Sexual Functioning in Postmenopausal Women Not Taking Hormone Therapy in the Gynecological and Menopause Clinic, Songklanagarind Hospital Measured by Female Sexual Function Index Questionnaire

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Objective: To study sexual functioning and attitudes towards sexuality in postmenopausal women.

Material and Method: A cross-sectional study was conducted among 219 healthy postmenopausal women with a uterus, aged 45-55 years, and not taking hormone therapy, who attended the gynecological and menopause clinic, Songklanagarind Hospital. The Female Sexual Function Index (FSFI) questionnaire was used as the instrument.

Results: The median age at enrollment and menopause age of women were 52 and 49, respectively. All the women had engaged in sexual intercourse. Sixty nine percent reported being sexually active once or twice in the previous four weeks, 27.9% three to four times and 3.1% more than four times. The mean total FSFI score was 20.4 while the proportion of women with female sexual dysfunction based on FSFI overall scores of 26.5 or less was 82.2%. Almost all the women displayed a positive attitude towards sexuality. Ninety six percent reported having sex in menopause as a natural normal part of life, 95% regarded having sex to make their partner happy whereas 77% regarded sex as a way to make themselves happy.

Conclusion: Sexual dysfunction in postmenopausal women was rather high. However, they were still satisfied with their sexual relationship and had a positive attitude towards sexuality.

Keywords: Sexual dysfunction, Sexuality, FSFI, Menopausal women, Attitude toward sexuality

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Sexuality is an important part of women’s health, quality of life, and general well-being. There are many factors influencing the female sexual function including biological, psychological, physiological, couple relationship, and sociocultural factors(1). Additionally, middle-aged women are influenced by the hormonal changes surrounding the menopause(2-5). In Thai society, sexual discussions are almost taboo; hence, these problems are often not voluntarily talked about. Epidemiological data is a valuable tool for the development of strategies and allocation of adequate resources necessary to provide assistance for the population. In Thai postmenopausal women, there are only a few studies that have evaluated sexual functioning(6-9). The present cross-sectional study, therefore, attempts to study sexual functioning and attitudes towards sexuality in southern Thai postmenopausal women.

Material and Method

Subjects

A prospective cohort study was conducted between February and May 2006 at Songklanagarind Hospital’s Gynecological Clinic, which received referrals from other hospitals throughout the southern part of Thailand. Although the hospital is located in an urban...
setting, the patients come from both urban and rural areas. The present study sample was drawn from among healthy women with an intact uterus who had the menopause naturally for a period of at least one year and aged 45-55 years and had a regular sexual partner. Exclusion criteria included those who were taking hormone therapy, antidepressants, any medication suspected of affecting their sexual performance or had done so in the past three months, had pelvic malignancies, exposed to radiation and chemotherapy for an existing malignancy, who had reproductive surgery, and those who were unwilling to participate in the present study.

The number of women required in the present study was calculated from the formula where $Z_{\alpha}$ was set as 1.96 with a type I error of 5%, $D$ was set at 10%, and $P$ was obtained from the proportion of women who had sexual dysfunction from the review study(4). The number was then added with 10% of the number of women who might be excluded due to incomplete clinical data. This made a total rounded-up sample size of 120 women.

**Measures and procedures**

The present study project was approved by the Institute Ethics Committee of the Faculty of Medicine at Prince of Songkla University.

