

CHAPTER 4

RESULTS AND DISCUSSION

Results

This descriptive research was to explore menopausal symptoms and health practices among middle aged Thai Muslim women. The subjects were 366 middle aged Muslim women 40–59 years old living in Amphur Chana, Songkla province.

The findings are presented with tables and descriptions regarding;

- 4.1 Demographic data
- 4.2 Health history
- 4.3 Menstrual and sexual history
- 4.4 Menopausal symptoms
- 4.5 Health practices
- 4.6 A comparison of the menopausal symptoms and health practices of pre-perimenopausal and postmenopausal subjects
- 4.7 The relationship between menopausal symptoms and health practices

4.1 Demographic data

Of 366 subjects, 59.9 percent were in the age range of 40–49 years, 81.1 percent were married and 70% had married by the age of 19 years. The average number of children was 4. In terms of education, 85.2 percent of the subjects graduated from primary school while 10.4% were illiterate. The majority of the subjects (66.7%) were agriculturists, 74.3 percent had an income less than 5,000 Baht per month, but only 42.1% felt they did not have sufficient income. (Table 1)

Table 1 Number and percentage of subjects regarding demographic characteristics

Variables	Subjects (n = 366)	
	Number (Percentage)	
Age (\bar{X} = 47.99 S.D. = 5.44)		
40-49	219	(59.9)
50-59	147	(40.1)
Marital status		
Single	7	(1.9)
Married	297	(81.1)
Widowed	46	(12.6)
Divorced/ Separated	16	(4.4)
Education		
Illiterate/ No formal education	38	(10.4)
Primary school	312	(85.2)
Secondary school	12	(3.3)
Vocational/ Bachelor's degree or higher	2	(0.5)
Occupation		
Housewife	45	(12.3)
Agriculturist	244	(66.7)
Government official	4	(1.1)
Employee	15	(4.1)
Small business	58	(15.8)
Income		
Less than 5,000 Baht	272	(74.3)
5,000-10,000 Baht	92	(25.1)
More than 10,000 Baht	2	(0.6)

Table 1 (continued)

Variables	Subjects (n = 366)	
	Number	(Percentage)
Sufficiency of income		
Sufficient	212	(57.9)
Insufficient	154	(42.1)
Age at marriage (\bar{X} = 18.5 S.D. = 3.20)		
10-14	24	(6.6)
15-19	232	(63.4)
20-24	85	(23.2)
25-29	16	(4.4)
30-34	2	(0.5)
Number of children (\bar{X} = 3.85, S.D. = 2.12)		
0	11	(3.0)
1-2	88	(24.0)
3-4	155	(42.4)
≥ 5	112	(30.6)

4.2 Health history data

Table 2 presents the health history of the subjects. Only 31.1% of the subjects reported chronic illness with the most common ailment being hypertension (15.8%), and 23.2 % reported taking regular medication. 3.3 percent of the subjects had undergone hysterectomy or salpingo oophorectomy.

Table 2 Number and percentage of Thai middle aged Muslim women categorized by health history

Variables	Subjects (n = 366)	
	Number	(Percentage)
Chronic illness		
No	252	(68.9)
Yes	114	(31.1)
Heart disease	9	(2.5)
Hypertension	58	(15.8)
Diabetes mellitus	13	(3.6)
Asthma	4	(1.1)
Bone and joint pain	14	(3.8)
Gastritis	7	(1.9)
Hypertension and diabetes mellitus	6	(1.6)
Heart disease and hypertension	3	(0.8)
Regularly medication use		
No	281	(76.8)
Yes	85	(23.2)
Operational history of uterus and ovary		
No	354	(96.7)
Yes	12	(3.3)
Therapies used for relieving menopausal symptoms		
Hormone Replacement Therapy	7	(1.9)
Herbal Therapy	12	(5.2)
Traditional Thai Massage	11	(8.2)
Do not use any specific therapy	336	(84.7)

4.3 Menstrual and sexual history

Table 3 shows that most of the middle aged Muslim women (71.1%) had their first menstruation when they were 13 - 16 years old, 56.6% menstruated between 5- 6 days in each cycle and 42.3% had dysmenorrhea during menstruation. Thirty nine point nine percent of the subjects had ceased menstruation naturally, while 2.7% ceased to have menses because of surgical intervention. Of the 57.4 percent of the subjects still having menses, 83.3 % had a regular cycle.

Table 3 Number and percentage of middle aged Thai Muslim women categorized by menstrual history.

