

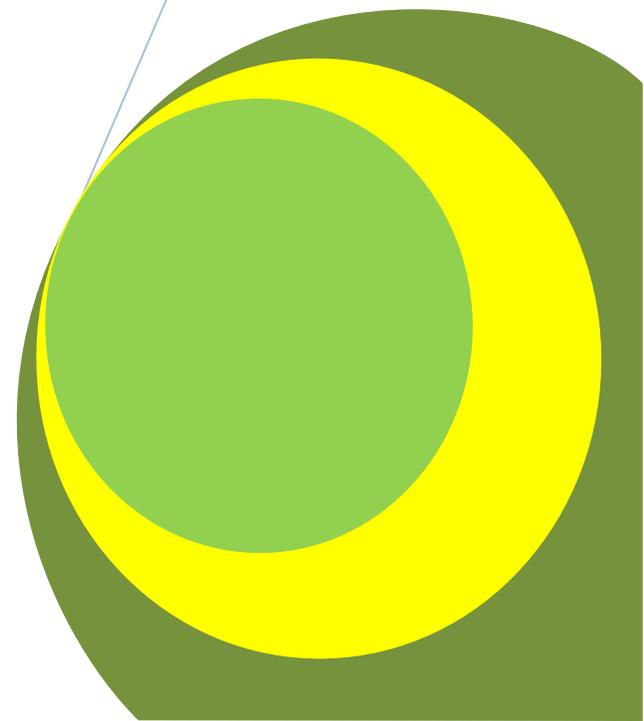
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Sexual Dysfunction among Patients with Diabetes Mellitus

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Research Article

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ABSTRACT

Sexual dysfunction can impact a person's ability to form or sustain intimate relationships and co morbidity between sexual dysfunction and anxiety as well as depression has been reported. Yet epidemiological, etiological, and health association to sexual dysfunction has only begun to be explored in Kenya.

Aim: To determine the prevalence, types of sexual dysfunction and their socio demographic correlate in diabetic patients.

Design: Descriptive cross- sectional study

Setting: The study was conducted at the outpatient diabetic clinic of Kenyatta National Hospital. This is the main referral hospital in Kenya.

Methods: A total of 350 participants were enrolled in the study. The Female Sexual Function Index (FSFI) and the International Index of Erectile Function (IIEF) questionnaires were used to evaluate sexual dysfunctions in female and male patients respectively.

Results: The participants were composed of 164 females aged between 18-74 years and 186 males aged between 19- 100 years. In males, prevalence of sexual dysfunctions were: erectile dysfunction (68.8%); orgasmic dysfunction (48.4%); sexual desire (81.7%); intercourse satisfaction (86.6%) and overall satisfaction (68.4%).The female sexual dysfunction was 36.6% and was categorized as mild (17.1%); moderate (18.3%) and severe (1.2%).

Conclusion: Diabetic patients have a high prevalence of sexual dysfunction

Key words: Sexual dysfunction, Diabetes mellitus, erectile dysfunction

INTRODUCTION

Sexual dysfunction is defined by WHO as the various ways in which an individual is unable to participate in a sexual relationship as he or she wishes. Sexual dysfunction affects both men and women. Female sexual dysfunction covers four aspects of women sexuality; desire, arousal, orgasm, and pain (dyspareunia) Manolis (2008). Sexual dysfunction causes significant physical, emotional, and interpersonal distress in patients. DSM-IV-TR identifies four phases of the sexual response cycle: desire, excitement (arousal), orgasm, and resolution. Sexual dysfunction is categorized according to the first three of these phases in addition to sexual pain, and DSM-IV-TR lists two sexual disorders in each one of them IsHak et al. (2005).

Doctors dealing with sexual dysfunction should evaluate both the psychological and organic causes and dual management should be provided. Perelman (2003), and Zemel (1988), noted that the diabetic hypertensive patient should be evaluated for sexual dysfunction, and appropriate therapy, including changes in medication or referral for sex counseling, should become routine in clinical care.

In Kenya, no studies have been done in regard to sexual dysfunction in diabetic patients. A study done in Africa reported a high prevalence of erectile dysfunction (ED) among populations with chronic diseases, including diabetes mellitus and hypertension Levinson (2003). Reportedly, medical care for erectile dysfunction is underprovided, profoundly altering the quality of life of the patients Balde et al. (2006).

Sexual dysfunctions are highly prevalent, affecting 43% of women and 31% of men and have been found to significantly affect interpersonal functioning and overall quality of life in both men and women Rosen (2007). The world data indicates that the prevalence of erectile dysfunction in the general population, ranges from 15% in Brazil to 74% in Finland Manolis (2007).

Diabetes mellitus affects 3 - 6% of the general population. Studies have shown a high prevalence of sexual dysfunction among diabetes patients. Fedele (2005), found an almost three times higher prevalence (36%) of ED in men with diabetes, than in the general population. Another study done in the U.S.A Bacon et al. (2003), on prevalence of ED among men with diabetes (45.8%), showed a nearly double prevalence as compared to that of men without diabetes (24.1%). In the same study, men with more recent diabetes diagnosis reported better erectile function than men diagnosed more than five years in the past.

Sexual dysfunction affects the quality of life of the person and their sexual partner Manolis & Doumas (2008). Sexual function is an important component of patient's quality of life and subjective well-being. Data indicates that sexual problems are widespread and adversely affect the mood, well-being, and interpersonal functioning of the person. ED is perhaps the most commonly recognized and treated sexual dysfunction. It affects 30% of men between 40 to 70 years of age DeBusk et al. (2000). Chronic diseases like diabetes with their complications may affect marital adjustment and health of the couple, leading to dissatisfaction with the marriage and marital relationship. Therefore sex therapy, psychotherapy and couple therapy would be a vital component of treatment in these patients Ahmadi et al. (2007).

