2	8 (26.66)	120 (30.10)	122 (30.34)
3	17 (56.66)	108 (27.10)	111 (27.60)
≥4	-	65 (16.40)	64 (15.92)
Smoking status			
None	30 (100.00)	389 (97.49)	395 (98.25)
Cigarette	-	10 (2.50)	7 (1.74)
Alcohol consumption			
No alcohol	30 (100.00)	385 (96.49)	392 (97.51)
Small a mousse	-	14 (3.50)	10 (2.48)

Data are presented as n (%). *: Item generation (In-depth interviews);
: item reduction; *: psychometric test.

Step 2 Definition of the construct to be measured

In this initial step, the review of related literature attempted to conceptualize and assess both the same construct and closely related constructs. For instance, a thorough study of literature in which all the items based on the definition of menopause-specific quality of life.

A review of five studies evaluating the impact of menopause in different cultures concluded that there were large differences in the experience of menopause perceived by women of the same culture and among the different cultures. Menopausal symptoms appeared to be caused by a combination of physical changes, cultural influences and individual perceptions (Robinson, 1996).

According to the current literature, there were three aspects of identifying menopausal transition (Olazabal et al. 1999). The first was the biological/medical model that emphasized on the climacteric as a deficiency state, a kind of disease needing life-long substitution treatment. The second model was the psychosocial model that focused on the menopausal transition as a natural part of development, which should not be treated by medication such as estrogen (Olazabal et al. 1999). This model can lead to personal development with new knowledge and self-esteem, but in women with severe climacteric symptoms this model may lead those women to a conflict and a feeling of failure and loss of self-esteem. The third model was the holistic perspective that described the menopausal transition as a multidimensional process. The process could be varied identify individually by women due to a number of factors of their lives experiences and expectations. This perspective may influence menopausal women to adapt to the occurring changes and seek to obtain support for

their needs that stimulated them to self-control and empowerment (Olazabal et al. 1999).

Therefore, the conceptual framework of menopause-specific quality of life of this present study was define as a subject's perception of well-being that derived from menopause transition which composed of 8 domains including vasomotor symptoms, physical symptoms, psychological symptoms, urinary symptoms, vaginal symptoms, sexual symptoms, economic status and self-esteem.

Phase II Item development (Step 3-7)

Step 3 Qualitative study to guide item generation

In-depth interviews were conducted with samples of Thai menopausal women in Surat Thani Province. During the interview, participants were asked to identify experiences of menopause symptoms that affected their quality of life. A summary of each respondent is presented as the following interview guide:

1. What are the natural menopause transitions and when do they occur?

The common term which can be generally understood a referring to menopause is: 'luad cha pai lom cha ma'. This term is an idiom literally meaning, 'The blood will go-the wind will come. It refers to the changes in a woman's behavior, emotions and well-being that occurred before, during and after the menopause.

All respondent women in the study viewed menopause as a natural life process and accepted it as a normal physiological changes. One-third of those women denied experience of any abnormal symptoms. In fact, they may not recall the experience such as menstrual irregularities or other symptoms, but simply noted that the unanticipated cessation of menstruation and then realized that they were in the postmenopausal period.

2. Are there any sign or symptoms accompany during the transitions?

Menopausal symptoms may effect to women differently. Some women may have none symptoms at all while some women may experience with quite severe symptoms. The symptoms may vary from none symptom to severe symptom. For example, some women only had hot flashes, others had mood changes, vaginal dryness and decrease in sexual desire, whereas most women had no symptoms.

3. Can you describe how these symptoms affect you/and person around you?

All respondent women expressed that they were satisfied with family life so that they were not concerned about loss of fertility. Most of them perceived menopause as a sign of aging. Although they did not like the idea of getting old, they accepted it. Buddhism plays important role in shaping Thai beliefs and behaviors. The Buddhist concept of the impermanence of life leads women to accept the decline of body functions that comes along with age. Women accept that at this age menstruation would stop and they would naturally enter the ageing period. Some women reported that the menopause transition was influenced to emotional changes,

mainly increased emotional instability and feelings of sadness. On the other hand, one woman felt that the menopausal transition lead her to have better courage and greater self-confidence.

4. Did you have satisfaction on your menopause transition and how?

Many women had noticed physical changes. They interpreted it as being associated with normal ageing. These included joint stiffness. General pain in the body and poor physical capacity, limited their professional and leisure time activities. A number of the women associated wrinkles, grey hair and rolls of fat with becoming middle-aged. Some women considered these changes as natural process and possible to accept it, whereas others considered the changes as troublesome and frightening.

5. Which related symptoms of menopause that you experienced and sough for help and how?

Most of women tended to view menopause as a private subjects. The bodies' experiences were considered private and were not appropriated for social discussion. The changes or symptoms during menopause that could be related to illness are normalized. Many women do not seek for medical attention until a problem is fairly advanced.

Women who experience somatic symptoms at menopause believe that these were temporary and did not seek for medical attention. In addition, sexual inactivity is considered as inappropriate activities in older people and loss of libido with ageing is

related to both natural and appropriate, therefore, no perimenopausal women sought help for this.

6. Did you have been worried about your economic status?

Financial crisis may increase to woman's tension and threaten to the quality of life. Some women had insecure jobs and they worried about their responsibility for meeting financial needs, whereas, some menopausal women believed that emotional symptoms were considered to be consequences of stressful economics or personal problems, and were not associated with menstrual irregularity.

Steps 4 The generation of items to represent construct dimensions

This step was to generate statements/questions for the questionnaire. An initial pool of related items of menopause-specific quality of life was generated by a critical review from literature, the existing menopause-specific quality of life measures and information from in-depth interviews. Therefore, 80 potential items were generated in Thai to form an initial draft of the Thai Menopause-Specific Quality of Life Instrument (TMSQOL). Items of the TMSQOL were supposed to be indicators of quality of life in Thai menopausal women. They were written in wordings that commonly used in day to day communication. The items were phrased in form of questions asking about menopausal women's perception of well-being during the menopause transition. This preliminary instrument composes of 8 domains including vasomotor symptoms, physical symptoms, psychological symptoms, urinary symptoms, vaginal symptoms, sexual symptoms, economic status and self-esteem.

Steps 5 Design and scale format

A list of items was generated into a questionnaire format, item scaling was performed. A 5-point Likert-type scaling procedure was utilized for the instrument. The 5-point scale was scored as degree of menopausal women's perception. Scoring weights from 1 to 5 were assigned to the five rating – scale points (not at all to very much). The questionnaire consisted of two sections. The first section was demographic information. The second section comprised 80 items related to menopause-specific quality of life.

Steps 6 Content valid check by expert judges

This step used three experts to confirm items for initial content validity. They were two gynecologists, and one nurses. Content validity concerns items sampling adequacy that their extents reflect a content domain (DeVellis, 2003). This step devised a content valid index (CVI) based on the areas of agreement among the three experts. The CVI was defined as the proportion of items given a rating of quite relevant and or very relevant by the majority of experts involved (Waktz, Strickland, and Leng, 2005). The process of analysis used a 4-point rating scale: (1) not relevant (2) somewhat relevant (3) quite relevant and (4) very relevant. The CVI was computed from the categories with the total number of responses divided by the number of experts. A CVI of 0.80 or more was acceptable (Streiner, 2005; Davis, 1992). Moreover, face validity were confirmed by the contents review of expertise. Questions and formatting were responded to ensure that the questions and instructions

were free of ambiguities. After obtained content validity and face validity, the preliminary instrument with 80 items of 8 domains (CVI=0.96) was ready for pre-test.

