Original Article

Pelvic Floor Dysfunction and Female Sexual Function

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Objective: To evaluate sexual function in women with pelvic floor symptoms and to investigate the association between pelvic floor symptoms, pelvic organ prolapses [POP] staging, compartment of POP, and sexual function using a short form of the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire [PISQ-12].

Materials and Methods: Medical records of women with pelvic floor symptoms attending a urogynecology clinic who were sexually active were reviewed. Information about age, parity, menopausal status, medical history, history of vaginal delivery, and hysterectomy were collected. Pelvic floor symptoms, evaluated by the validated, self-administered Thai version of Pelvic Floor Bother Questionnaire [PFBQ] and sexual function, assessed by a PISQ-12 were recorded. Staging and compartment of POP were assessed using the International Continence Society Pelvic Organ Prolapse Quantification [POP-Q] System.

Results: The mean age of the 312 sexually active women was 58.9±11.4 years. Two hundred forty-one (77.2%) were menopausal. Urinary incontinence was the highest reported pelvic floor symptom with the prevalence of 80.1%. There was no association between PISQ-12 scores and pelvic floor symptoms, POP staging, and compartment of prolapse. Nulliparous women and women who had sexual pain showed significantly lower PISQ-12 scores (p<0.05).

Conclusion: Sexual impairment was not related to severity and compartment of prolapse. Women with dyspareunia symptoms were likely to experience sexual impairment.

Keywords: Pelvic organ prolapse, Pelvic floor dysfunction, Female sexual function

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Pelvic floor dysfunction [PFD], which includes stress urinary incontinence [SUI], urgency urinary incontinence [UUI], anal incontinence [AI], and pelvic organ prolapse [POP], is a common condition affecting approximately 50% of women, with higher prevalence in older women and women with higher parity[1-3]. The problem related to these disorders can have a profound impact on affected women's health, quality of life, and sexual health. From previous reports, about half of women with PFD report impairment in sexual function and up to 64% of sexually active women attending urogynecology clinic suffer from female sexual dysfunction[4,5]. However, some studies reported no difference in sexual function between women with or without PFD[6,7]. Women with urinary incontinence and AI may feel embarrassment and fear of leakage during sexual activity, whereas prolapsed women may have problems of vaginal laxity and mechanical obstruction. These may result in avoidance of sexual activity and sexual dysfunction symptoms i.e., obstructed intercourse, coital urinary incontinence, coital fecal urgency, or dyspareunia[8]. At present, most studies of the effect of PFD on the quality of life have focused on general aspect of quality of life, with little emphasis on sexual function. Therefore, the relationship between PFD and sexual function remains conflicted[9-12]. Moreover, talking about sexual problem is considered as an embarrassing subject among women especially in Asian culture. Many patients are reluctant to ask about sexual concern during PFD treatment. Therefore, the objectives of this study were to evaluate sexual function in women with pelvic floor symptoms and to investigate the association between pelvic floor symptoms, POP, and sexual function.

Materials and Methods

A retrospective study was conducted after approval by the Ethical Clearance Committee on Human Rights related to Researches involving Human Subjects, Faculty of Medicine Ramathibodi Hospital, Mahidol University. Medical record of 312 sexually

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active women with pelvic floor symptoms, attending the Urogynecology Clinic of a university hospital were reviewed. Demographic data including age, parity, menopausal status, medical history, history of vaginal delivery, and hysterectomy were collected. Pelvic floor symptoms were evaluated using the validated, self-administered Pelvic Floor Bother Questionnaire [PFBQ][13]. The PFBQ was translated and back translated to develop a Thai version and validated by three gynecologists with special interest in urogynecology for cross-cultural research. The pelvic floor symptom items used in the analysis included SUI, UUI, POP, and AI. Each symptom in the last month was considered as positive when the answer was "present" no matter if it bothered or not. Sexual function was assessed using a condition-specific questionnaire, a short form of the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire [PISQ-12]. This questionnaire consists of 12 items about physical, behavioral-emotive, and partner-related aspects of sexual functioning. The sum score ranges from 0 to 48, with a higher score indicating better sexual function[14]. The PISQ-12 have been translated forward and backward. The back-translation and the original were compared by linguist. The Thai version questionnaire was assessed with a sample of 20 sexually active women for both wording and comprehension. The reliability coefficient of the Thai version questionnaire was 0.90. All women underwent standardized POP assessment according to the International Continence Society Pelvic Organ Prolapse Quantification [POP-Q] System.