There were no specific screening instruments for sexual function in Thailand consequently the present study used the Female Sexual Function Index (FSFI) to measure sexual function, which was comprised of an anonymous questionnaire and a patient-based self-reported instrument. The FSFI composed of 19 questions concerning sexual function over a four-week period and were clustered into six domains of female sexual response: desire, arousal, lubrication, pain, orgasm, and satisfaction. The resulting six subscales of the FSFI were shown to have excellent internal reliability (Cronbach’s alphas > 0.8 for all subscales) and good test-retest reliability scores that ranged from 0.79 to 0.88(10-13). It has been validated on women with clinically diagnosed female sexual arousal disorder (FSAD)(10,13); hypoactive sexual desire disorder (HSDD)(12,13); female orgasmic disorder (FOD)(12,13); dyspareunia/vaginismus(13) and multiple sexual dysfunctions(13). All questions were given a scoring system ranging from 0 to 5, each domain was assigned a minimum and maximum score (0-6) and the total score ranged from 2 to 36. Higher scores are associated with a lesser degree of sexual dysfunction. Those who had an overall FSFI score of < 26.5 were defined as potentially having sexual dysfunction(13). As there were no cutoff scores used from the original studies to identify sexual problems in the various domains the authors used the criteria reported by Safarinejad MR(14) whereby scores < 65% of the maximum achievable score or < 3.9 in each domain were considered as sexually dysfunctional. They also categorized female sexual functions in four groups: normal female sexual function (total score > 23), mild FSD (total score 18-23), moderate FSD (total score 11-17), and severe FSD (total score < 10).

As there was no validated Thai version of the FSFI, a translation was made of the English version of FSFI followed by an independent back translation to check. After that, the Thai edition questionnaire was assessed with a sample of 20 postmenopausal women for both wording and comprehension. The reliability coefficient of the Thai edition questionnaire was 0.9 and for those who were unable to read, the questions were read to them and their responses were recorded by the same research assistant. The questionnaires were collected immediately upon completion with all the statements being checked at that time to ensure complete answers.

The dependent variable was the FSFI scores. The independent variables consisted of four parts as follows:

- Demographic characteristics including age, religion, education, occupation, family monthly income, marital status, number of times married
- Participants health status including recent surgery, physical limitations restricting sexual activity, current medication use, and vasomotor symptoms
- The attitudes towards sexual activity in the menopausal period, and their currently sexual function.
- The partner status included age, religion, education, and physical limitations restricting sexual activity, family structure, and living situation.

**Statistical analysis**

The scores of the FSFI were summed and tested for normal distribution. The sum of the scores was stratified into a dichotomous variable indicating that a score of < 26.5 was defined as potentially sexually dysfunctional and a score of more than 26.5 as women without sexual dysfunction. The Chi-square test tested the factors associated with sexual dysfunction. Following this, a multivariate regression analysis was performed. A $p$-value of less than 0.05 was considered statistically significant.
Results

Characteristics and health status of participants

One hundred and twenty nine women were invited to take the Thai FSFI. None refused to participate in the survey. All completed the questionnaire. More than two-thirds came to the Gynecological Clinic for routine pelvic examination and Pap smear screening. The remaining third were attending the clinic for their first menopause-related symptoms and had never taken hormone treatment before. Their age ranged between 45 and 55 years (median 52 years) and age at menopause ranged between 39 and 54 years (median 49 years). About 5% of the women had early menopause (< 45 years). The characteristics of the participants are given in Table 1. None had any physical limitations, medical disease or problems; i.e. urinary incontinence or abnormal vaginal bleeding, which restricted their sexual activity. All were non-smokers, married, still living with a male partner, and sexually active. Of the 129 women, 121 (93.8%) had nuclear families and the others had extended families, 124 women (96.1%) had a private bedroom, one (0.8%) also had a private bedroom but shared it with their grandson, and four (3.1%) had a separate bedroom from their partners.

Characteristics and health status of the partners

The partners’ age ranged between 43 and 73 years (median 55 years). The majority of them, 94.6% were Buddhist and the remaining were Muslims. Of 129 partners, 54.3%, 19.4%, and 26.4% graduated from primary school, secondary school, and college or university, respectively, and 67.4% were employed. Six partners (4.7%) had sexual problems; five had erectile difficulties and one had low sexual desire. None had any physical limitations or medical diseases or problems that restricted their sexual activity.