Steps 7 item reduction (pre-test)

Item reduction involved deciding which items should be retained and which ones should be discarded. The principal components analysis was carried out on the 399 questionnaires. All questionnaires were scored using Likert-type format.

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.935, indicating excellent sampling adequacy and relatively compact patterns of correlation, such that factor analysis should produce distinct and reliable factors (Field, 2000). Bartlett's test of Sphericity was significant ($p<.000$), indicating that there were some relationships among the variable (Field, 2000). In examining the data from the rotated factor analysis, investigators set a criterion level of greater than .40 as the factor loading criterion needed to determine whether an item loaded on one factor or another (Costello and Osborne, 2005). Three items had factor loadings less than 0.4. Consequently, those 3 items were discarded. The remaining 77 items were formed for Thai menopause-Specific Quality of Life (TMSQOL).

After examining the various factor solutions, investigators found that a three-factor solution provided the most meaningful factor pattern and accounted for 71.74% of the total variance. The alpha coefficients indicated good internal consistency for the composite scale ($\alpha = .93$). The factor structures are described as follows.

Factor1 comprised of 63 items with factor loadings ranging from .439 to .768. This factor related to menopausal women's perception of well-being that derived-

from menopause transition including vasomotor symptoms, physical symptoms, psychological symptoms and urinary symptoms. This factor was called physio-psychosocial.

Factor2 comprised of five items, with factor loadings ranging from .564 to .700. These items reflected menopausal women's perception of well-being that derived from menopause transition including economic status and self-esteem. This factor was called economic and self-esteem.

Factors3 was termed sexual. It contained nine items with factor loading ranging from .429 to .796. These items reflected menopausal women's perception of well-being that derived from menopause transition including vaginal symptoms and sexual symptoms.

Phase III Psychometric Test (Step 8-9)

Steps 8 Establish reliability

Total of402 menopausal women completed the Thai Menopause-Specific Quality of Life (TMSQOL) at baseline and 2 weeks. The ICC was 0.952.

Steps 9 Establish Validity

In the initial development of a scale, it is more important to determine what the measure actually measure rather than whether is predicts accurately or not. To determine this requires concentrating on content and construct validity. "Content validity focuses on the adequacy with which the domain of the characteristic is

captured by the measure" (Churchill, 1995). Measuring construct validity, on the other hand, requires ensuring that the instrument is actually measuring what it intends to measure (Churchill, 1995). Factor analysis is one way of establishing construct validity. Additionally, a factor analysis will run on items into the identified dimensions to provide further insight into whether or not items should be dropped. To examine the underlying structure of the relationships among the 77 items with in the Thai Menopause-Specific Quality of Life (TMSQOL), the 402 sample data was use to analysis the factors.

KMO and Bartlett's Test[a]

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.895
Bartlett's Test of Sphericity	Approx. Chi-Square	1.963E4
	df	2926
	Sig.	.000

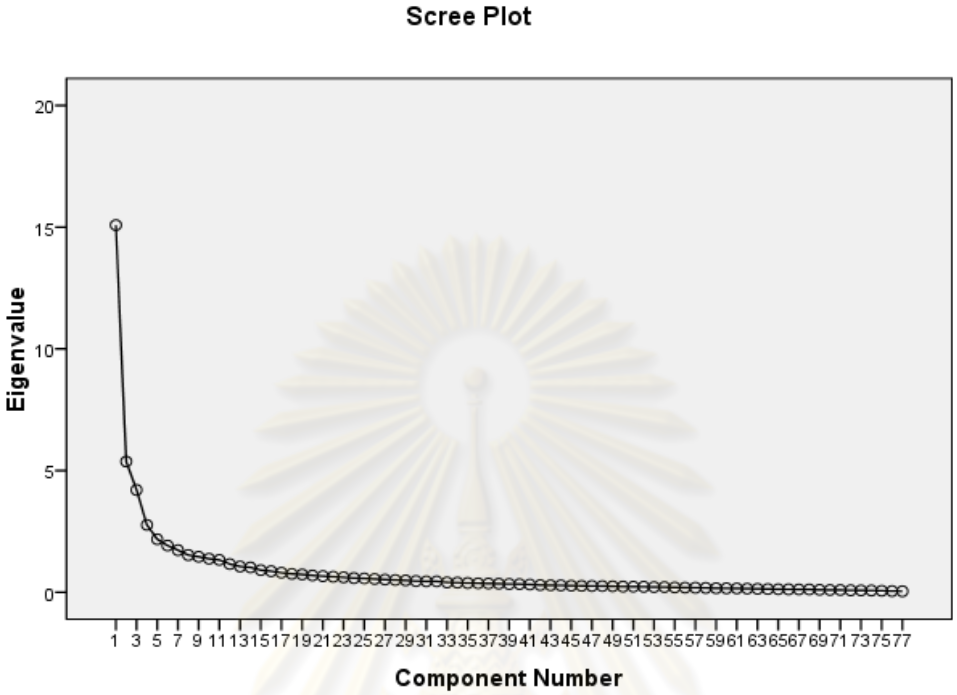
a. Based on correlations

The KMO value of 0.895 and the high significant level cp value = 0.000) in Bartlett's test of Sphericity showed that these samples were adequate for factor analysis. In examining the data from the rotated factor analysis, investigators set a criterion level of greater than 0.40 as the factor loading criterion. Fourteen items had factor loadings less than 0.40. Consequently, 14 items were discarded, remaining 63 items for the TMSQOL. After the examining the various factor solutions, investigators found that a three-factor solution provided the most meaningful factor

pattern and accounted for 69.03% of the total variance. Items within each factor were analyzed and named based on the item description. There were totally 63 items within 3 factors. These factors and its loading are explained in the following.

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.088	24.071	24.071	15.088	24.071	24.071	5.689	9.076	9.076
2	5.372	8.570	32.641	5.372	8.570	32.641	4.869	7.768	16.844
3	4.203	6.705	39.346	4.203	6.705	39.346	3.095	4.939	21.782
4	2.765	4.411	43.757	2.765	4.411	43.757	3.957	6.313	28.095
5	2.177	3.473	47.231	2.177	3.473	47.231	2.196	3.504	31.599
6	1.918	3.060	50.291	1.918	3.060	50.291	2.305	3.677	35.276
7	1.729	2.758	53.049	1.729	2.758	53.049	3.763	6.004	41.281
8	1.526	2.435	55.483	1.526	2.435	55.483	3.227	5.148	46.429
9	1.456	2.324	57.807	1.456	2.324	57.807	2.274	3.628	50.057
10	1.377	2.197	60.004	1.377	2.197	60.004	2.540	4.053	54.110
11	1.328	2.119	62.123	1.328	2.119	62.123	1.864	2.974	57.084
12	1.159	1.848	63.971	1.159	1.848	63.971	2.008	3.203	60.287
13	1.057	1.686	65.657	1.057	1.686	65.657	2.119	3.380	63.667
14	1.023	1.632	67.289	1.023	1.632	67.289	1.308	2.087	65.755
15	.906	1.445	68.734	.906	1.445	68.734	1.612	2.572	68.327
16	.864	1.379	70.113	.864	1.379	70.113	1.119	1.786	70.113
17	.800	1.277	71.390						
18	.754	1.204	72.594						
19	.730	1.164	73.758						
20	.690	1.100	74.858						
21	.662	1.056	75.914						
22	.638	1.017	76.932						
23	.612	.976	77.908						
24	.582	.929	78.837						
25	.567	.905	79.742						
26	.544	.868	80.610						
27	.523	.834	81.443						
28	.502	.801	82.244						
29	.487	.778	83.021						
30	.458	.731	83.753						



The first factor with an Eigen value of 18.32 emerged significant with 51 items. This factor contributed a variance of 23.80% to the total variance. The factor loading ranged from 0.427 to 0.711. This factor related to subject's perception of well-being that derived from menopause transition which composes of physical, physical, psychological, urinary and vaginal symptoms. Fator1 was labeled physio-psychological well-being.

