ORIGINAL ARTICLE

SEXUAL PAIN DISORDERS AMONG MALAY WOMEN WITH TYPE 2 DIABETES MELLITUS IN MALAYSIA

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Abstract

Objectives: **This study aims to determine the prevalence and associated factors of sexual pain disorders among Malay women in Malaysia with type 2 diabetes mellitus.** ***Methods:*** **This is a cross-sectional study involving 347 women (174 non-diabetic and 173 diabetic subjects) who attended the diabetic clinic in a university hospital. Sexual pain disorders were assessed using the Pain sub scale of Malay Version of the Female Sexual Function Index (MVFSFI). Socio-demographic information of the subjects was collected with a pre-designed questionnaire.** ***Results:*** **Prevalence of sexual pain disorders among Malay women with type 2 diabetes mellitus was 10.4% and the control group was 9.2% but the difference was not statistically significant (p > 0.05). Multivariate logistic regression analysis did not find any relevant associated factor with sexual pain disorder.** ***Conclusion:*** **Sexual pain disorders among Malay women were not dependent on the diabetic status. Further studies with different population of diabetic patients are needed to confirm the results.** ***ASEAN Journal of Psychiatry, Vol. 15 (1): January – June 2014: 1-7.***

Keywords: Sexual Pain, Malay Women, Type 2 Diabetes Mellitus

Introduction

Sexual pain disorders are one of the female sexual dysfunctions that may impair sexual and interpersonal and emotional functioning for most women worldwide. An international consensus committee recently divided sexual pain disorders into three categories, which are dyspareunia, vaginismus and non-coital pain disorder [1]. Dyspareunia is defined as persistent or recurrent pain with attempted or complete vaginal entry or penile–vaginal intercourse [2]. As for vaginismus, it is defined as persistent difficulties to allow vaginal entry of a penis, finger, and/or any object, despite the woman's expressed wish to do so. There are variable involuntary pelvic muscle contraction, (phobic) avoidance, and anticipation/fear/experience of pain. Structural or other physical abnormalities must be ruled out/addressed [2]. Non-coital sexual pain disorder is recurrent or persistent genital pain induced by non-coital sexual stimulation.

Sexual pain disorders may develop from a number of biological factors such as hormonal, inflammatory, muscular, neurologic, vascular and connective causes [3]. Increased risk of vaginal infections and/or decreased vaginal lubrication has been postulated to be the cause of higher prevalence of dyspareunia among women with diabetes mellitus [4,5]. Presence

of neuropathy, vascular complications, and concomitant with other's sexual dysfunctions such as loss of desire, arousal disorders, and orgasmic difficulties make women with diabetes mellitus more likely to experience sexual pain during intercourse [6,7].

Dyspareunia or painful intercourse is a common symptom among sexually active women. A random population survey (GSSAB) in 2001-2002 involving nine Asian countries found that sexual pain disorders among women are less common compared to other dysfunctions [8]. However, a study done in 2007 among general population at a primary care clinic in Kuala Lumpur, Malaysia found that sexual pain disorder is the second most common sexual dysfunction (67.8%) after sexual desire disorder [9]. In women with type 2 diabetes mellitus, several studies have shown no significant risk of dyspareunia [10,11,12], while others have shown a significantly higher prevalence of dyspareunia with rates from 4%[6] to be as high as 42% [13]. Despite the inconsistent results and knowing that women with diabetes mellitus are prone to experience sexual pain disorders, this study intends to measure the prevalence and associated factors of sexual pain disorders among diabetic patients in one of the university hospitals in Malaysia.

Methods

This is a cross-sectional study aimed to determine the prevalence and associated factors of sexual pain disorders among women with diabetes mellitus. According to previous studies [13, 9], sample size of 347 sexually active women is adequately enough to achieve the objectives. The study was carried out at the Universiti Sains Malaysia Hospital for 10 months. They were grouped into ~~a~~ diabetic (173) and non-diabetic groups (174). Systematic random sampling was used in this study. Diabetic women were those attending the Diabetic clinic and non-diabetic women were those attending outpatient clinics for other medical illnesses. Women with those known psychiatric problem, who are pregnant or in post partum period, post menopausal (physiological/surgical), on hormonal contraception and known to have chronic illnesses such as stroke, end-stage renal disease, and chronic immobilization (bedridden, limbs amputation) were excluded. The study was approved by the ethics committee of the university. Written informed consent was obtained from all patients before enrolment in the study.