Attitudes of the participants towards sexuality

Almost all the women displayed a positive attitude towards sexuality (Table 2). Ninety-six percent reported having sex in menopause as a natural normal part of life, 95% regarded having sex to make their partner happy whereas 77% regarded sex as a way to make themselves happy.

Sexual function

All the women had engaged in sexual intercourse. Eighty-nine (69.0%) reported being sexually active once or twice in the previous four weeks, 36 (27.9%), three to four times and four (3.1%) more than four times. The mean total FSFI score was 20.4 and of the 129 women, 106 (82.2%) had an FSFI score of 26.5 or less. If the authors classify the female sexual function into four groups by criteria reported by Safarinejad MR(14), there were 40 (33.1%), 48 (39.7%), 29 (23.9%), and 4 (3.3%) categorized as having normal female sexual function (total score > 23), mild FSD (total score 18-23), moderate FSD (total score 11-17), and severe FSD (total score < 10).

The lowest domain score was noted in desire, followed by arousal, orgasm, lubrication, satisfaction, and pain (Fig. 1). The number of women who had scores less than the cutoff point (< 3.9) in each domain is shown in Fig. 2.

About two-thirds, 66.7% of the women (86 of 129) reported “never” or only “occasionally” having feelings of desire for a sexual experience, feeling receptive to a partner’s sexual initiation and thinking about having sex. Thirty-one percent of women (40 of 129) reported their arousal problems as, “never” or only “occasionally” experiencing arousal during sexual activity. Eighty-two percent of the women (106 of 129)
had experienced orgasm. Out of 129 women, 32.6% and 42.6% never experienced pain within the vagina or the genital area during and after sexual activity respectively.

Interdomain correlations were significant and ranged from $r = 0.23$ to $r = 0.83$ (Table 3). The highest correlations were between arousal and orgasm ($r = 0.73$), arousal and satisfaction ($r = 0.70$), orgasm and satisfaction ($r = 0.75$), and lubrication and pain ($r = 0.61$).

The most significant factor that was associated with a score $< 26.5$ in the FSFI was educational level. It showed that women who had high education tended to have sexual dysfunction.

### Discussion

The present study reported results of a hospital based sample of 129 postmenopausal women aged 45-55 years on a range of sexual function by using FSFI scores. All the women had never taken hormone therapy, were with partners, and were sexually active. None had any health problems that could restrict their sexual activity. Although six partners (4.7%) had sexual problems they still had regular sexual activity with their partners. The majority of women was in a nuclear family and had private bedrooms. Therefore, the authors assume that this potentially affects the freedom to engage in sexual behavior.

The FSFI has demonstrated excellent discrimination for the validity, reliability, and appropriate correlation among domains\(^{(10-13,15)}\). Wiegel et al\(^{(13)}\) proposed that a total score of $< 26.5$ in the FSFI should