The Statistical Package for Social Sciences [SPSS] version 17.0 was used for data analysis. Data are presented as mean and standard deviation or percentage, depending on the variables. The statistical analysis were carried out using Chi-square test and analysis of variance model. A 5% level of statistically significance was used throughout the study.

Results

The mean age of the 312 sexually active women with pelvic floor symptoms attending the urogynecology clinic during the study period was 58.9±11.4 years (range 21 to 87). Most of them were parous (91.7%). The characteristics of subjects are presented in Table 1.

According to the PFBQ, 250 (80.1%) women reported urinary incontinence in the last month whereas 192 (61.5%) and 161 (51.6%) women reported POP and AI, respectively. Interestingly, up to 59.0% of women reported dyspareunia. Regarding POP staging, 13 (4.2%) had no prolapse (stage 0). The rest were classified as stage I (13.5%), stage II (51.0%), stage III (25.3%), and stage IV (6.1%). Of the 299 prolapsed women, 290 had anterior, 261 had apical, and 241 had posterior compartment (Table 2).

PISQ-12 score in women with PFD, PISQ-12 score was significantly associated with parity and dyspareunia symptom (p<0.05). Menopausal status, history of vaginal delivery, previous hysterectomy, UI symptom, AI symptom, and vaginal bulge symptom were not significantly associated with AI symptom (p = 0.05). Moreover, there was no significant difference in PISQ-12 scores among sub-grouping of different POP staging and compartment of prolapses (p = 0.05), as detailed in Table 3.

Table 1. Demographic characteristics

Characteristics	n (%) (total = 312 subjects)
Age, mean ± SD (range)	58.9±11.4 (21 to 87)
Parity	
Nulliparity	26 (8.3)
Multiparity	286 (91.7)
History of vaginal delivery	77 (24.7)
Menopausal status	
Premenopause	71 (22.8)
Postmenopause	241 (77.2)
Previous hysterectomy	30 (9.6)
Underlying disease	
Hypertension	118 (37.8)
Diabetes	33 (17.0)
Respiratory disease	4 (1.3)
Neurologic disease	5 (1.6)

Table 2. Pelvic floor symptoms and POP staging

Pelvic floors symptom/POP staging	n (%) (total = 312 subjects)
Pelvic floor symptoms	
SUI only	67 (21.5)
UUI only	29 (9.3)
Mixed UI (SUI and UUI)	154 (49.4)
POP	192 (61.5)
Anal incontinence	161 (51.6)
Dyspareunia	185 (59.3)
POP staging	
0	13 (4.2)
I	42 (13.5)
II	159 (51.0)
III	79 (25.3)
IV	19 (6.1)
Compartment of prolapse	(n = 299)
Anterior	290 (96.9)
Apical	261 (87.3)
Posterior	241 (80.6)

SUI = stress urinary incontinence; UUI = urgency urinary incontinence; UI = urinary incontinence; POP = pelvic organ prolapse

Table 3. PISQ-12 scores in women with pelvic floor dysfunction

Variables	PISQ-12 scores mean ± SD	*p*-value
Menopausal status		0.83[a]
Premenopause	17.4±7.7	
Postmenopause	17.0±6.2	
Parity		<0.05[a]
Nulliparity	14.2±7.6	
Multiparity	17.3±6.4	
History of vaginal delivery		0.74[a]
Yes	17.1±6.0	
No	16.8±7.6	
Hysterectomy		0.88[a]
Yes	17.2±6.1	
No	17.0±6.5	
Dyspareunia		<0.01[a]
Yes	15.4±6.2	
No	18.3±6.5	
SUI		0.91[a]
Yes	17.1±6.6	
No	16.9±6.1	
UUI		0.06[a]
Yes	17.6±6.9	
No	16.2±5.7	
POP		0.33[a]
Yes	17.3±6.7	
No	16.6±5.9	
Anal incontinence		0.09[a]
Yes	17.6±7.1	
No	16.4±5.6	
POP staging		0.58[b]
0	15.3±3.7	
I	15.8±6.9	
II	17.3±7.0	
III	17.3±5.9	
IV	17.4±3.6	
Compartment of prolapse		0.11[b]
Anterior	14.8±7.3	
Apical	19.0±6.8	
Posterior	13.0±1.4	
Anterior and apical	16.1±7.5	
Anterior and posterior	14.2±5.1	
Apical and posterior	14.7±2.3	
Anterior, apical, and posterior	17.8±6.4	

