



## Orgasmic dysfunction among Malay diabetic women in Malaysia

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### Abstract

**Objectives:** The present study aimed to determine the prevalence and associated factors of orgasmic dysfunction among Malay women with type 2 diabetes mellitus in Malaysia.

**Methods:** This cross-sectional study involved 347 women (174 non diabetic and 173 diabetic subjects) who attended the diabetic clinic in a university hospital. Orgasmic dysfunction was assessed using the orgasmic subscale of Malay Version of the Female Sexual Function Index (MVFSFI). Sociodemographic information of the subjects was collected with a pre-designed questionnaire.

**Results:** Prevalence of orgasmic dysfunction among Malay women was 13.3% and 10.3% in type 2 diabetes mellitus and control group, respectively. However, the difference was not statistically significant. Multivariate logistic regression analysis showed that unemployment (Adjusted Odds Ratio, AOR = 2.69, 95% CI = 1.22, 5.97) and lower academic status (AOR = 0.35, 95% CI = 0.17, 0.72) were significantly associated with sexual orgasmic dysfunction in diabetic women.

**Conclusion:** Orgasmic dysfunction was highly prevalent among the Malay women regardless of the diabetic state. It is recommended that orgasmic dysfunction in women with diabetes should be assessed during routine clinical health visit to the hospital for early treatment.

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### 1. Introduction

Sexual orgasmic dysfunctions in women are characterized by persistent or recurrent delay in or absence of orgasm following a 'normal' sexual excitement phase. This results in distress or interpersonal difficulties (DSM-IV-TR 2000). It is caused by sexual inexperience or lack of sufficient stimulation and is common in women who have never experienced orgasm. It can have a tremendous impact on the individual's quality of life, relational satisfaction and general well-being.

Sexual orgasmic dysfunction is the second most frequently reported women's sexual problem according to the National Social and Health Life Survey [1]. The same research study involving 1,749 U.S women, described 24% of the individuals to suffer from orgasmic difficulties. Findings from the Global Study of Sexual Attitudes and Behaviors (GSSAB) showed that prevalence of sexual orgasmic dysfunction was higher in Asian countries compared to other regions of the world, ranging between 30–42% and 18–26%, respectively [2].

In Malaysia, the prevalence of female sexual orgasmic dysfunction among general population is higher (51.9%) [3] compared to other Asian countries such as Hong Kong, Korea, Taiwan, Thailand, and Singapore, and it ranges between 10%–30% [4]. In diabetes, the prevalence of female sexual orgasmic dysfunction has been reported to be higher compared to the non diabetic, ranging between 10–84% [5,6].

The aetiology of female sexual orgasmic dysfunction tends to be multifactorial as it related to anatomical, physiological, psychological, medical, social, and cultural

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factors. Amongst them, psychosocial factors are the most commonly discussed in relation to female orgasmic dysfunctions. In Malaysia, age more than 45 years, being a non-Malay, having lower academic status, longer marriage, having more children, married to an older husband, and being at menopausal state are the most significant factors associated with female sexual orgasmic dysfunction [3].

In diabetic women, neuropathy, vascular impairment and psychological factors have been implicated in the pathogenesis of sexual orgasmic dysfunction. However, there are conflicting reports because of difficulties in quantification of the sexual response in diabetic women [7].

There is paucity of data especially locally on the female sexual orgasmic dysfunction among type 2 diabetes. The present study aimed to determine the prevalence and associated factor of female sexual orgasmic dysfunction among type 2 diabetes mellitus.

## 2. Material and methods

### 2.1. Subjects

Women aged 18 years and above were recruited from the diabetic clinic and outpatient clinic of Universiti Sains Malaysia, Kelantan. The inclusion criteria were: married women with heterosexual relationship for the preceding six months and those who had regular menses. The diagnosis of diabetes was based on WHO criteria. They were divided into 2 groups: diabetic and non diabetic group. We excluded individuals from both groups if the subjects had psychiatric and chronic illnesses such as stroke, end-stage renal disease and chronic immobilization (bedridden, limbs amputation), pregnant or postpartum, post-menopausal and even those were on hormonal contraceptives.

### 2.2. Instruments

Socio-demographic information of the subjects was collected with a pre-designed questionnaire. Systematic random sampling in the ratio of 1: 3 based on the appointment list at Primary Care Clinic and Diabetic Clinic was applied.

Female sexual orgasmic dysfunction was assessed using the orgasm subscale of Malay Version of the Female Sexual Function Index (MVFSFI). Validated Malay Version of the Female Sexual Function Index (MVFSFI) was used for this study [3]. MVFSFI consists of 19 questions and categorizes into the domains of desire, arousal, lubrication, orgasm, satisfaction, and pain. Each question in the questionnaire has five to six options for a patient to choose the most likely answer representing their sexual function within four weeks prior to the time of answering the questionnaire.