Variables	Subjects (n = 366)	
	Number	(Percentage)
Age of menarche (Years) (\bar{X} = 14.63, S.D. = 1.62)		
11 - 12	30	(9.8)
13 - 14	139	(36.4)
15 - 16	138	(37.7)
17 - 18	59	(16.1)
Duration of menstruation in each cycle (days)		
1 - 2	18	(4.9)
3 - 4	101	(27.6)
5 - 6	207	(56.6)
> 7	40	(10.9)
Dysmenorrhea		
No	211	(57.7)
Yes	155	(42.3)

Table 3 (continued)

Variables	Subjects (n = 366)	
	Number	(Percentage)
Menstruation characteristic		
Cessation of Menstruation	156	(42.6)
-Natural menopause	146	(39.9)
-Surgical menopause	10	(2.7)
Still having menses	210	(57.4)
- Regular cycle	175	(47.8)
- Irregular cycle	35	(9.6)
Age of natural menopause (Years) (\bar{X} = 48.12, S.D. = 4.19) N= 146		
30 – 39	3	(2.1)
40 – 49	84	(57.5)
50 – 59	59	(40.4)

Table 4 shows the sexual history of the married subjects (297) in the previous month. Vaginal dryness and loss of sexual interest were commonly reported in this group, however, the prevalence of painful intercourse was low.

Table 4 Number and percentage of married middle aged Thai Muslim women who reported sex related problems.

Variables	Subjects (n = 297)	
	Number	(Percentage)
Sex related problems (married status, subjects = 297)		
The frequency of sex related symptoms		
-Vaginal dryness		
Often-Almost always	40	(13.4)
Never-Occasionally	257	(86.6)
-Painful intercourse		
Often-Almost always	11	(3.7)
Never-Occasionally	286	(96.3)
-Loss of sexual interest		
Often-Almost always	24	(8.1)
Never-Occasionally	273	(81.9)
The severity of sexual related symptoms		
-Vaginal dryness		
Moderate-Severe	5	(1.7)
Not applicable-Mild	292	(98.3)
-Painful intercourse		
Moderate-Severe	5	(1.7)
Not applicable-Mild	292	(98.3)
-Loss of sexual interest		
Moderate-Severe	27	(9.1)
Not applicable-Mild	212	(90.9)

4.4 Menopausal Symptoms of Thai Muslim Middle Aged Women

The number of middle aged women in this study was 366, consisting of 175 (47.8%) in premenopause, 35 (9.6%) in perimenopause, and 156 (42.6%) postmenopause. Pre and perimenopause are the periods when the level of estrogen hormone gradually declines, while postmenopausal is the period, when the estrogen hormone is low but rather stable. During this transition from pre to postmenopause, women undergo endocrinological, physical, psychological and sociological changes of varying intensity and duration. Postmenopausal is the period, when the estrogen hormone is low but rather stable so the experiences of symptoms may differ. The decision was made to take the opportunity to also assess the variation of menopausal symptoms between pre-perimenopausal women (n = 210) and postmenopausal women (n = 156).

4.4.1 The distribution of menopausal symptoms

Table 5 presents the distribution of the overall scores for both menopausal symptoms frequency and severity. As well the scores for each category, general somatic, vaso-somatic, and psychological are presented. They are all skewed to the right, indicating that most of the subjects scored low.

Table 5 The distribution of menopausal symptoms scores categorized by general-somatic, vaso-somatic and psychological symptoms scores (n = 366)

Menopausal Symptoms	Range of score		Mean	S.D.	Skewness	C.V.
	Possible score	Subjects score				
Total frequency score ^a	40-160	40-109	60.78	11.94	1.73	0.20
-General-somatic	17-68	17-56	25.86	5.90	0.91	0.23
-Vaso-somatic	9-39	9-28	14.21	3.48	0.70	0.24
-psychological	14-56	14-39	20.60	4.68	0.62	0.23
Total severity score ^a	40-160	40-116	48.60	11.24	1.23	0.23
-General-somatic	17-68	17-52	21.33	5.36	1.79	0.25
-Vaso-somatic	9-36	9-27	11.53	3.19	1.69	0.28
-psychological	14-56	14-38	16.74	4.33	2.01	0.26

Note ^a general-somatic, vaso-somatic, and psychological scores

4.4.2 The most common menopausal symptoms

Table 6 shows the 10 top menopausal symptoms reported by subjects as "often to almost always" and includes 5 general somatic symptoms (back pain, early morning awakening, difficulty falling asleep, weight gain, ache in the back of neck and skull), 4 vaso-somatic symptoms (loss of feeling in hands and feet, hot flushes, numbness and tingling, headache), and 1 psychological symptom (irritability).

Table 7 shows the 10 top menopausal symptoms reported by the whole group as "moderate or severe". There are 5 general-somatic symptoms (back pain, early morning awakening, difficulty falling asleep, sleeplessness, and ache in the back or neck and skull) and 5 vaso-somatic symptoms (numbness and tingling, loss of feeling in hands and feet, headache, and palpitation and hot flushes). Only a small

percentage of the subjects reported moderate or severe symptoms, and there were no psychological symptoms present.

Table 6 The top ten menopausal symptoms experienced among the whole group of subjects (pre, peri-postmenopausal) who reported the occurrence of symptoms as; often & almost always.