The second factor has nine items with significant loading, which ranged from 0.439 to 0.623. This factor contributed a variance of 7.13% to the total variance with an Eigen value of 5.49. The items described as a subject's perception of well-being that derived from menopause transition which composes of sexual, economic and self-esteem. This factor was called sexual-socioeconomic well-being.

The Eigen of the third factor was 4.24. The variance contributed by this factor was 5.51% the three items in this factor describes a subject's perception of well-being that derived from menopause transition which composes of vasomotor symptoms Factor 3 was labeled vasomotor well-being.

Thus, the Thai menopause-Specific quality of life instrument had 63 items with 3 factors namely, physio-psychological well-being, Sexual-socio-economic well being and vasomotor well-being.

CHAPTER V

DISCUSSIONS CONCLUSIONS AND RECOMMENDATIONS

This chapter provides a summary of this study which is divided into three sections: the first section is focused on discussions base on research methodology and research results. The second section is shown the conclusion of the results and the last section is described recommendations from this study, limitations and implications and recommendation in conducting further research.

Section I: Discussion

The goal of this study was to develop a menopause-specific quality of life instruments for Thai menopausal women. The discussion of this study is presented as phase of the study design which divided into three phases: Concept Clarification, Item Development and Psychometric Test

Phase I Concept Clarification (Step 1-2)

Step 1 Identification of population

The goal of using this instrument is to evaluate the menopause specific quality of life of Thai menopausal women. Therefore, participants representing the experiences symptoms of menopause were identified. Inclusion criteria included eligibility Thai middle-age women who have ceased menstruation at least for 1 year, who has not had a hysterectomy, and who had never used hormone therapy during the preceding 6 months. Participants would be excluded with contraindications to

estrogen use or currently experience unstable medical or social problem and have had other chronic disease that might affect health related quality of life.

Step 2 Definition of the construct to be measured

In this step, the thorough review of previous literatures that attempts to conceptualize and assess both the same construct and closely related constructs.

According to the review of literature, the conceptual framework of menopause-specific quality of life, of the present study was defined as a subject's perception of well-being that derived from menopause transition which composes of 8 domains: Vasomotor symptoms, Physical symptoms, Psychological symptoms, Urinary symptoms, Vaginal symptoms, Sexual symptoms, Economic status and Self-esteem, which based on the main supported following:

1. The conclusion of study of the impact of menopause in different cultures is that there were large differences in the experience of menopause by perception of women of the same culture and among different cultures. Menopausal symptoms appear to be caused by a combination of physical changes, cultural influences and individual perceptions (Robinson, 1996).
2. The psychosocial model looks at the menopausal transition as a natural part of development, which should not be treated by medication such as estrogens (Olazabal et al. 1999). This model can lead to personal development with new knowledge and self-esteem; on the other hand in women with severe climacteric symptoms this model may lead to a conflict and a feeling of failure and loss of self-esteem.

3. Thai women viewed menopause as a natural life process and accept it as a normal physiological changed (Peeyananjarassri K. et al., 2006). Many Thai women expressed positive views about menopause (Punyahotra S., Dennerstein and Lehert, 1997). A National study of health behavior of pre and post-menopausal Thai women (Ministry of Public Health, 1996) found that approximately 78% of women believed that menopause is a natural process. However, about 65% and 60% of women also believed that menopause accelerate ageing process and cause emotion changes, respectively.
4. Thai postmenopausal women reported sexual symptoms more frequently than women with pre- or perimenopausal. These sexual symptoms were the main causes for postmenopausal women who loss quality of life (Peeyananjarassri K. et al., 2006).
5. Thai women were more likely satisfaction with personal domains of life (e.g., spiritual life, family life, and self) whereas there were less satisfied with environmental domains of life were (e.g., life in Thailand, Thai government, Bangkok administration). Additionally, the significant determinants of overall life satisfaction were education and household income. The results suggested that both human capital (education) and economic well-being are important to overall life satisfaction of Thais (Orose and Ralph, 1990).

Phase II Item development (Step 3-7)

Step 3 Qualitative study to guide item generation

In-depth interviews were undertaken with a sample of Thai menopausal women in Surat Thani Province. During the interview, participants were asked to identify experiences of menopausal symptoms that affected their quality of life. The mix of qualitative and quantitative methods of data provided the study with integrity of research design for developing the validated measure and better understanding quality of life of Thai menopausal women.

Steps 4 The generation of items to represent construct dimensions

This step was to generate statements/questions for the questionnaire. An initial pool of items relating to menopause-specific quality of life was generated by a critical review of the existing literature of menopause-specific quality of life measures and in-depth interview. Through this process, 80 candidate items were generated in Thai to form an initial draft of the Thai Menopause-Specific Quality of Life Instrument (TMSQOL). Items of the TMSQOL were supposed to be indicators of quality of life in Thai menopausal women. They were written in wordings that were commonly used in day to day communication. The items were phrased in form of questions asking about menopausal women's perception of well-being during menopausal transition period which composes of 8 domains including vasomotor symptoms, physical symptoms, psychological symptoms, urinary symptoms, vaginal symptoms, sexual symptoms, economic status and self-esteem.

Negatively worded items have lower validity coefficients than positively worded ones (Holden et al., 1985; Schriesheim and Hill, 1981). The scales that have

stems with both positive and negative wording are less reliable than those where all the stems are worded in the same direction (Barnette, 2000). The scales of this study have stems with both positive and negative wording. However, the majority of items (993.70%) are negative wording and the less of items (6.3%) are positive wording. Thus, it concluded that the majority of stem are worded in the same direction.

Steps 5 Design and scale format

A list of items was generated into a questionnaire format, item scaling was performed. A 5-point Likert-type scaling procedure was utilized for the instrument. The 5-point scale was scored as degree of menopausal women's perception. Scoring weights from 1 to 5 were assigned to the five rating – scale points (not at all to very much). The Thai Menopause-Specific Quality Of Life uses a 5-point Likert scale response format, which is generally accepted format for instruments designed to measure attitudes and beliefs (Gable and Wolf, 1993). Moreover, the simple 5-point scales convenient for study members to complete.