### Table 2. The attitude towards sexual activity in the postmenopausal period

<table>
<thead>
<tr>
<th>Attitude</th>
<th>% of disagree</th>
<th>% of uncertain</th>
<th>% of agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Having sexual activity is natural normal thing in menopausal period</td>
<td>3.1</td>
<td>0.8</td>
<td>96.1</td>
</tr>
<tr>
<td>- Having sexual activity makes the postmenopausal women happy</td>
<td>17.1</td>
<td>6.2</td>
<td>76.8</td>
</tr>
<tr>
<td>- Having sexual activity makes the postmenopausal women’s partners happy</td>
<td>1.6</td>
<td>3.1</td>
<td>95.3</td>
</tr>
<tr>
<td>- No sexual activity affects the postmenopausal women’s life so much</td>
<td>27.1</td>
<td>5.4</td>
<td>67.5</td>
</tr>
<tr>
<td>- Having sexual activity in menopause is the embarrassing thing because of old age</td>
<td>83.7</td>
<td>0.8</td>
<td>15.5</td>
</tr>
<tr>
<td>- Having sexual activity in menopause is very shy in Thai society</td>
<td>92.2</td>
<td>1.6</td>
<td>6.2</td>
</tr>
<tr>
<td>- Having sexual activity in menopause is the bad behavior and oppose to Thai culture</td>
<td>93.8</td>
<td>0.8</td>
<td>5.4</td>
</tr>
<tr>
<td>- Having sexual activity in menopause is prohibited from religious beliefs</td>
<td>97.7</td>
<td>0.8</td>
<td>1.6</td>
</tr>
<tr>
<td>- You are very nervous and shy if others know that you still have sexual activity</td>
<td>82.9</td>
<td>2.3</td>
<td>14.7</td>
</tr>
<tr>
<td>- Postmenopausal women should go to the temple and make the merit instead of thinking about sexual activity</td>
<td>31.0</td>
<td>3.1</td>
<td>65.9</td>
</tr>
<tr>
<td>- Their body images are changed and make them too embarrassed to have sexual activity with their partners</td>
<td>82.2</td>
<td>2.3</td>
<td>15.5</td>
</tr>
<tr>
<td>- Having sexual activity during the menopause is very happy because they don’t concern about getting pregnancy</td>
<td>89.9</td>
<td>6.2</td>
<td>3.9</td>
</tr>
</tbody>
</table>

### Fig. 1  Box plot: mean FSFI scores in each domain

Higher scores represent higher levels of function for all domains.

### Fig. 2  Percentage of women who had scores less than cut-off point ($< 3.9$) in each domain

83.0, 82.9, 52.7, 63.8, 51.9, 27.1
Based on this cut-off, they found that 70.7% of women with sexual dysfunction and 88.1% of the sexually functional women in the cross-validation sample were correctly classified. From the present study, 82.2% of the women had an FSFI score of ≤ 26.5 and 66.9% had a total score of ≤ 23. This reported result gives a high rate of women who are classified as being at risk of sexual dysfunction and is somewhat higher than those previously published in Western countries. In 1992 analysis of data from the National Health and Social Life Survey (16), a study of population-based adult sexual behavior in the United States (US), found that sexual dysfunction affected more than 40% of women aged 18-59 years and was associated with age. A recent national survey of older adults aged 57-85 years in US also showed half of the women reported at least one bothersome sexual problem (17). Oksuz et al (18) studied this issue in Turkish women using the FSFI. They reported the prevalence of sexual dysfunction (score < 25) increased from 41% at aged 18-30 years to 53.1% at aged 31-45 years and to 67.9% at aged 46-55 years. These results were consistent with those reported from a population-based study in Iran (14), which showed the prevalence of female sexual dysfunction (FSFI scores < 23) increased from 26% in women aged 20-39 years to 39% in those over 50 years of age.

From the present study, the lowest domain score was noted in desire, followed by arousal, and orgasm, which does not deviate much from the data established within a Thai menopausal population (6-8). Distribution into the various domains was both consistent and inconsistent with other reports (19-22). This variance may be explained by cultural and racial differences, the differences in the clinical definition used for each dysfunction, the method of assessment and characteristics of the participants. Therefore, a direct comparison between different studies is hampered by the lack of a uniformly validated questionnaire and the previously described reasons.

The recent review of the available literature indicates that as women age an increasing number experience low sexual desire (23). However, most studies report no change in the prevalence of Hypoactive Sexual Desire Disorder (HSDD) with age (24, 25). Hayes et al (26) found age related increases in the prevalence of low desire were counter-balanced by decreases in the proportion of these women who were distressed by low desire. Consequently, there was no significant change in the prevalence of HSDD with age. Although, this present study did not evaluate the personal distress associated with sexual dysfunction and the impact of sexual dysfunction on the quality of life, these results might showed some aspect of this issue. From the present study, in spite of experiencing a low sexual desire and an inability to achieve arousal or orgasm found in many women, however, they were still satisfied with their sexual relationship. This was evident from the higher score in this domain. Regarding sexual satisfaction, it is positively associated with indicators of relationship quality such as love, commitment, and stability. From the present results, most of the women had only been married once so it might reflect the good relationship between the women and their partners and positively affect their attitudes to their sexual function. Therefore, it might be another reason that explains why many women in the present study had low sexual desire but high scores of sexual satisfaction. On the other hand, this result might reflect that female sexuality is more complex and cultural patterns influence the aspects of sexual function, especially regarding what the women expect at this stage of life regarding their sexuality. These support the results of the present study that mostly showed that women had positive attitudes towards sexuality in the menopause stage of life (Table 2). Other factors that are discussed as contributing to a woman’s sense of sexual satisfaction.
include age, marital status, personal factors such as empathy, positive attitudes to sexuality, and self-esteem and communication between couples.