Menopausal symptoms	Thai Muslim middle aged women ^a
	Number (Percentage)
1. Back pain	83 (22.7)
2. Loss of feeling in hands and feet	66 (18.0)
3. Early morning awakening	48 (13.2)
4. Difficulty falling asleep	45 (12.3)
5. Weight gain	45 (12.3)
6. Irritability	45 (12.3)
7. Hot flushes	43 (11.8)
8. Numbness and tingling	43 (11.8)
9. Headache	43 (11.8)
10. Ache in the back of neck and skull	43 (11.8)

Table 7 The top ten menopausal symptoms experienced by the whole group of subjects reported the severity of symptoms as; moderate & severe.

Menopausal symptoms	Thai Muslim middle aged women ^a
	Number (Percentage)
1. Back pain	44 (12.0)
2. Early morning awakening	30 (8.2)
3. Difficulty falling asleep	29 (7.9)
4. Sleeplessness	26 (7.1)
5. Numbness and tingling	24 (6.5)
6. Loss of feeling in hands and feet	23 (6.3)
7. Headache	23 (6.3)
8. Ache in the back or neck and skull	23 (6.3)
9. Palpitation	22 (6.0)
10. Hot flushes	19 (5.2)

Note ^a N=366

4.5 Health practices

4.5.1 The distribution of mean total health practices score

Table 8 shows that the distribution of the mean total health practices score is skewed to the right indicating that the mode and median is lower than the mean and that most of subjects have a low score. The distribution of nutrition, sleep and rest, stress management, and elimination practices score skews to the left indicating that the mode and median is higher than the mean and that the subjects scores shift to the high level. However, the distribution of exercise and responsibility for health score is skewed to the right indicating that the mean is higher than the mode and median, and

the subjects scored low. The coefficient of variation shows the dispersion of mean health practices scores regarding nutrition, sleep and rest, stress management, and elimination practices have a narrow range of dispersion, while exercise and general responsibility for health have a wide range. The level of health practices determined by percentage grouping of the potential score shows elimination practices as good, nutrition, sleep and rest, and stress management as moderate, and exercise and general responsibility for health as poor.

Table 8 The distributions of overall, and each dimension, health practices scores of the whole group of subjects (N = 366)

Score	Range of score		Mean	S.D.	Skewness	C.V.
	Possible score	Subject score				
Total health practices ^a	0-105	43-92	60.77	8.43	0.54	0.13
-Nutrition	0- 39	16-37	26.41	3.22	0.12	0.12
-Exercise	0-15	0-14	1.94	3.01	1.82	1.55
-Sleep	0-18	3-18	13.10	3.37	-0.19	0.25
- Stress management	0-12	2-12	7.85	2.54	0.38	0.34
-Elimination practices	0- 9	3- 9	8.19	1.07	-2.33	0.13
- Responsibility for health	0-12	0-12	3.77	2.29	0.51	0.60

Note ^a nutrition, exercise, sleep, stress, elimination, and general responsibility for health score

4.5.2 The most common health practices

Tables 9 and 10 show the top ten behaviors performed and not performed by Thai Muslim middle aged women. The common health practices which were "often"

as well as "routinely practiced" by the whole group of subjects includes 6 practices regarding nutrition (do not drink alcohol, consume carbohydrate from rice, flour and other sources, consume protein from meat, chicken, fish, and other sources, do not consume more than 2 egg yolks per day, consume fruits and vegetable, do not drink more than 2 cups of tea or coffee per day), 3 practices regarding elimination (do not use laxative drugs, perineum care after elimination practices, and do not hold urine for long time), and 1 practice regarding sleep and rest (do not use tranquilizers for sleeping).

The most common behaviors regarding health that were "never done" by the whole group of subjects includes 5 practices regarding exercise (warm up before exercise and cool down after exercise, check the body to assess the physical abnormality before exercise, exercise 20-30 minute per day, exercise pelvic floor by doing Kegel exercise, exercise by jogging, bicycling, aerobics or other physical exercises), 2 practices regarding nutrition (take synthesized vitamins, drink milk or soy bean at least a cup per day), and 3 practices regarding general responsibility for health (have pap smear check up, have physical examination yearly, do breast self examination monthly).

Table 9 The top ten behaviors "often" and "routinely practiced" by middle aged Thai Muslim women.

Health Practice	Thai Muslim middle aged women ^a
	Number (Percentage)
1. Don't drink alcohol	366 (100)
2. Consume carbohydrate from rice flour and other sources.	361 (98.7)
3. Perineum care after elimination practices	361 (98.7)
4. Consume protein from meat, chicken, fish, and other sources.	356 (97.3)
5. Don't use laxative drugs	353 (96.5)
6. Don't hold urine for long time	343 (93.7)
7. Don't consume more than 2 egg yolks per day	334 (91.3)
8. Don't use tranquilizer for sleeping	333 (91.0)
9. Consume fruits and vegetable	332 (90.8)
10. Don't drink more than 2 cups of tea or coffee per day	317 (86.7)

Note ^aN = 366

Table 10 The top ten behaviors "never practiced" by middle aged Thai Muslim women.