Steps 6 Content valid check by expert judges

This step used three experts to confirm items for initial content validity, which were two gynecologists, and one nurse. Content validity concerns items sampling adequacy that their extents reflect a content domain (DeVellis, 2003). This step devised a content valid index (CVI) based on the areas of agreement among the three experts. The CVI is defined as the proportion of items given a rating of quite relevant and or very relevant by the majority of experts involved (Waktz, Strickland, and Leng, 2005). The process of analysis used a 4-point rating scale: (1) not relevant (2)

somewhat relevant (3) quite relevant and (4) very relevant. The CVI was computed from the categories with the total number of responses divided by the number of experts. A CVI of 0.80 or above was acceptable (Streiner, 2005 and Davis, 1992). Moreover, face validity were confirmed by all experts reviewing the contents, questions and formatting while responding to ensure that the questions and instructions were free of ambiguities. After content validity and face validity, the scale of 80 items which composes of 8 domains (CVI=0.96) was ready for pre-test.

Steps 7 item reduction (pre-test)

Item reduction involved deciding which items should be retained and which ones should be discarded. The principal components analysis was carried out on the 399 questionnaires. All questionnaires were scored using Likert-type format.

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.935, indicating excellent sampling adequacy and relatively compact patterns of correlation, such that factor analysis should produce distinct and reliable factors (Field, 2000). Bartlett's test of Sphericity was significant ($p<.000$), indicating that there were some relationships among the variable (Field, 2000). In examining the data from the rotated factor analysis, investigators set a criterion level of greater than .40 as the factor loading criterion needed to determine whether an item loaded on one factor or another (Costello and Osborne, 2005). Three items had factor loadings less than 0.4. Consequently, 3 items were deleted, leaving 77 items for Thai menopause-Specific Quality of Life (TMSQOL).

After examining the various factor solutions, investigators found that a three-factor solution provided the most meaningful factor pattern and accounted for 71.74%

of the total variance. The alpha coefficients indicated good internal consistency for the composite scale (α = .93). The factor structures are described as follows.

Factor 1 had 63 items, with factor loadings ranging from .439 to .768. This factor related to menopausal women's perception of well-being that derives-from menopause transition which composes of vasomotor symptoms, physical symptoms, psychological symptoms and urinary symptoms. This factor was called physio-psychosocial.

Factor 2 had five items, with factor loadings ranging from .564 to .700. These items reflected menopausal women's perception of well-being that derives-from menopause transition which composes of economic status and self-esteem. This factor was called economic and self-esteem.

Factors 3 was termed sexual. It contained nine items with factor loading ranging from .429 to .796. These items reflected menopausal women's perception of well-being that derives from menopause transition which composes of vaginal symptoms and sexual symptoms.

Phase III Psychometric Test (Step 8-9)

Steps 8 Establish reliability

In the social sciences, acceptable reliability estimates range from .70 to .80 (Nunnally and Bernstein, 1994). Of the 402 menopausal women who completed the Thai Menopause-Specific Quality of Life (TMSQOL) at baseline and 2 weeks. The ICC was 0.952. This is higher stakes testing should have higher standards of instrument reliability (Nunnally and Bernstein, 1994). Additionally, reliable

instruments introduce less error into the statistical measurement and resulting analysis (DeVellis, 1991).

It should be note that test length also factors into the reliability estimate. Simply, longer test yield higher estimates of reliability. This phenomenon can be best explained through an examination of the Spearman Brown prophecy equation, which indicates that as number of items increase, there is a direct increase in the reliability estimate. However, on must consider the reliability gains earned in such situations, as infinitely long test are not necessarily desirable. For instance, if you have an 80-item testing instrument with an internal consistency reliability coefficient of .78 and the Spearman-brown prophecy indicates that your reliability estimate will increase to .85 if you add an additional 25 items, you may consider that the slightly lower reliability estimate is more desirable than an excessively long instrument (Crocket and Algina, 1986; Mehrens and Lehman, 1991, Gregory, 1992).

In this study, Thai Menopause-Specific Quality of Life instrument have a 63-item and internal consistency reliability coefficient of 0.952 which indicated that test length are appropriate.

Steps 9 Establish Validity

In the initial development of a scale, it is more important to determine what the measure actually measure than whether is predicts accurately or not. To determine this requires concentrating on content and construct validity. “Content validity focuses on the adequacy with which the domain of the characteristic is captured by the measure” (Churchill, 1995). Measuring construct validity, on the other hand, requires ensuring that the instrument is actually measuring what it intends to measure

(Churchill, 1995). Factor analysis is one way of establishing construct validity. Additionally, a factor analysis will run on items into the identified dimensions to provide further insight into whether or not items should be dropped. To examine the underlying structure of the relationships among the 77 items with in the Thai Menopause-Specific Quality of Life (TMSQOL), the 402 sample data was used to analysis the factors.

The KMO value of 0.895 and the high significant level value = 0.000 in Bartlett's test of Sphericity showed that the sample was adequate for factor analysis. In examining the data from the rotated factor analysis, investigators set a criterion level of greater than 0.40 as the factor loading criterion. Fourteen items obtained factor loadings less than 0.40. Consequently, 14 items were deleted, leaving 63 items for the TMSQOL. After examining the various factor solutions, investigators found that a three-factor solution provided the most meaningful factor pattern and accounted for 69.03% of the total variance. Items within each factor were analyzed and were named based on the item description.

Thai menopause-Specific quality of life instrument were phrased in form of questions asking which it is important that items on scale should be as short as possible, although not so short that comprehensibility is lost. Item validity coefficients tend to fall as the number of the letters in the item increases. Holden et al. (1985) found that on average, items with 70-80 letters had validity coefficients under 0.10, while items containing 10-20 characters that coefficients almost four times higher.

Section II: Conclusion

Thai menopause-Specific quality of life instrument had 63 items with 3 factors namely, physic-psychological well-being, sexual-socio-economic well-being and vasomotor well-being.

This first factor was related to subject's perception of well-being that derived from menopause transition which composes of physical, physical, psychological, urinary and vaginal symptoms. Factor1 was labeled physic-psychological well-being which consists of 51 items.

The second factor was described as a subject's perception of well-being that derived from menopause transition which composed of sexual, economic and self-esteem. This factor was called sexual-socioeconomic well which consists of 9 items.

The third factor was described a subject's perception of well-being that derived from menopause transition which composed of vasomotor symptoms. Factor 3 was labeled vasomotor well-being which consisted of 3 items.

Strength of the study

1) The process of development instrument comprised of 3 phases covering nine steps.

    - Phase I is covering step1-2: Step 1- Identification of population, and Step 2-Definition of the construct to be measured

    - Phase II is covering step 3-5: Step 3-Qualitative research to guide item generation; Step 4-Generation of items to represent construct

dimensions; Step 5-Design and scale format; Step 6-Content validity check by expert judges and Step 7-Item reduction (pre-test the result on the sample of potential respondents)

- Phase III is covering step 8-9: Step 8-Establish reliability and Step 9-Establish validity

2) Reliability

Of the 402 menopausal women who completed the Thai Menopause-Specific Quality of Life (TMSQOL) at baseline and 2 weeks. The ICC was 0.952. In the social sciences, acceptable reliability estimates range from .70 to .80 (Nunnally and Bernstein, 1994). This is higher stakes testing should have higher standards of instrument reliability (Nunnally and Bernstein, 1994). Additionally, reliable instruments introduce less error into the statistical measurement and resulting analysis (DeVellis, 1991).