All women were given a structured questionnaire that consists of two parts. Part I is the patient socio demographic and marital profile, while part II is the Malay Version of Female Sexual Function Index (MVFSFI). The MVFSFI was developed and validated in 2007 [14]. This questionnaire contains 19 questions and categorizes sexual dysfunction into the domains of desire, arousal, lubrication, orgasm, satisfaction, and pain. The questionnaire assessed participant's sexual function during the last four weeks. The sensitivity and specificity of MVFSFI were 99% and 97% respectively. The sensitivity and specificity for each domain were also established in which sexual pain disorders had 86% sensitivity and 95% specificity. Pain was assessed as frequency during and after sexual activity and level of pain over the past four weeks. Each question in the questionnaire has six options for a patient to choose the most likely answer representing their sexual pain or discomfort during vaginal penetration within four weeks prior to the time of answering the questionnaire. The score for each answer is given from 0 to 5. A total score of ≤ 7 was used as the cut-off point for the sexual pain disorders. Those who scored less than the cut-off point were indicated to have sexual pain disorders.

Statistical analysis was done using the SPSS version 12 software. The prevalence of sexual pain disorders was obtained through descriptive analysis. Simple logistic regression was used as a screening in selection of variables for further analysis. All variables with *P* value less than 0.3 and clinically significant variables were included in Multiple Logistic regression. This *P* value was set larger than the level of significance to allow for more important variables to be included into the model. A *P* value $\leq$ 0.05 was considered statistically significant in Multiple Logistic regression.

Results

Table 1 shows the socio-demographic and

clinical characteristics of the participants. A total of 173 women with diabetes mellitus and 174 women without diabetes mellitus participated in the study. The mean age for women with diabetes mellitus and without diabetes mellitus was 42.32 ± 4.76 and 40.98 ± 4.76 years respectively. The mean fasting blood sugar level among women with diabetes mellitus was 9.11 ± 3.80 mol/l.

The prevalence of sexual pain in women with diabetes mellitus in this study was 10.4% and woman without diabetes mellitus was 9.2%. There was no significant difference of sexual pain disorders between the two groups (Table 2).

A total of 197 (50%) participants had primary school education and 174 (50%) are unemployed. There was no significant difference with regards to education level and employment status between women with diabetes mellitus and without diabetes mellitus ($p > 0.05$). In women with diabetes mellitus, 156 (90%) were married more than 11 years, and for women without diabetes mellitus is 132 (76%). Frequencies of sexual intercourse for both groups are also similar in which majority of them had sexual intercourse 1-2x/week (Table 1). There was no association between duration of marriage and sexual pain between groups.

One hundred and forty two (82%) women with diabetes mellitus were obese. Hypertension and dyslipidemia were common medical illnesses that represent 59.5% and 47.4% respectively among women with diabetes mellitus. Multivariate analysis showed that obesity, hypertension and dyslipidemia did not have a significant association on sexual pain disorders among women with diabetes mellitus.

Table 1. Socio-demographics and clinical characteristic of participants with and without Diabetes Mellitus (DM)

Variable	Women with DM (n=173)		Women without DM (n=174)	
	Mean (SD)	n (%)	Mean (SD)	n (%)
Age (years)	42.32 (4.76)		40.98 (4.76)	
≤40		57(32.9)		80(46.0)
>40		116(67.1)		94(54.0)
Fasting blood sugar (mmol/L)	9.11(3.80)		4.60(0.54)	
Education level				
Primary		96 (55.5)		101 (58.0)
Secondary		56 (32.4)		65 (37.4)
Tertiary		21 (12.1)		8 (4.6)
Employment				
Employed		75 (43.4)		98 (56.3)
Unemployed		98 (56.6)		76 (43.7)
Monthly Family Income (RM)				
<1000		13 (7.5)		6 (3.4)
1000-1999		50 (28.9)		44 (25.3)
2000-3000		49 (28.3)		51 (29.3)
>3000		61 (35.3)		73 (42.0)
Age of Husband (years)				
<40 years		21 (12.1)		46 (26.4)
41-50 years		102 (59.0)		101 (58.0)
>50 years		50 (28.9)		27 (15.5)
Duration of marriage (year)				
≤10 years		17 (9.8)		42 (24.1)
11-20 years		77 (44.5)		77 (44.3)

> 20 years		79 (45.7)		55 (31.6)
Frequency of Sexual Intercourse				
1-2x/month		37 (21.4)		34 (19.5)
1-2x/week		122 (70.5)		109 (62.6)
≥ 3x/week		14 (8.1)		31 (17.8)
Body Mass Index Category				
Underweight		5(2.9)		4(2.3)
Normal		26(15.0)		50(28.7)
Pre-Obese		65(37.6)		74(42.5)
Obese I		61(35.3)		38(21.8)
Obese II		9 (5.2)		7(4.0)
Obese III		7(4.0)		1(0.6)
Hypertension				
Yes		103(59.5)		36(20.7)
No		70(40.5)		138(79.3)
Dyslipideamia				
Yes		82(47.4)		21(12.1)
No		91(52.6)		153(87.9)
Asthma				
Yes		3(1.7)		9(5.2)
No		170(98.3)		165(94.8)

Table 2. Prevalence of sexual pain disorders between Malay women with and without based on Malay Version of Female Sexual Function Index (MVFSFI)