Health practices	Thai Muslim middle aged women ^a
	Number (Percentage)
1. Warm up before exercise and cool down after exercise	296 (80.9)
2. Have pap smear check up yearly	281 (76.8)
3. Check the body to assess physical abnormality before exercise	278 (76.0)
4. Exercise pelvic floor by doing Kegel exercises	278 (76.0)
5. Exercise 20-30 minute per day	266 (72.7)
6. Exercise by jogging, bicycling, aerobics or other physical exercise	243 (66.4)
7. Take synthesized vitamins	228 (62.3)
8. Drink milk or soy bean	192 (52.5)
10. Do breast self examination	128 (35.0)

Note ^aN = 366

4.6 Comparison of menopausal symptoms and health practices between pre-perimenopausal women and post menopausal women

4.6.1 Comparison of menopausal symptoms frequency and severity scores between pre-perimenopausal women and post menopausal women

Table 11 shows that the overall, and each category of menopausal symptoms frequency score of pre-perimenopausal women is significantly higher than postmenopausal women. The pre-perimenopausal group has a significantly higher overall, general-somatic, and vaso-somatic severity score than the postmenopausal

group. However, the psychological severity score between the two groups is not different.

Table 11 Comparison of menopausal frequency and severity score between pre-perimenopausal women and & post menopausal women.

Menopausal symptoms	Pre-perimenopausal women ^a	Postmenopausal women ^b	t-value
	Mean (SD)	Mean (SD)	
Total ^d Frequency	62.56 (12.09)	59.45 (11.68)	2.48*
-General-somatic	25.27 (5.60)	21.71 (12.38)	3.68***
-Vaso-somatic	13.90 (3.49)	13.27 (3.37)	0.39*
-Psychological	20.27 (4.63)	17.23 (7.40)	4.52***
Total ^d Severity	50.23 (10.68)	48.14 (11.64)	1.415*
-General-somatic	21.00 (5.43)	18.01 (7.26)	4.32***
-Vaso-somatic	11.37 (3.20)	9.90 (4.40)	3.52***
Psychological	16.76 (4.59)	16.79 (4.13)	-0.06 ^{NS}

p* < 0.05, p** < 0.01, p*** < 0.001

Note ^a N = 210, ^b N = 156, ^d general-somatic, vaso-somatic, and psychological scores

4.6.2 The comparison of health practices score between pre-perimenopausal women and postmenopausal women

There was no significant difference in the overall health practices mean score, between pre-perimenopause and postmenopausal groups. However, the pre-perimenopausal women had significantly higher scores in stress management, elimination practices, and general responsibility for health than postmenopausal women (Table 12)

Table 12 Comparison of the health practices score between pre-perimenopausal women and post menopausal women.

Health practices score	Pre-perimenopausal women ^a	postmenopausal women ^b	t-value
	Mean (SD)	Mean (SD)	
Total health practices ^d	60.72 (8.22)	60.85 (8.74)	-0.15 ^{NS}
-nutrition	26.19 (3.13)	26.43 (3.01)	-0.67 ^{NS}
-exercise	1.86 (3.00)	1.87 (3.00)	-0.05 ^{NS}
-sleep and rest	13.22 (3.41)	13.05 (3.54)	0.43 ^{NS}
-stress management	7.42 (2.60)	6.36 (3.16)	3.29 ^{***}
-elimination	7.82 (1.95)	6.79 (2.99)	3.65 ^{***}
-general responsibility for health	3.55 (2.34)	2.96 (2.41)	2.31 ^{***}

Note ^aN = 210, ^bN = 156

^d nutrition, exercise, sleep, stress, elimination, and general responsibility for health

4.7 The relationship between menopausal symptoms and overall health practices.

The relationship between menopausal symptoms and health practices were examined by Pearson's Product moment correlation coefficient.

Table 13 shows that there is a significant negative relationship between menopausal score and severity scores and health practices. This means that those who experienced more frequent as well as severe symptoms were more likely to have poor health practices. However, due to the design of the study, it is difficult to delineate which is the cause and which is the effect.

Table 13 Correlation Coefficient of scores related to menopausal symptoms with health practices.

Menopausal symptoms score	Health practices score
	r
Total frequency ^a	-.293**
Total severity ^b	-.174**

Note ^ageneral-somatic, vaso-somatic, and psychological frequency score

^bgeneral-somatic, vaso-somatic, and psychological severity score

Discussion

This descriptive research aimed to assess the menopausal symptoms and health practices among middle aged Thai Muslim women. Represents by 366 middle aged Thai Muslim women (40-59 years) living in Chana amphur, Songkla province.