3) Test length

In this study, Thai Menopause-Specific Quality of Life instrument have a 63-item and internal consistency reliability coefficient of 0.952. It should be noted that test length also factors into the reliability estimate. Simply, longer test yield higher estimates of reliability. This phenomenon can be best explained through an examination of the Spearman Brown prophecy equation, which indicates that as number of items increase, there is a direct increase in the reliability estimate. However, on must consider the reliability gains earned in such situations, as infinitely long test are not necessarily desirable. For instance, if you have an 80-item testing instrument with an internal

consistency reliability coefficient of .78 and the Spearman-brown prophecy indicates that your reliability estimate will increase to .85 if you add an additional 25 items, you may consider that the slightly lower reliability estimate is more desirable than an excessively long instrument (Crocket and Algina, 1986; Mehrens and Lehman, 1991; Gregory, 1992).

4) Positive and negatively wording

Negatively worded items have lower validity coefficients than positively worded ones (Holden et al., 1985; Schriesheim and Hill, 1981), and scales that have stems with both positive and negative wording are less reliable than those where all the stems are worded in the same direction (Barnette, 2000). While, this study have scale that have stems with both positive and negative wording. However, majority of items (993.70%) are negative wording and less of items (6.3%) are positive wording. Thus, it concluded that the majority of stem are worded in the same direction.

5) Length of items

Thai menopause-Specific quality of life instrument were phrased in form of questions asking which it is important that items on scale should be as short as possible, although not so short that comprehensibility is lost. Item validity coefficients tend to fall as the number of the letters in the item increases. Holden and other (1985) found that on average, items with 70-80 letters had validity coefficients under 0.10, while items containing 10-20 characters that coefficients almost four times higher.

Thus, the results of the present study provide preliminary support for the reliability and validity of the Thai Menopause-specific Quality Of Life Scale, a measure of menopause women' quality of life.

Comparisons of currently employed menopause-specific quality of life scales

Instrument	Author	Number of domain	Domains covered	Number of items	Rating point	Rating measures	Number of subscales	Retrospective assessment	Original purpose	recommendation	Reliability
1.Greene Climacteric Scale	Greene, 1998, 1976	3	• Psychological • Somatic • Vasomotor	21	4	Severity present/absent	4	At the moment	-To investigate relationships between symptoms -To produce 'rational method of assessing climacteric symptoms Subsequent use in; HRT trials, comparative studies of different groups of women, epidemiological studies, basic research into symptom aetiology	-Test-retest reliability is good, and construct validity is secured through the restricted inclusion of symptoms. -Responsiveness is not assessed, and the percentage of variance explained either by individual factors or by all factors taken together is not stated in the 1998 publication. -While the Green Climacteric scale is valid instrument for use in clinical trials, the impact of adverse affects of HRT is not adequately addressed resulting in the need for a more comprehensive instrument to assess HRQoL in post-menopausal HRT. (Zollner et al., 2005)	0.83-0.87

Instrument	Author	Number of domain	Domains covered	Number of items	Rating point	Rating measures	Number of subscales	Retrospective assessment	Original purpose	recommendation	Reliability
2.Women's Health Questionnaire (WHQ)	Hunter, 1992	4	• mood states • physical sensation • experience, sexual behavior • Vasomotor	36	2	Present/absent	9	Past few days	-To assess a wide range of physical and emotional symptoms and to study possible health changes in mid-aged women (45-65 years) (Hunter, 1992) Previous use -London -Sweden -South-east England	-The WHQ is a valid and well-documented instrument for use in clinical trials. However, potentially HRT-driven adverse effects are difficult to delineate (Zollner et al., 2005).	0.78-0.96

Instrument	Author	Number of domain	Domains covered	Number of items	Rating point	Rating measures	Number of subscales	Retrospective assessment	Original purpose	recommendation	Reliability
3.Qualifemme	Le Floch et al., 1994	5	• Psycho-social • Somatic • Vasomotor • Climacteric • Uro-genital	32	Visual analogue scale 100 mm			At the moment	-To measure impact of menopausal hormone deficiency on a woman's quality of life. Previous use -French	-The items were translated and linguistically validated for use in French (Le Floch et al., 1994) -The instrument proved to be sensitive to changes in HRQoL demonstrating a 44% increase in the global quality of life score for those in the sequential treatment group and 38.3% improvement for those in the continuous combined treatment group (Le Floch et al., 1999) -The Qualifemme can be considered a valid instrument. Still, it does not address the full range of effects as driven by the type or regimen of HRT (Zollner et al., 2005).	0.84-0.98

Instrument	Author	Number of domain	Domains covered	Number of items	Rating point	Rating measures	Number of subscales	Retrospective assessment	Original purpose	recommendation	Reliability
4.The Menopause-Specific QoL Questionnaire (MENQOL)	Hilditch et al., 1996	5	• Psychological • Physical • Sexual • Somatic • Vasomotor	29	7	Indicate how strongly she is bothered by symptoms listed		Past month	-Randomized, controlled, double-blind trial	-The study sample consisted of 88 women aged 47-62 who had an intact uterus and who had not used HRT for at least 6 months. Women who currently had an unstable medical or social condition were excluded, as were those with contraindication to estrogen. -the instrument that encompasses four subscales, plus one overall HRQoL item. Poor discriminative power was observed in the vasomotor domain, but god in other domains. -The HRQoL does not address the full picture of potential side effects of HRT. (Zollner et al., 2005)	0.55-0.85

Instrument	Author	Number of domain	Domains covered	Number of items	Rating point	Rating measures	Number of subscales	Retrospective assessment	Original purpose	recommendation	Reliability
5.Menopause Rating Scale (MRS)	Schneider et al., 1996,2000	3	• Psychological • Somatovegettative symptoms • Urogenital symptoms	11	5	Severity	3	At this time	-Randomized, controlled, trial Previous use -Germen	-It is a reliable well-defined instrument for measuring the impact of climacteric symptoms on quality of life (Schneider et al., 2000; Wiklund, 1998) -Its weakness lies in the fact that it fails to provide enough detail to tailor-mark a specific therapy to the needs of each individual woman (Zollner et al., 2005)	0.60(average)
6.Menopause Quality of Life Scale (MQOL)	Jacobs et al.,2000	4	• Psychological • physical • sexual • Vasomotor	38	6	Rate the degree to which the following statements	7	At the moment	-Randomized, controlled, trial		0.92

Instrument	Author	Number of domain	Domains covered	Number of items	Rating point	Rating measures	Number of subscales	Retrospective assessment	Original purpose	recommendation	Reliability
7.Utian Quality of Life Scale (UQOL)	Utian et al., 1970-2002	4	• emotional quality of life • occupational quality of life • sexual quality of life) • Vasomotor	23	5	Rate the degree to which the following statements	4	Past month	-To assess general quality of life Previous use -East and mid-west USA	-It can not be used to depict the HRQoL impact of mid-aged women's symptoms, either menopause or HRT-induced (Zollner et al., 2005)	0.83
8.Menopausal Symptom List (MSL)	Perz et al., 1997	3	• Psychological • General somatic • Vasomotic	25	6	Frequency Severity	3		-To measure severity of symptoms commonly associated with menopause Previous use -Australia	-The MSL is essentially a symptom inventory, both in terms of the selection and wording of items, as well as its scoring scale. It does not, as such, feature a valid psychometric profile (Zollner et al., 2005).	0.74-0.82

Instrument	Author	Number of domain	Domains covered	Number of items	Rating point	Rating measures	Number of subscales	Retrospective assessment	Original purpose	recommendation	Reliability
9. Thai menopause-specific quality of life (TMSQOL)	Duangduen I., 2009	3	• physic-psychological well-being, • sexual-socio-economic well-being • vasomotor well-being	63	5	Rate the degree to which the statements (Not at all to very much)	3	At the moment	To assess quality of life in Thai menopause w omen	Limitation The study was confined to a single area (Surat thani Province) ,Thailand	0.952

Section III: Recommendation

The last section describes recommendations from this study, limitations and implications and recommendation in conducting further research.