	N	Sexual Pain Disorder				
		Absent n (%)	Present n (%)	Chi-square	*p* value	OR (95% CI)
Non-diabetic	174	158 (90.8)	16 (9.2)			1.147
Diabetic	173	155 (89.6)	18 (10.4)	0.144	0.705	(0.564-2.330)

OR=odds ratio; CI=confidence interval

Table 3. Multivariate analysis of the associated factors for female sexual pain disorders in the subjects (N=347)

	□	S.E.	*p* value	Adjusted OR	95.0% C.I.	
					Lower	Upper
Age (years)	0.094	0.075	0.210	1.099	0.948	1.273
Employment No Yes	-0.906	0.463	0.051	0.404	0.163	1.003
Education Primary Secondary and above	-0.648	0.428	0.130	0.523	0.226	1.211
Age of Husband age-(years)	0.012	0.049	0.803	1.012	0.920	1.114
Duration of marriage (years)	-0.016	0.047	0.738	0.985	0.899	1.079
BMI	0.017	0.043	0.687	1.017	0.936	1.106
Hypertension No Yes	-1.208	0.494	0.014	0.299	0.114	0.787
Dyslipidemia No Yes	-0.786	0.439	0.073	0.456	0.193	1.077

S.E. = standard error; OR=odds ratio; CI=confidence interval

Only relevant clinical and demographic factors were included in the multivariate analysis.

Discussion

There is extensive literature on the prevalence of sexual pain disorders but there are no consistent results among women with type 2 diabetes mellitus. Prevalence of sexual pain disorders among women with type 2 diabetes mellitus in our study was lower (10.4%). A similar result was also observed by other studies [6, 15]. However, prevalence of sexual pain disorders among general population in Malaysia was higher (67.6%) [9] including studies done among women with diabetes mellitus internationally [13,16,17,18]. Several possible explanations for inconsistency in prevalence were proposed such as study design and population differences [6, 13, 16, 17, 15]. No significant difference of sexual pain disorders was found in this study between women with diabetes mellitus and without diabetes mellitus. This finding is in concordance with other studies [12, 13, 16, 17]. Other's studies found that there was significant difference of pain disorders among women with diabetes mellitus and control subjects [19, 20]. A few studies have shown that sexual pain disorders is significant in diabetic women who have a marital relationship problem with their husband compared to non-diabetic women [13,20]. Unfortunately, marital relationship problem was not assessed in this study as well as other studies [12,16,17]. Marital relationship problem has been suggested as a major cause of dyspareunia but whether the marital relationship is a secondary cause of sexual difficulty is still uncertain [21], and further studies are needed to determine this relationship. Reduced sensation of pain among women with type 2 diabetes mellitus was also found to be a cause of low prevalence. Improvement in diabetes management as fasting blood sugar of less than 10mmol/l could be one of the contributing factors for lower prevalence of sexual pain disorders in this study.

Dyspareunia is a common symptom from variety of causes and the prevalence from various degrees of dyspareunia[13,16] (vaginal discomfort, vaginal dryness) was higher, especially among postmenopausal diabetic women[22] as diminished estrogen levels are associated with decreased lubrication and vaginal atrophy. Although women with diabetes mellitus are at high risk of having sexual pain disorders, specific associated factors in each category (dyspareunia, vaginismus and non-coital pain disorder) are difficult to identify in this study. Three items in the FSFI's questionnaire asking women about the experience of discomfort or pain during vaginal penetration in the past four weeks might not be truly precise for either dyspareunia, vaginismus or non-coital pain disorder. No significant associated factor with sexual pain disorders was found during this study. However, the Global Study of Sexual Attitudes and Behaviors (GSSAB) reported that younger age group, poor health, infrequent sex and low expectations for the future of relationship are the factors associated with pain disorder among women aged 40 to 80 years old[8]. Another study also thought that younger age group was clinically a risk factor for sexual pain disorders even though statistically not significant [16]. It is supported by knowing that not all women with dyspareunia have physical findings to state that they have sexual pain disorders [23]. In diabetes mellitus, presence of vaginal dryness, infection and other's urogenital problems make them prone to get dyspareunia. There were a few other studies that share similar findings [16,23]. Psychological symptoms such as depression and anxiety are also found to be significantly associated with dyspareunia in diabetic patients [6,22].

As a conclusion, the prevalence of sexual pain disorders in women with diabetes mellitus and without diabetes mellitus in this study is lesser than the previous studies that have been performed in the general population in Malaysia. However, there is no significant difference between these two groups. This result implies that having diabetes is not a risk factor for getting sexual pain disorders, especially among Malay women. Limitation of the study includes the inability to document the marital relationships and psychological status of studied population. These factors might support the fact that risk of having sexual pain is not related to diabetes. The present study also did not find any significant associated factors in relation to sexual pain disorders. Further studies with different population of diabetic patients are needed to confirm the results.

Acknowledgements

We would like to thank the patients and also the research committee at Universiti Sains Malaysia, Kelantan which had approved and supported this research financially.

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Received: 20 March 2013 Accepted: 2 July 2013