The overall socioeconomic status of these middle aged Thai Muslim women seems to be lower than other middle aged Thai women. Although the majority of the subjects had an average monthly income of less than 5000 baht, more than half of them perceived that they had sufficient income. Living in rural areas and working on a farm as agriculturists could help the subjects save money by using the natural resources in the locality. However, their overall socioeconomic status was still low and they could not always meet their needs because of the limitation of income. Only 1.9 percent of the subjects was single. Most of them (81.1%) were married and they married at a young age. The average number of children was 4, which is higher than the national average of 2 reported by the Family Health Projection Evaluation

(Family Health Care, Ministry of Public Health, 1995 cited in Muttigo, Upayotin, Anaprayot, & Chollumpee, 1997). The level of education of the subjects is quite low as most of them only had primary education and only 2 graduated with a vocational/bachelor's degree or higher. Their socioeconomic status may have been an obstacle to them having a higher level of education. They may have sufficient earnings to live in their society but insufficient to live outside. Most of them had the level of education that is accepted by their society. The educational level among these subjects seems lower than the other middle aged Thai women, however, comparison of education level between these 2 groups was not able to be found.

Health history

Hypertension was the main chronic illnesses found in these subjects; the same as in the whole country. The study of Churapawun (2000) found that hypertension, gout, gastritis and heart disease were the top 4 common chronic illnesses found in middle aged Thai women. Although some of the subjects in this study had a chronic illness, most of them perceived themselves as well, because their illness was under control and they could perform routine activities as well as anyone.

Menstruation history

Thirty seven point seven percent of the subjects reported menarche between the ages of 15 – 16 years, with the average age being 14.6 years, which is less than the average age of 16 years reported by the Health Department (Department of health , 1996). However, It is consistent with the study of Iemsawasdikul (1998) that found the average age of menarche in professional nurses in Thailand was 14 years. Thirty nine point nine percent of the subjects went through a natural menopause, 2.7%

surgical menopause and 57.4% were still menstruating. The average age of natural menopause was 48 years, which is consistent with a study by the Department of Health (1996) that found the average age of menopause in Thai women was 48 years. Saneebut (1997), Imsudjai (1997), Ngaongarm, (1997) and Rattanakit (1997) studied menopausal women in the east, northeast, northern and southern regions of Thailand and found that the average age of menopause in each part of Thailand was 41.1, 47.5, 47.7 and 48.2 respectively (Saneebut, 1997; Imsudjai, 1997; Ngaongarm, 1997; Rattanakit, 1997).

Menopausal symptoms in middle aged Thai Muslim women

The menopausal symptoms of these women were measured in terms of frequency and severity. The symptoms were divided into 3 categories; general-somatic, vaso-somatic and psychological. The frequency of symptoms referred to the occurrence of symptoms in the preceding month, while the severity of symptoms referred to the intensity of symptoms that occurred in the preceding month. Most of the subjects in this study scored both frequency and severity of their symptoms in the low level, reflecting that these middle aged Thai Muslim women perceived the occurrence of menopausal symptoms and the intensity of symptoms as minimal. Custom and culture determine the role of women in Thai society. Muslim women view menopause as a natural life event and have a positive attitude towards it. Without menstruation, Muslim women know that they can no longer have children and have more free time to do religious practices (Limchaiaunreang, et al., 2000). It may be their positive attitude that minimises both the frequency and severity of their symptoms.

The top ten menopausal symptoms reported by middle aged Thai Muslim women were similar to the symptoms found in the study of the Health Department (Health Department, 1996 cited in Chuprapawun, 2000). The common symptoms they found were back pain, headache, sleeplessness, hot flushes, irritability, and numbness and tingling.

Back pain (22.7%) and aches in the back of neck and skull (11.8%) were the most frequent of the general-somatic symptoms found in middle aged Thai Muslim women, respectively. Although only 12% and 6.3% reported the severity of back pain and aches in the back of neck and skull at moderate and severe. This result is much lower than in the study by Iemsawasdikul, 1998; Mongkoldee, 2000, & Preecharat, 1996, who studied menopausal symptoms in Thai women aged between 40-59 years and found that 48-62 percent of the subjects reported back pain. Back pain is not only a result of estrogen depletion but also aging and occupation. Musculoskeletal stress and strain result from static holding positions and static body positions (Blue & Levin, 1998). Considering the fact that the majority of the subjects in this study were agriculturists, farmers, rubber plantation workers and fishermen, occupations which require a lot of bending and energy use, their reported back pain is surprisingly low. Certainly subjects might not exercise and use the best techniques to support their back and prevent back pain.