Limitation

The study was confined to a single area (Surata thani Province) cover regions in Thailand and cross menopausal status will help developing comprehensive, sensitive tool.

Implication

- To assist health professionals in individual patient care by providing a feasible and relevant set of information about patients, progress. To date, studies in which health professionals have been given additional information about their patients, progress by mean of outcome measures have provided mixed results in terms of whether the quality of care was improved, although it is clear that the patients believe such questionnaires provide information that is important for their doctor to know. Lastly, the timely initiation of screening and preventive strategies for menopause associated pathology will help optimize quality of life and healthy aging.
- Promoting positive attitudes to aging and to menopausal period could be important in modifying symptoms and improving the health of women.

- Women need education and balanced information to make personal decisions regarding whether to use HRT. An important goal for health care providers should be educated women.

Further research

As flint (1994) suggested a psycho-bio-cultural model of menopauses for interdisciplinary research and for a better understanding of the different aspects of women's health. It is being recognized that menopause research needs multidisciplinary teams to address it different aspects. Research from disciplines such as gynecology, endocrinology, neurology, psychiatry, psychology and anthropology may be integrated to characterize what change menopause entails and the individual and cultural differences that occur as a result.

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APPENDICES

Appendix A

Appendix A Thai menopause Specific quality of Life Scale and instructions for use and scoring

Instructions for use and scoring of the menopause-specific quality of life questionnaire

Use:

1. This questionnaire is designed to be self-administered, either in person or by mail.
2. Specific instructions for the subject are part of the instrument.
3. The questionnaire requires, on average, 7-10 min to complete.
4. The questionnaire is appropriate for Thai speaking subjects.
5. The questionnaire was developed using data from women who: a) are between the age of 45-59 years, b) are 1-5 years post menopause, c) have an intact uterus, d0 have not been on hormone replacement therapy in the past 6 months.

Scoring technique

Likert type five rating scale was added to elicit the responses from the respondents ranged from 1-5 (1= very much, 2= much 3= moderate, 4= a little and 5= not at all). A few items were scored in reverse. If the answer is very much, it will be scored inverse i.e. 5 as 1 and 1 as 5 to get positive QOL index. The direct and reverse scoring items are given below.

Direct Scoring: 1-59

Reverse Scoring: 60-63

แบบประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดู

(Thai Menopause - Specific quality of Life Scale)

วัตถุประสงค์

ใช้ประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดู เพื่อเป็น ข้อมูลเบื้องต้นสำหรับตนเองและบุคลากรทางสุขภาพในการทำความเข้าใจสภาวะที่เกิดขึ้นรวมถึงการจัดการกับสภาวะนั้นและ ดำรงชีวิตได้อย่างมีคุณภาพชีวิตต่อไป

ส่วนที่ 1 ข้อมูลส่วนบุคคล

ปัจจุบันอายุ.....ปี จำนวนบุตรที่คลอด.....คน บุตรคนสุดท้ายอายุ.....ปี

การศึกษาสูงสุด

☐ 1. ประถมศึกษา ☐ 2. อุดมศึกษา

☐ 3. มัธยมศึกษา ☐ 4. อาชีวศึกษา

☐ 5. อื่นๆระบุ.....

สถานภาพสมรส

☐ 1. โสด ☐ 2. สมรส

☐ 3. หม้าย ☐ 4. หย่าร้าง

ศาสนา

☐ 1. พุทธ ☐ 2. อิสลาม

☐ 3. คริสต์ ☐ 4. อื่นๆระบุ.....

อาชีพ

☐ 1. ไม่มี ☐ 2. รับจ้าง

☐ 3. รับราชการ ☐ 4. ค้าขาย

☐ 5. ทำธุรกิจ ☐ 6. อื่นๆระบุ.....

การสูบบุหรี่

☐ 1. ไม่สูบ ☐ 2. สูบ (ระบุ.....มวน/วัน)

การดื่มแอลกอฮอล์

☐ 1. ไม่ดื่ม ☐ 2. ดื่ม (ระบุ.....)

อาหารการกิน

☐ 1. มังสวิรัติ ☐ 2. ทานแต่เนื้อสัตว์ (ไม่ทานผัก)

☐ 3. ทานทั้งเนื้อและผัก

ส่วนที่ 2 การประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดู

คำชี้แจง

ข้อความต่อไปนี้แสดงถึงผลกระทบต่อคุณภาพชีวิตจากการหมดระดูให้ระบุระดับการรับรู้ผลกระทบต่อคุณภาพชีวิตโดยทำเครื่องหมาย ◯ ตรงกับผลการประเมินแต่ละข้อ

เกณฑ์การประเมิน

ไม่มี หมายถึง ภาวะดังกล่าวไม่เกิดขึ้นกับตัวท่านเลย

น้อย หมายถึง ภาวะดังกล่าวเกิดขึ้นในระดับน้อย

ปานกลาง หมายถึง ภาวะดังกล่าวเกิดขึ้นในระดับปานกลาง

มาก หมายถึง ภาวะดังกล่าวเกิดขึ้นในระดับมาก

มากที่สุด หมายถึง ภาวะดังกล่าวเกิดขึ้นในระดับมากที่สุด

ตัวอย่างการประเมิน

รายการประเมิน	ระดับการรับรู้ภาวะที่เกิดขึ้น				
	ไม่มี	น้อย	ปานกลาง	มาก	มากที่สุด
ไอ จามมีปัสสาวะเล็ด	5	4	3	(2)	1

จากตัวอย่างหมายความว่า ท่านรับรู้ว่า เมื่อมีอาการไอหรือจามจะมีปัสสาวะเล็ดเกิดขึ้นในระดับมาก