Orgasmic dysfunction was assessed as frequency, level of difficulty and satisfaction to reach orgasm during sexual activity with three questions. A total score of  $\leq 4$  was used as the cut-off point for the sexual orgasmic dysfunction. Ethical

approval was obtained from Research and Ethics Committee of Universiti Sains Malaysia, Kelantan and subjects provided written informed consent prior to participation in this study.

Table 1  
Socio-demographics and marital characteristic of participants.

Variable	Diabetic		Non-Diabetic	
	Mean (SD)	N (%)	Mean (SD)	N (%)
Age (year)				
≤40	42.32 (4.76)	(32.9)	40.98 (4.76)	(46.0)
>40	57 116	(67.1)	80 94	(54.0)
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)
Husband age (year)				
<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				
1–2/month	37	(21.4)	34	(19.5)
1–2/week	122	(70.5)	109	(62.6)
≥3/week	14	(8.1)	31	(17.8)
Parity				
0	7	(4.0)	8	(4.6)
1–2	35	(20.2)	34	(19.5)
3–5	101	(58.4)	103	(59.2)
>5	30	(17.3)	29	(16.7)
Total cholesterol (mmol/L)	5.06	(1.17)	5.33	(1.08)
Triglyceride level (mmol/L)	1.73	(0.98)	1.47	(0.73)
Low density lipoprotein (mmol/L)	2.89	(1.00)	3.04	(1.00)
High density lipoprotein (mmol/L)	1.50	(0.38)	1.67	(0.58)
Fasting blood sugar (mmol/L)	9.11	(3.80)	4.60	(0.54)
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)
Dyslipidemia				
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)

### 2.3. Statistical analysis

SPSS version 12 was used for all analyses. The prevalence of sexual orgasmic dysfunction 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 0.1 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 in the model. A  $p$  value  $\leq 0.05$  was considered statistically significant in Multiple Logistic regression.

### 3. Results

A total of 347 women participated in the study. One hundred seventy three women were in the type 2 diabetic group and one hundred seventy four were included in the non-diabetic group based on WHO criteria. Their socio demographics, marital and medical characteristic were shown in Table 1.

There were no significant differences between the prevalence of sexual orgasmic dysfunction among Malay women with type 2 diabetic compared to the non-diabetic group (13.3% vs. 10.3%;  $\chi^2 = 0.725$ ,  $p = 0.395$ ).

Clinical relevant factors for sexual orgasmic dysfunction such as age, employment, duration of marriage, husband's age, body mass index, presence of diabetes, hypertension, hyperlipidemia and education level were included in the Multiple Logistic regression (shown in Table 2). Unem-

ployment and having lower academic status were highly associated with sexual orgasmic dysfunction in Malaysian Malay women.

### 4. Discussion

Diabetes is known to cause multiple medical complications, including sexual orgasmic dysfunction. Women with diabetic might experience loss of libido following the diagnosis of diabetes or during a period of illness, resulting from the damage of vascular and autonomic nervous system. This leads to changes in sexual genital pathways such as orgasmic dysfunction [8].

The diagnosis of orgasmic dysfunction is based on the clinician's judgement that the woman's orgasmic capacity is less than reasonable for her age, sexual experience, and the adequacy of sexual stimulation she receives [9]. The overlapping nature of the different phases of the female sexual response cycle may influence the ability and experience of women to achieve orgasm [10]. The use of psychometric tools in assessing orgasmic dysfunction is the most valid way in women in a naturalistic setting [11]. The prevalence of sexual orgasmic dysfunction is inconsistent all over the world including Asian countries [4,7]. In Malaysia, the prevalence of female sexual orgasmic dysfunction among women in the primary care population has been reported to be 51.9% [3]. There is evidence to suggest that diabetic women experience significantly higher rate of orgasmic dysfunction than non diabetic women [12].

Table 2  
Multivariate analysis of the associated factors for female sexual orgasmic dysfunction in the subjects (N = 347).

	$\beta$	S.E.	$p$ -value	AOR	95.0% C.I.	
					Lower	Upper
Age (years)	-0.042	0.047	0.507	0.958	0.846	1.086
Employment	0.990	0.270	<b>0.015*</b>	2.693	1.215	5.966
No						
Yes						
Duration of marriage (years)	0.008	0.030	0.852	1.008	0.928	1.094
Husband age (years)	0.036	0.030	0.350	1.037	0.961	1.118
BMI	0.004	0.026	0.918	1.004	0.933	1.080
Diabetes mellitus	0.053	0.710	0.890	1.055	0.494	2.250
Yes						
No						
Hypertension	-0.197	0.301	0.633	0.821	0.366	1.842
No						
Yes						
Hyperlipidemia	-0.0009	0.301	0.983	0.992	0.451	2.178
No						
Yes						
Education	-1.063	0.710	<b>0.005*</b>	0.345	0.165	0.721
Primary						
Secondary and above						

Only relevant clinical and demographic factors are included in the multivariate analysis; S.E. = standard error; AOR = adjusted Odds Ratio, 96% C.I. = 95% Confidence Interval.