Sleep problems, both early morning awakening (13.2%) and difficulty falling asleep (12.2%) were reported with a severity of 7.1-8.2% respectively; much less than the 34.2-50% reported in Thai women (Chompootawee, 1993; Preecharat, 1996). Not only economic problems lead to sleep disturbances but also menopause is directly implicated. Most of the women had an average income less than 5000 Baht/month and although this may be enough for living, it is often not enough to

access better accommodation and higher education for their children. On average they have twice number of children (4) that Thai women do. Although 57.9% of the subjects perceived themselves as having sufficient income it may not be enough for the better living. These problems may contribute to the subjects thinking about how to earn more money to support themselves in the future. Shaver & Zenk (2000) studied sleep disturbance in menopause reveal that sleep problems appear corequisite with hot flushes and sweats as well as sleep-related disordered breathing (SDB). The risk of SDB increases with age. Women, who are obese, have high blood pressure, are cognizant of snoring, and report morning and excessive daytime sleepiness may be under diagnosed for SDB. Relation to hot flushes (11.8%) may be cause of sleep disruption in these subjects. Hot flushes occurring at night are often preceded and sometimes followed by waking episodes (Erlik, et al., 1981). Therefore women who experience hot flushes at night have disrupted sleep and more likely to be related to morning awakening.

Weight gain (12.3%) was the next most common general somatic symptom although none rated it at more than mild severity. The progressive increase in weight at middle age is related to both the aging process and menopause. The effect of menopause influences fat distribution. The menopause is associated with loss of lean body mass (muscle) and an increase in total and abdominal fat mass (Panotopoulous, Raison, Ruiz, Guy, & Basdevant, 1997). As more than 70 percent of the subjects did not exercise, it may be a cause of weight gain in these subjects. However, most of the subjects were hard working and used body energy would help with weight loss. However, it is a common complaint in western women at menopause.

In married women, vaginal dryness, painful intercourse, and loss of sexual interest, were reported with the frequency of symptoms as often and almost always

by 13.1%, 3.7% and 8.1% of the subjects respectively, while the severity of these symptoms reported as moderate to severe were 1.7%, 1.7%, and 9.1% respectively. This is slightly lower than the studies of Chompootaweeep (1994), Mongkoldee (2000) and Precharat (1996) which found that 5.6-30 percent of the subjects had dyspnea and 15- 26.5 percent had vaginal dryness (Iemsawadikul, 1998; Mongkoldee, 2000). Lower estrogen levels can cause physical changes in a women's sexual organs so that having sex can become uncomfortable and painful (Bachman, 1994). The lower levels of sex related symptoms in this study might again reflect the more positive attitude they have toward menopause. Our findings show that the number of subjects with loss of sexual interest was higher than the number of subjects with vaginal dryness and painful intercourse, suggesting that loss of sexual interest among these subjects may not just be an effect of vaginal dryness or painful intercourse but also the aging process and the nature of their occupations. Agriculturists work hard and are often too tired for sex. Some women said that both them and their husbands were bored.

The vaso-somatic symptoms found in the top ten menopausal symptoms were hot flushes(11.8%) and loss of feeling in hand and feet (18%). Although hot flushes were reported in 11.8% of these subjects, only 5.2% rated them as moderate to severe. This is not consistent with the studies of Chompootaweeep, et al. (1994), Mongkoldee (2000), and Precharat (1996) that reported 22- 81.7 percent of the subjects having hot flushes. Hot flushes is experienced by 75% of perimenopausal and menopausal women in the United States (Shaw, 1997). One reason for the lower numbers that this study reported only the number of subjects "often and almost always" and did not include the "sometime occurred". However even if sometime occurred is added in it only brings it to 46.6% which is still less than other reports.

Kronberg, & Barnard, (1992) studied the modulation of menopausal hot flushes by ambient temperature and found that in a cool environment, hot flushes were fewer, less intense, and shorter in duration compared with a warm environment (Kronberg, & Barnard, 1992 cited in Lobo, 1999). Cooling device use by these women might reduce the severity of symptoms but are unlikely to affect the frequency.

The only psychological symptom with a frequency (12.3%) high enough to get into the top ten was irritability but less than 5.2% reported it as moderate or severe. This was less than found in the studies of Chompotaweep (1993), Iemsawasdekul, (1998), & Mongkoldee (2000), where 34-54.8% of the subjects reported experiencing irritability. Psychological symptoms may arise from the physical symptoms of the climacteric. Hot flushes at night clearly contribute to disrupted sleep (Abernethy, 1997; Lobo, 1999; Millonig, 1996). The pattern that develops could be considered a 'domino effect' where sleep disruption leads to insomnia, irritability and daytime fatigue (Millonig, 1996). In this study the prevalence of hot flushes is less than the previous studies and the psychological symptoms are also less. This is another area where their positive attitude may be having a positive effect.

All the findings show that the frequency and severity of menopausal symptoms experienced by these women did not greatly disturb them and were less than reported in previous studies, reinforcing the idea that their belief in menopause as a natural life event may minimise their symptoms.