รายการประเมิน	ระดับการรับรู้ภาวะที่เกิดขึ้น				
	ไม่มี	น้อย	ปานกลาง	มาก	มากที่สุด
1. อาการร้อนวูบวาบ	5	4	3	2	1
2. เหงื่อออกตอนกลางคืน	5	4	3	2	1
3. เดี๋ยวร้อนเดี๋ยวหนาว	5	4	3	2	1
4. ปวดแน่นท้องเหมือนมีแก๊สในกระเพาะ	5	4	3	2	1
5. รู้สึกปั่นป่วนในท้อง	5	4	3	2	1
6. เป็นตะคริวที่ท้อง	5	4	3	2	1
7. แน่นหน้าอก	5	4	3	2	1
8. หายใจไม่ทั่วท้อง	5	4	3	2	1
9. หายใจไม่ออก	5	4	3	2	1
10. รู้สึกคล้ายมีตัวอะไรไต่ตามผิวหนัง	5	4	3	2	1
11. คลื่นไส้	5	4	3	2	1
12. เบื่ออาหาร	5	4	3	2	1
13. จังหวะการเต้นของหัวใจไม่สม่ำเสมอ	5	4	3	2	1
14. หัวใจเต้นแรง	5	4	3	2	1
15. ใจสั่น	5	4	3	2	1
16. ปวดศีรษะ	5	4	3	2	1
17. วิงเวียนศีรษะคล้ายจะเป็นลม	5	4	3	2	1
18. นอนไม่ค่อยหลับ	5	4	3	2	1
19. นอนหลับยาก	5	4	3	2	1
20. รู้สึกชาปลายมือปลายเท้า	5	4	3	2	1
21. ปวดหรือชาบริเวณขา	5	4	3	2	1
22. รู้สึกเหมือนเข็มตำ	5	4	3	2	1
23. เพลีย ไม่มีแรง พละกำลังลดลง	5	4	3	2	1
24. ตาแห้ง	5	4	3	2	1
25. ผิวแห้ง	5	4	3	2	1
26. ผิวพรรณเหี่ยวย่นไม่เปล่งปลั่งสดใส	5	4	3	2	1
27. หงุดหงิดง่าย	5	4	3	2	1
28. อารมณ์ร้อน	5	4	3	2	1
29. โกรธง่าย	5	4	3	2	1
30. ซึมเศร้า	5	4	3	2	1
31. รู้สึกไม่มีความสุข	5	4	3	2	1
32. รู้สึกเศร้า หดหู่ เหงาหงอย	5	4	3	2	1

รายการประเมิน	ระดับการรับรู้ภาวะที่เกิดขึ้น				
	ไม่มี	น้อย	ปานกลาง	มาก	มากที่สุด
33. รู้สึกไม่สุขสบาย รำคาญใจ	5	4	3	2	1
34. ขาดความมั่นใจในตนเอง	5	4	3	2	1
35. รู้สึกตึงเครียด	5	4	3	2	1
36. รู้สึกเบื่อ ไม่อยากทำงาน อยากอยู่เฉยๆ	5	4	3	2	1
37. ตื่นนอนไม่สดชื่น	5	4	3	2	1
38. หลงๆลืมๆโดยเฉพาะเหตุการณ์ที่เพิ่งเกิดขึ้น	5	4	3	2	1
39. อารมณ์เปลี่ยนง่าย	5	4	3	2	1
40. ขาดสมาธิ	5	4	3	2	1
41. รู้สึกโดดเดี่ยว หวาดหวั่น	5	4	3	2	1
42. ไม่ค่อยมีเหตุผล	5	4	3	2	1
43. ไม่ค่อยสนใจสิ่งแวดล้อม	5	4	3	2	1
44. ร้องไห้โดยไม่มีเหตุผล	5	4	3	2	1
45. เหนื่อยง่าย ไม่มีแรง ไม่กระปรี่กระเปร่า	5	4	3	2	1
46. รู้สึกว่าความแข็งแรงและพละกำลังลดลง	5	4	3	2	1
47. ขี้ใจน้อย	5	4	3	2	1
48. โมโหง่าย อารมณ์ไม่แจ่มใส	5	4	3	2	1
49. กลั้นปัสสาวะไม่อยู่	5	4	3	2	1
50. ต้องรีบปัสสาวะเมื่อรู้สึกปวด	5	4	3	2	1
51. ไอ จามมีปัสสาวะเล็ด	5	4	3	2	1
52. ปัสสาวะบ่อย	5	4	3	2	1
53. ช่องคลอดแห้ง	5	4	3	2	1
54. เต้านมเหี่ยวยานและมีขนาดเล็กลง	5	4	3	2	1
55. รู้สึกเจ็บขณะมีเพศสัมพันธ์	5	4	3	2	1
56. ช่วงเวลาในการปฏิบัติกิจกรรมทางเพศลดลง	5	4	3	2	1
57. ความรู้สึกทางเพศลดลง	5	4	3	2	1
58. หมดความรู้สึกทางเพศ	5	4	3	2	1
59. หมดความกระตือรือร้นในเรื่องหลับนอนกับสามี	5	4	3	2	1
60. มีความคล่องตัวในการจับจ่ายใช้สอยในชีวิตประจำวัน	1	2	3	4	5
61. รู้สึกภาคภูมิใจในตนเอง	1	2	3	4	5
62. รู้สึกพึงพอใจในสิ่งที่ตนเองเป็นอยู่	1	2	3	4	5
63. รู้สึกว่าตนเองมีคุณค่า	1	2	3	4	5

Appendix B

AF 01-11

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย
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COA No. 104/2552

ใบรับรองโครงการวิจัย

โครงการวิจัยที่ 068.1/ 52 : เครื่องมือประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดู จังหวัดสุราษฎร์ธานี ประเทศไทย

ผู้วิจัยหลัก : นางดวงเดือน อินทร์บำรุง นิสิตระดับดุษฎีบัณฑิต

หน่วยงาน : สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย

คณะกรรมการพิจารณาจริยธรรมการวิจัยในคน กลุ่มสหสถาบัน ชุดที่ 1 จุฬาลงกรณ์มหาวิทยาลัย ได้พิจารณา โดยใช้หลัก ของ The International Conference on Harmonization – Good Clinical Practice (ICH-GCP) อนุมัติให้ดำเนินการศึกษาวิจัยเรื่องดังกล่าวได้

ลงนาม.....
(รองศาสตราจารย์ นายแพทย์ปรีดา ทัศนประดิษฐ)
ประธาน

ลงนาม.....
(ผู้ช่วยศาสตราจารย์ ดร.นันทรี ชัยชนะวงศาโรจน์)
กรรมการและเลขานุการ

วันที่รับรอง : 10 กันยายน 2552 **วันหมดอายุ** : 9 กันยายน 2553

เอกสารที่คณะกรรมการรับรอง

1) โครงการวิจัย
2) ข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัยและใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย
3) ผู้วิจัย
4) แบบสอบถาม

เลขที่โครงการวิจัย 068.1/52
วันที่รับรอง 10 ก.ย. 2552
วันหมดอายุ 9 ก.ย. 2553

เงื่อนไข

1. ข้าพเจ้ารับทราบว่าเป็นการผิดจริยธรรม หากดำเนินการเก็บข้อมูลการวิจัยก่อนได้รับการอนุมัติจากคณะกรรมการพิจารณาจริยธรรมการวิจัยฯ

2. หากใบรับรองโครงการวิจัยหมดอายุ การดำเนินการวิจัยต้องยุติ เมื่อต้องการต่ออายุต้องขออนุมัติใหม่ล่วงหน้าไม่ต่ำกว่า 1 เดือน พร้อมส่งรายงานความก้าวหน้าการวิจัย

3. ต้องดำเนินการวิจัยตามที่ระบุไว้ในโครงการวิจัยอย่างเคร่งครัด

*4. ใช้เอกสารข้อมูลสำหรับกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย ใบยินยอมของกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย และเอกสารเชิญเข้าร่วมวิจัย (ถ้ามี) **เฉพาะที่ประทับตราคณะกรรมการเท่านั้น แล้วส่งสำเนาใบแรกที่ใช้เอกสารดังกล่าวมาที่คณะกรรมการ***

5. หากเกิดเหตุการณ์ไม่พึงประสงค์ร้ายแรงในสถานที่เก็บข้อมูลที่ขออนุมัติจากคณะกรรมการ ต้องรายงานคณะกรรมการภายใน 5 วันทำการ