In Thailand, there are no studies of FSFI in menopausal women. However, two studies\(^\text{27,28}\) investigated the effect of contraceptive methods on sexual function in reproductive age women by using the FSFI questionnaire as the measurement tool. The mean overall FSFI scores at recruitment were 19.6 and 22.9, which were well below the cut-off point for female sexual dysfunction, but they were comparable to the result from the present study conducted in menopausal women. They were also comparable to the results from the other Asian countries (Table 4). Why do Thai reproductive age and menopausal women have a low overall FSFI scores? These results might reflect actual sexual problems in Thai women or it might be due to Thai women having different cultural sexual attitudes from a Western population. Therefore, the appropriate cut-off scores may be less than previously published. Furthermore, it is possible the Thai version of the FSFI questionnaire should be validated in Thai women before it is widely used in future or perhaps there is a need to develop a new questionnaire that would be suitable for the assessment of the Thai female sexual function.

Table 4. The domain scores (mean ± SD)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Desire score</th>
<th>Arousal score</th>
<th>Lubrication score</th>
<th>Orgasm score</th>
<th>Satisfaction score</th>
<th>Pain score</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-59</td>
<td>3.4 ± 1.3</td>
<td>3.4 ± 2.2</td>
<td>3.7 ± 2.5</td>
<td>3.6 ± 2.4</td>
<td>3.9 ± 1.8</td>
<td>3.9 ± 2.6</td>
<td>22.9 ± 11.0</td>
</tr>
<tr>
<td>40-49</td>
<td>3.7 ± 1.8</td>
<td>3.2 ± 1.6</td>
<td>3.6 ± 1.7</td>
<td>3.1 ± 1.6</td>
<td>3.2 ± 1.6</td>
<td>5.1 ± 1.7</td>
<td>20.1 ± 12.3</td>
</tr>
<tr>
<td>50-60</td>
<td>3.3 ± 1.7</td>
<td>2.9 ± 1.9</td>
<td>3.2 ± 1.8</td>
<td>3.1 ± 1.7</td>
<td>2.9 ± 1.5</td>
<td>5.2 ± 1.9</td>
<td>19.0 ± 11.0</td>
</tr>
<tr>
<td>46-54</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>21.9 ± 9.2</td>
</tr>
<tr>
<td>18-48</td>
<td>2.7 ± 0.8</td>
<td>3.2 ± 0.9</td>
<td>3.9 ± 1.1</td>
<td>3.9 ± 1.2</td>
<td>4.4 ± 0.9</td>
<td>4.8 ± 0.9</td>
<td>22.9 ± 4.6</td>
</tr>
<tr>
<td>The present study</td>
<td>2.2 ± 0.9</td>
<td>2.7 ± 0.9</td>
<td>3.5 ± 1.5</td>
<td>3.4 ± 1.2</td>
<td>3.9 ± 0.9</td>
<td>4.5 ± 1.5</td>
<td>20.4 ± 5.3</td>
</tr>
</tbody>
</table>

There were some limitations in the present study. First, the present study may not be generalizable because it was conducted in a tertiary hospital and therefore the participants may not truly represent the overall general menopausal population. However, more than two-thirds attending clinics for routine gynecological examinations may make very good subjects. Second, the Thai version of the FSFI questionnaire was not validated for accuracy, so the high rate of sexual dysfunction in the present study results should be used with caution when interpreting the results.