Pre-perimenopausal subjects had significantly higher menopausal symptoms frequency mean score with regard to overall symptoms, general- somatic, vaso-somatic and psychological symptoms as compared to the postmenopausal group. In terms of severity, significantly higher mean severity scores on overall symptoms,

general-somatic and vaso-somatic symptoms were found in the pre-perimenopausal subjects but the psychological severity mean score between the two groups were not different.

This could be explained by the fact that pre-perimenopausal women face the beginning of menopause transition when they are 40 years old and some of the symptoms are reduced through the postmenopausal period. Declining ovarian function faces them with many physical and psychological changes. However, the psychological symptoms between these 2 groups were not different. The other factors may influence the psychological symptoms not only the declining of hormonal one. As discussed before, Muslim women view menopause as a natural life event and they are pleased to be in menopause. The prevalence of sleep disturbances was also increased in perimenopausal women and may be related to the hot flushes and the sleep-related breathing disorder that increases with age.

In conclusion, the experiences of menopausal symptoms among these subjects were at a low level. Only a small percent of subjects reported the menopausal symptoms as moderate to severe. This is consistent with the studied of Limchaiarunreang (2000) who found that, Muslim women view menopause as a natural life event and so perceive the symptoms as normal changes and hence do not suffer severely from them.

Health practices.

Although the overall health practices mean score was fair, the elimination practices score was excellent, nutrition, sleep, and stress management were average, and exercise and general responsibility for health were poor. Religion might have influenced the elimination practices of the women in this study as Muslim women

pray 5 times a day and they have to clean their body before praying. The common elimination practices found in this study were perineum care after elimination, not using laxative drugs, and not holding urine for a long time.

The mean score of health practices regarding nutrition was only average even though food in their community is abundant and cheap, such as seafood, rice, fruit and vegetables. However limitations of income may be an obstacle to them eating other foods and so they are not able to meet the essentials of nutrition at each meal. The results confirmed that none of the subjects drink alcohol because it is forbidden by their religion. The subjects do not drink tea or coffee, which may be influenced by the sociocultural customs of the people in southern region of Thailand. Drinking milk or soybean milk was also uncommon among these subjects. Most of the subjects explained the reason that they did not drink milk was because it is too expensive and some of them feel that they get a stomachache by drinking it. Soybean milk was not too expensive but it was not available in their community. They had to go to the central market in town and it took a long time to get there. Taking synthesized vitamins was also uncommon in these subjects because most of them perceived synthesized vitamins as medication and they did not want to take medication without sickness.

The sleep and rest of the subjects in this study was also scored at average despite only one practice being in the top ten. Religion might influence the sleep of the subjects in this study, as being Muslim, they pray 5 times a day. Religious practices help them to relax their body and mind. As the Muslim women view menopause as a natural life event they did not suffer from psychological symptoms. The nature of their environment and the society of people in the rural area help them to relax. However, the main occupation of the subjects in this study were

agriculturists, hard work during the day could cause back pain and muscle pain that causes sleep disturbance. This might impact on the rating of sleep and rest only being average. Although rubber workers get up at 4 am, they seem to still get 6-8 hours of sleep per day.

The score of exercise practices was poor. The low number of subjects who exercise was congruent with studies of Uppakarakul (1995), Precharat (1996), and Rungrattrakul (1999), that found 59-73% of menopausal women did not exercise. As most of the subjects were agriculturists, the nature of their work might make it difficult for them to find the time to exercise. Some women thought that they do not need more exercise because their work already used a lot of energy.

Stress management of subjects was also average. As subjects in this study are friends and relative, they help each other when they have problems. This is consistent with the study of Rungrattrakul (1998) who found that menopausal women talk and express their feelings to a relative or close friend when they have problems. The religious practices such as praying 5 time a day also help to reduce stress.

The mean score for general responsibility for health was poor, which is consistent with the study of Ma'aitah, Haddad, & Umlauf, (1999) that studied the health promoting behavior of menopausal women and found that the subjects reported low scores on the dimension of responsibility for health. Most of the subjects had never had a medical check up or Pap smear because they perceived themselves as being well and did not need check ups. Some women felt that having a Pap smear was a waste of time and money and others were ashamed to be examined by a doctor. In addition, Muslim women being the primary caregivers in families are expected to be more concerned about nurturing others, taking care of the children, the sick and elderly members of their extended families so they don't have enough time

to look after themselves. They would only seek medical check ups in the case of sickness.