6. หากมีการเปลี่ยนแปลงการดำเนินการวิจัย ให้ส่งคณะกรรมการพิจารณารับรองก่อนดำเนินการ

7. โครงการวิจัยไม่เกิน 1 ปี ส่งแบบรายงานสิ้นสุดโครงการวิจัย (AF 03-11) และบทคัดย่อผลการวิจัยภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น สำหรับโครงการวิจัยที่เป็นวิทยานิพนธ์ให้ส่งบทคัดย่อผลการวิจัย ภายใน 30 วัน เมื่อโครงการวิจัยเสร็จสิ้น

ที่ ศธ0512.5 วพส. ๒๒๑/2552

สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย

๒๑ ธันวาคม 2552

เรื่อง ขอเชิญเป็นผู้ทรงคุณวุฒิ

เรียน ผู้ช่วยศาสตราจารย์ นายแพทย์ สัญญา ภัทราชัย

เนื่องด้วย นางดวงเดือน อินทร์บำรุง นิสิตหลักสูตรวิทยาศาสตรดุษฎีบัณฑิต สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ (นานาชาติ) บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย รหัสประจำตัวนิสิต 4889698720 ได้รับอนุมัติหัวข้อวิทยานิพนธ์เรื่อง "เครื่องมือประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดู จังหวัดสุราษฎร์ธานี ประเทศไทย (ASSESSMENT TOOL OF THAI MENOPAUSE – SPECIFIC QUALITY OF LIFE IN SURAT THANI PROVINCE, THAILAND) " โดยมีศาสตราจารย์นายแพทย์สุรศักดิ์ ฐานีพานิชสกุล เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ พิจารณาแล้วเห็นว่าท่านเป็นผู้ที่มีความรู้ความสามารถและประสบการณ์ ซึ่งจะเป็นประโยชน์ต่อนิสิตในการวิจัยดังกล่าว จึงใคร่ขอเรียนเชิญท่านเป็นผู้ทรงคุณวุฒิ ตรวจสอบเนื้อหาแบบประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดูที่นิสิตสร้างขึ้น ทั้งนี้เพื่อความถูกต้องสมบูรณ์ ซึ่งจะเป็นประโยชน์ทางวิชาการ

สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ (นานาชาติ) บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย หวังเป็นอย่างยิ่งว่าคงได้รับความอนุเคราะห์จากท่าน และขอขอบคุณเป็นอย่างสูงมา ณ โอกาสนี้

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร. พงชัย หาญยุทธนากร)
ผู้อำนวยการหลักสูตรสหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ
(หลักสูตรนานาชาติ)

โทรศัพท์ 0-2218-8229
โทรสาร 0-2218-8229, 0-2251-7041

ที่ ศธ0512.5 วพส. 230 /2552

สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ
บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย

29 ธันวาคม 2552

เรื่อง ขอเชิญเป็นผู้ทรงคุณวุฒิ

เรียน ผู้ช่วยศาสตราจารย์ นายแพทย์ มานพชัย ธรรมคันโธ

เนื่องด้วย นางดวงเดือน อินทร์บำรุง นิสิตหลักสูตรวิทยาศาสตรดุษฎีบัณฑิต สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ (นานาชาติ) บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย รหัสประจำตัวนิสิต 4889698720 ได้รับอนุมัติหัวข้อวิทยานิพนธ์เรื่อง "เครื่องมือประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดู จังหวัดสุราษฎร์ธานี ประเทศไทย (ASSESSMENT TOOL OF THAI MENOPAUSE – SPECIFIC QUALITY OF LIFE IN SURAT THANI PROVINCE, THAILAND)" โดยมีศาสตราจารย์นายแพทย์สุรศักดิ์ ฐานีพานิชสกุล เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ พิจารณาแล้วเห็นว่าท่านเป็นผู้ที่มีความรู้ความสามารถและประสบการณ์ซึ่งจะเป็นประโยชน์ต่อนิสิตในการวิจัยดังกล่าว จึงใคร่ขอเรียนเชิญท่านเป็นผู้ทรงคุณวุฒิ ตรวจสอบเนื้อหาแบบประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดูที่นิสิตสร้างขึ้น ทั้งนี้เพื่อความถูกต้องสมบูรณ์ ซึ่งจะเป็นประโยชน์ทางวิชาการ

สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ (นานาชาติ) บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย หวังเป็นอย่างยิ่งว่าคงได้รับความอนุเคราะห์จากท่าน และขอขอบคุณเป็นอย่างสูงมา ณ โอกาสนี้

ขอแสดงความนับถือ

(ผู้ช่วยศาสตราจารย์ ดร. พงชัย หาญยุทธนากร)
ผู้อำนวยการหลักสูตรสหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ
(หลักสูตรนานาชาติ)

โทรศัพท์ 0-2218-8229
โทรสาร 0-2218-8229, 0-2251-7041

บันทึกข้อความ

ส่วนงาน สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ (หลักสูตรนานาชาติ) บัณฑิตวิทยาลัย โทร. 88229

ที่ ศธ 0512.5 วพส. 231 /2552 วันที่ 29 ธันวาคม 2552

เรื่อง ขอเชิญเป็นผู้ทรงคุณวุฒิ

เรียน รองศาสตราจารย์ ดร. กัญญดา ประจุศิลป

เนื่องด้วย นางดวงเดือน อินทร์บำรุง นิสิตหลักสูตรวิทยาศาสตรดุษฎีบัณฑิต สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ (นานาชาติ) บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย รหัสประจำตัวนิสิต 4889698720 ได้รับอนุมัติหัวข้อวิทยานิพนธ์เรื่อง “เครื่องมือประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดู จังหวัดสุราษฎร์ธานี ประเทศไทย (ASSESSMENT TOOL OF THAI MENOPAUSE – SPECIFIC QUALITY OF LIFE IN SURAT THANI PROVINCE, THAILAND)” โดยมีศาสตราจารย์นายแพทย์สุรศักดิ์ ฐานีพานิชสกุล เป็นอาจารย์ที่ปรึกษาวิทยานิพนธ์ พิจารณาแล้วเห็นว่าท่านเป็นผู้ที่มีความรู้ความสามารถและประสบการณ์ซึ่งจะเป็นประโยชน์ต่อนิสิตในการวิจัยดังกล่าว จึงใคร่ขอเรียนเชิญท่านเป็นผู้ทรงคุณวุฒิ ตรวจสอบเนื้อหาแบบประเมินคุณภาพชีวิตสตรีไทยในภาวะหมดระดูที่นิสิตสร้างขึ้น ทั้งนี้เพื่อความถูกต้องสมบูรณ์ ซึ่งจะเป็นประโยชน์ทางวิชาการ

สหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ (นานาชาติ) บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย หวังเป็นอย่างยิ่งว่าคงได้รับความอนุเคราะห์จากท่าน และขอขอบคุณเป็นอย่างสูงมา ณ โอกาสนี้

(ผู้ช่วยศาสตราจารย์ ดร. พงชัย หาญยุทธนากร)
ผู้อำนวยการหลักสูตรสหสาขาวิชาวิจัยเพื่อการพัฒนาสุขภาพ
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BIOGRAPHY

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2005-Current

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1998-2001

Master of Nursing Science (Adult Nursing), Mahidol University, Bangkok, Thailand

1989-1993

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