PISQ = Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire; SUI = stress urinary incontinence; UUI = urgency urinary incontinence
[a] Chi-square test, [b] ANOVA model with Bonferroni' multiple comparison test

Discussion

Generally, PFD, which are POP, urinary incontinence, and AI, are thought to negatively affect sexual health. It may result from physical change or emotional impact of pelvic floor symptoms[5,15,16]. Common sexual complaints in women with incontinence problems are low desire and fear of coital incontinence[10,11]. Women with POP may have sexual dysfunction due to obstructed intercourse, vaginal laxity, anorgasmia, or vaginal dryness[8]. However, low self-esteem and altered body image related to POP may have an indirect effect on sexual function and satisfaction[17]. In addition, women with urinary and/or AI may experience urgency or incontinence during or after vaginal intercourse[8].

Regarding pelvic floor symptoms, this study showed no association between sexual function scores and SUI, UUI, prolapse and AI symptoms. This finding is similar to the report from Nygaard et al[6] and Handa et al[7] in 2004. However, it is different from previous studies that found significant incontinence and prolapse symptoms on sexual activity[10,18,19]. Moreover, pelvic floor symptom severity and POP stages are reported to be is negatively associated with sexual functioning[17,20,21]. The disagreeing findings may be attributable to cultural difference and severity of pelvic floor symptoms in different study population. However, health care providers should quantify the severity of bothersome pelvic floor symptoms in affected women and further ask questions about sexual problems they might have. Several validated questionnaires can be used in adjunct with history taking and physical examination to help identify women who suffer from sexual problem. To do so, they would be directed to appropriate treatment resulting in improving their quality of life. Considering degree and compartment of POP, this study did not find a significant difference in PISQ score among prolapse stage or compartment of prolapse. This is in agreement with previous studies that concluded that prolapse severity is not associated with sexual symptoms[21-24].

Sexual pain or dyspareunia is classified as one of female sexual disorders. It can disturb normal sexual response and have a negative effect on sexual satisfaction[25]. Interestingly, about 60% of women in this study reported dyspareunia. Among these women, lower PISQ score indicated poorer sexual function. Basically, sex steroids such as estrogen, progestin, and androgen influence sexual function. Depletion of estrogen in postmenopausal women may lead to decreased libido, vaginal dryness, and dyspareunia[8]. Although menopausal status is considered a factor influencing sexual function as mentioned[24,26], this study did not demonstrate different sexual function scores between premenopausal and postmenopausal women.

The strength of our study is that sexual function was assessed by the PISQ-12, a highly reliable condition specific questionnaire for sexual function.

This type of questionnaire is more sensitive than general questionnaires for detecting differences in sexual function that are due to pelvic floor symptoms. Another strength is that severity and compartment of POP of all women in the study underwent objective clinical assessment using the standard International Continence Society POP-Q System. Nevertheless, this study carries several limitations that should be considered. Firstly, it was a retrospective chart review. Secondly, this study included only sexually active women, therefore, we could not evaluate whether sexually inactive women abstain from sexual intercourse because of pelvic floor symptoms or not. Thirdly, the subjects included in the study were the patients attending a urogynecology clinic. They are a selected group of patients whom their pelvic floor symptoms are severe enough to seek medical consultation. Therefore, care must be taken in generalizing the results of this study to women with mild pelvic floor symptoms. Further cross-sectional or longitudinal studies to determine cause and effect of PFD on sexual function among general population and impact of specific variables on female sexual function are required.

Conclusion

PFD may have an impact on sexual function. Severity of POP and presence of pelvic floor symptoms are not the predicting factors of sexual impairment. In clinical practice, health care provider should ask about the effect of troublesome pelvic floor problems on their quality of life and assess for sexual concerns in women with PFD.

What is already known on this topic?

The pathophysiology of sexual dysfunction related to pelvic floor symptoms has not been well understood. The relationship between PFD and sexual function remains conflicted.

What this study adds?

Pelvic floor symptoms and severity of POP are not associated with sexual function. Sexual pain or dyspareunia is an important contributing factor to sexual impairment.

Potential conflicts of interest

The authors declare no conflict of interest.

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