The strengths of the present study include the subjects who were all healthy women with an intact uterus, who did not have any restrictions of sexual activity, had natural menopause, were not taking hormone therapy, were with a partner. Additionally, some questions were also related to their partner. The authors used FSFI, which is the internationally accepted FSD questionnaire, and this measure presents acceptable test-retest reliability, internal consistency, and validity. Moreover, all the women accepted and were willing to join the present study and completed all the questions.

From this present study, sexual dysfunction in menopausal women is rather high. However, still more research is needed to further evaluate the validity of the questionnaire used in the Thai specific group and to understand more about the sexual function impact on their quality of life and sex as related to personal distress.

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References

เพศสัมพันธ์ในสตรีวัยหมดประจำเดือนที่ไม่ใช้ออร์โมนเพศทดแทน ซึ่งมาตรวจที่คลินิกวัยหมดประจำเดือน และคลินิกนรีเวชโรงพยาบาลสงขลานครินทร์ โดยใช้แบบสอบถาม female sexual function index (FSFI)

กรัณฑรัตน์ ปิยนันท์จรัสศรี, ทิพวรรณ เลียบสื่อตระกูล, กรัณฑ์รัตน์ สุนทรพันธ์, ธนพันธ์ ชูบุญ, เพ็ญจิตต์ มานพศิลป์

วัตถุประสงค์: เพื่อประเมินทัศนคติเกี่ยวกับการมีเพศสัมพันธ์และปัญหาเพศสัมพันธ์ในสตรีวัยหมดประจำเดือน
วิสัยและวิธีการ: เป็นการศึกษาแบบตัดขวางในสตรีวัยหมดประจำเดือนอายุ 45-55 ปี ที่ยังมีเมคโลก และไม่ใช้ออร์โมนเพศทดแทน จำนวน 219 ขัน ซึ่งมาพบป่วยที่คลินิกวัยหมดประจำเดือน และคลินิกนรีเวช โรงพยาบาลสงขลานครินทร์ โดยใช้แบบสอบถาม female sexual function index (FSFI) ประเมินเกี่ยวกับเพศสัมพันธ์
ผลการศึกษา: สตรีที่เข้ารับการศึกษามีอายุเฉลี่ย 52 ปี และหมดประจำเดือนเมื่ออายุเฉลี่ย 49 ปี แต่ร้อยละ 71 ยังคงมีเพศสัมพันธ์อยู่เสมอ ในช่วง 2 สัปดาห์ที่ผ่านมา ร้อยละ 69 มีเพศสัมพันธ์เฉลี่ย 1-2 ครั้ง ร้อยละ 27.9 มีเพศสัมพันธ์เฉลี่ย 3-4 ครั้ง และที่เหลือร้อยละ 3.1 มีเพศสัมพันธ์เฉลี่ยมากกว่า 4 ครั้ง ค่าเฉลี่ยของคะแนนรวม FSFI เท่ากับ 20.4 แต่ร้อยละ 82.2 มีคะแนนทางเพศสัมพันธ์เท่ากับคะแนนรวม FSFI ห่างจากขั้นต่ำอย่าง 26.5 บ๊กเกอร์ สตรีส่วนใหญ่มีทัศนคติที่ต่อต้านการมีเพศสัมพันธ์ โดยขั้นต่ำ 96 ดีกว่าการมีเพศสัมพันธ์ ในร้อยละ 77 คิดว่ามีเพศสัมพันธ์ทำให้ตัวเองมีความสุข
สรุป: คลินิกวัยหมดประจำเดือนส่วนใหญ่มีทัศนคติที่ต่อต้านการมีเพศสัมพันธ์ แต่ยังคงมีทัศนคติที่ดีต่อการมีเพศสัมพันธ์ในวัยนี้