\* Statistically significant.

In the present study, the prevalence of sexual orgasmic dysfunction among type 2 in the diabetic and the non diabetic group was 13.3% and 10.3%, respectively. More than sixty percent of diabetic women were more than 40 years old. Both of diabetic and non diabetic group had lower level of education background (tertiary of 12%). More than half of the diabetic women were unemployed with their monthly family income more than 1000 Ringgit Malaysia (1 USD = 3.2 Ringgits). Most of the diabetic women were married for more than 10 years. Majority of their husband were more than 40 years old and sexually active, with frequency of sexual intercourse of 1–2 times per week. Seventy two percent of the diabetic women were categorised as pre-obese and obese. They were also having other medical illness such as hypertension and hyperlipidemia.

There were 2 major findings that could be highlighted in this study. The prevalence of orgasmic dysfunction among diabetic and non diabetic women in this study was low compared to an earlier study performed among women with and without existing medical illness/illnesses which reported the prevalence to be 59.1% [3]. However, another study among insulin treated showed that the 11% of diabetic women reported orgasmic dysfunction [13]. This was similar to another research study which revealed that the prevalence of sexual orgasmic dysfunction was 15% [14]. In a group of diabetic women with no other systemic diseases, it was found that 46% of diabetic women reported orgasmic dysfunction, whereas no women in the control group experience orgasmic dysfunction [15]. The prevalence of orgasmic dysfunction was higher in younger diabetic women without other health problems [6]. However, in this study, there was no significant difference in prevalence of orgasmic dysfunction between diabetes and non diabetes group. A study in Jordan among diabetic women, aged between 23–68 years also reported no significant differences between diabetic and non diabetic group even though the prevalence of orgasmic dysfunction was much higher compared to the present study [5]. Another study done on the Iranian diabetic women, aged between 20–55 years, also revealed similar findings [16]. Probably, the age range of the diabetic women in our study (26–54 years) was comparable with the other two studies.

The orgasmic dysfunction among the diabetic women in the present study was found to be significantly associated with lower academic achievement and unemployment compared to the non diabetic women. Recent studies have shown that orgasmic dysfunction is more common in women with lower education level compared to the well-educated women [3,17]. However, study among 127 married women with type 2 diabetes revealed that poor education and absence of occupation were not associated with sexual dysfunction [18]. It may be possible that lower education level was related to lower rate of body awareness and being more influenced by cultural factors such as shyness, embarrassment and restrictive sexual education. Embarrassment was cited as a reason for most of the Malaysian's

women (96.3%) not seeking medical help for their sexual problems [4]. Presence of vascular involvement in diabetes accompanied with problems in the excitement phase and lower academic achievement makes diabetic women more vulnerable to orgasmic dysfunction. In this population studied, unemployment also showed to have an impact on the sexual orgasm. The present finding is in accordance with previous studies which showed that positive correlation between deterioration in economic position and sexual dysfunction [19]. However, a research in Egypt, showed that work status did not show any impact on the sexual function in the population because of the large difference in the economic situation of their studied population [20]. Another study performed on 81 insulin treated diabetic women also revealed no association between work status and sexual dysfunction, probably psychogenic origin was the main cause of sexual dysfunction [14].

The present study had several limitations. Firstly, the psychological factors, for example, stress, depression and anxiety state were not investigated although it is known that these factors may alter female sexual response cycle [10,21,22]. Secondly, this study did not look into the marital relationship and sexual functioning of the male partners. This may have influenced the respondents' sexual functioning. A study by Yeoh et al. [23] showed that males' sexual function has great impact on the sexual functioning of their female partners. Communication between partners seems to play an important role in both the quality of the marital relationship and level of sexual dysfunction. Studies have demonstrated that women with orgasmic dysfunction reported experiencing significantly greater discomfort with communication about sexual activities [24–26]. Another limitation was the setting where this study was done and the accuracy of the information given as they only could report based on their last four weeks of sexual activity.

## 5. Conclusion

Sexual orgasmic dysfunction is highly prevalent among the Malay women regardless of the diabetic state. Unemployment and low academic status were highly associated with sexual orgasmic dysfunction in Malaysian Malay women. These findings reinforce the importance of asking and discussing sexual history especially middle age women who are unemployed and having lower academic achievement during their visit to primary health care clinic. The clinician needs to assess the frequency of orgasm, the situation in which orgasmic dysfunction occurs and whether orgasmic dysfunction is primary or secondary cause.

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