Only the women (1.9%) who had surgical intervention used hormones. A small number of subjects used traditional therapies, such as herbal medications (5.2%) or massage (8.2%). The Muslim women view menopause as a natural part of life and are positive about it, so they see no need to take medication. Rabin, Cipparone, Linn, & Moen (1999) surveyed 3600 women > 50 years in northwest suburban Chicago, about why menopausal women did not want to take hormone replacement and found that a total of 1,966 (65%) women responded. 1,356 respondents were not being treated with HRT. Reasons for not taking HRT included the following; 49% no longer had menopausal symptoms, 45% did not want to take HRT, 33% were not offered it by their doctors, 28% were afraid to use it, and 27% were not menopausal.

Confirming women's knowledge about menopausal health or assisting physician education about menopausal health may offer opportunities to assist women's decision making about HRT and to improve women's health care. The number of subjects using herbal therapy (5.2%) and traditional Thai massage (8.2%) were also not high. It might be because of the attitude of Islam women toward menopause was positive and the information on using these kind of alternative therapies was not available in their societies. The experience of their ancestors in using alternative therapy may have strongly influenced their decision making.

The comparison of menopausal symptoms and health practices between pre-perimenopause and postmenopause

Every category of menopausal symptoms frequency mean score of pre-perimenopausal women was significantly higher than that of postmenopausal women. The pre-perimenopausal group had significant higher general-somatic and vaso-somatic severity scores than the postmenopausal group but there was no significant difference in the psychological severity scores between these 2 groups. This study shows that pre-perimenopausal woman more likely to have frequency and severity of menopausal symptoms than postmenopausal women. However, the severity of psychological symptoms between these two groups was not different. Brown, Mishra, & Dobson (2002) studied the changes in physical symptoms during the menopausal transition and found that perimenopausal women were more likely than postmenopausal women to report the symptoms of headaches, back pain, stiff joints, tiredness, and difficulty sleeping. Hunter (1990) conducted a prospective follow up of 36 of the premenopausal women from the initial survey who were perimenopausal or postmenopausal 3 years later and found that a depressed mood was strongest in premenopausal women. Cheewarongroj (2000) studied factors associated with menopausal symptoms and found that peri-postmenopausal women were more likely to have urogenital symptoms than premenopausal women. Every woman is experience of the menopause period is different and is influenced by many factors other than just hormonal ones. The expectations of the menopause and related symptoms, life experiences, culture, and circumstances influence the perception and experiences of the menopausal period. Although the frequency of menopausal symptoms of pre-perimenopausal women was higher than the postmenopausal women the severity of psychological symptoms between these two groups did not

differ. Their religious practices may assist their positive mental status. An other concern is that the stress management of pre-perimenopausal women was higher than postmenopausal women, so they were able to reduce their psychological symptoms. The elimination practices and general responsibility for health of pre-perimenopausal women was higher than postmenopausal women because pre-perimenopausal had higher levels of education than postmenopausal subjects. All of the postmenopausal subjects had education level not more than primary school but pre-perimenopausal subjects education level was primary school at least. The two women who graduated bachelor degree were also pre-perimenopausal subjects. The pre-perimenopausal women who had higher level of education, had more chances to get health care information and services than postmenopausal women. The education influenced the perception of these women. This is consistent with the study of Hounthasarn (1996) who studied factors affecting health promotions behavior among menopausal women in rural Nonthaburi province and found that education was significantly associated with health promotion behavior ($p < 0.001$).

The relationship between menopausal symptoms and health practices

The frequency and severity of menopausal symptoms of the subjects had a significantly negative relationship with health practices ($P < 0.01$), $r = -.293, -.174$, respectively. That is, women who had fewer as well as mild symptoms and perceived themselves as healthy performed better health practices than the subjects who had moderate or severe levels of menopausal symptoms. The subjects who had high prevalence and more severe symptoms may have performed good health practices to reduce the symptoms. In the other words, those who had a lower prevalence as well as mild level of symptoms had the energy to do the good health

practices. This study supports many previous studies demonstrating that good health practices leads to good health as well as minimising symptoms (Ardong, 1999; Konton, 2000; Limpapayom, & Panyakumlert, 1999; Ma'aitar, Haddad, & Umlauf, 1999). However, the design of this study, a cross-sectional design can not demonstrate whether the relationship between menopausal symptoms is causal. The negative correlation of menopausal frequency and menopausal severity score with overall health practices in this study is supported by the study of Panthong (1997) and Kirdsuwan (1997). Panthong (1997) found that menopausal symptoms had a negative relationship to health promotion behavior. Kirdsuwan (1997) found that there was an association between self care and symptoms of hormonal deficiency ($p < 0.0001$). However, Hounthasarn (1996) did not find a significant relationship between the symptoms of hormonal deficiency and health promotion behavior.

Limitations of the study

1. This study was a descriptive design study. The data were based on the subject's responses of what they could remember of their experiences of menopausal symptoms during the 1 month prior to the data collection day. A prospective longitudinal study would have given much better information if the time and financial resources had been available.
2. The study of menopausal symptoms and health practices among middle aged Thai Muslim women was a cross-sectional study. The results could not demonstrate the cause- effect relationship.