Prevalence and Predictors indicated that sexual dysfunction is an important public health concern, and that emotional problems are likely to contribute to the experience of these problems Laumann et al. (1999). In view of the overall quality of life, the field of mental health would be of significant value to the patients.

The most common dysfunction amongst women is decrease in sexual desire reported by approximately a third of the women. The most common dysfunctions amongst men are erectile dysfunction and premature ejaculation. Despite the importance and high prevalence of sexual dysfunction, most sufferers do not seek help, either due to feelings of embarrassment or because they do not view it as a medical problem Zemishlany & Weizman, (2008). The aetiology of diabetic sexual dysfunction is multi-factorial and commonly includes both organic and psychogenic factors. Psychogenic factors are implicated more than was once thought and exploration of these factors can teach patients to deal with their fears and achieve good disease acceptance Harland & Huws (1997), Liane et al. (1991). Research has suggested a vascular origin of sexual dysfunction in the majority of patients, possibly due to atherosclerotic lesions in the genital arterioles that result in decreased blood flow Manolis et al. (2007), Zemel (1988), Heiman (2001).

In studies done in the western countries in regard to diabetes, prevalence rates of sexual dysfunctions have been noted to be high Lewis et al. (2004), Brant et al. (2007), Parazzini et al. (2006), Mezones — Holguin et al. (2008) & Fedele. (2005). In developing countries data on the prevalence of erectile dysfunction is scarce, with the few studies done indicating a high prevalence of sexual dysfunctions Shaeer et al. (2003), Unadike et al. (2009), Olarinoye. J & Olarinoye A (2008), Berrada (2003).

Monda (2009), on sexual dysfunction on women in Kenya, noted that chronic illnesses like diabetes can have a major impact on a woman's self-image and her sexuality, and that diabetes causes a reduction in lubrication and blood flow to the genitals and some medication can also affect her libido.

Erectile dysfunction compromises the overall quality of life (QOL) and is associated with loss of self-esteem, anxiety, and depression. Negative thinking about sexual ability results in increased anxiety, poorer sexual performance and, finally, any efforts to avoid sexual activity. The uncertainty may persist even after successful medical management of erectile dysfunction, as men still believe that they are reliant on treatment and experience a loss of manhood Manolis et al. (2007).

Diabetes mellitus, among the chronic conditions, is on the increase in the society and due to associated complications of which sexual dysfunction is one; the researcher will endeavor to show how prevalent it is in the society (Kenya).

METHODOLOGY

Consenting patients, who were attending the outpatient clinic and were aged 18 years and in a heterosexual relationship were recruited for the study. Excluded were those with other chronic conditions like hypertension. All patients attending the KNH diabetic clinic were sampled if they were only suffering from diabetes alone. This was

done until the required sample size was reached. To ensure that there was no double participant recruitment, the clinic attendance registers and patient record files were used.

Ethical approval was obtained from the Kenyatta National Hospital /University of Nairobi ethical review board. The participants were explained on the nature of the study, that it was voluntary and they could withdraw from the study at any point without loss of benefits. They signed an informed consent.

A socio - demographic data was administered to obtain information on socio demographic characteristics. The Female Sexual Function Index (FSFI) Rosen R. et al. (2000), was used to assess the key dimension of sexual function in women while the International Index of Erectile Function (IIEF) Questionnaire for the evaluation of male sexual function Rosen R. et al. (1997).

Data Analysis

Data was entered, cleaned and analyzed using SPSS version 12 and results presented in narratives and tables.

RESULTS

Socio-Demographic Variables

A total of 350 participants with diabetes mellitus, from 18 years and above were studied between the months of May and October 2010. There were 186 (53.1%) males and 164 (46.9%) females. , the mean age for male patients was 50.4 years while that of females was 44.6 years, ($P<0.001$), hence there was a statistically significant difference in the ages. The age range was 18 - 74 years and 19 - 100 years for females and males respectively.

The majority of the patients were married. However, the proportion of married patients was significantly higher among the male (90.3%) as compared to the female population (79.3%). Also, the female population was more likely to be cohabiting (17.7%) compared to the males (5.9%), $P=0.002$. The level of education was not significantly different between the two genders ($P=0.079$).

Occupation of the patients showed a statistically significant difference between the male and the female ($P<0.001$), with more of the male patients being of skilled labour.

The social demographic characteristics are shown in table 1.

Table 1: Socio-demographic variables of the study population

Variables	Males (186) n (%)	Females (164) n (%)	P value
Age, mean (SD)	50.4 (14.5)	44.6 (13.5)	<0.001
Age group			0.002
18-27	12 (6.5)	22 (13.4)	
28-37	26 (14.0)	30 (18.3)	
38-47	34 (18.3)	43 (26.2)	
48-57	62 (33.3)	36 (22.0)	
58-67	29 (15.6)	28 (17.1)	
>67	23 (12.4)	5 (3.0)	
Marital status			0.003
Single	7 (3.8)	5 (3.05)	
Married	168 (90.3)	130 (79.27)	
Cohabiting	11 (5.9)	29 (17.68)	
Highest Education level attained			0.079
Nil	4 (2.15)	13 (7.93)	
Primary	63 (33.87)	61 (37.20)	
Secondary	73 (39.25)	61 (37.20)	
College	33 (17.74)	21 (12.80)	
University	13 (6.99)	8 (4.88)	

Table 1 continues

Occupation			
Student	4 (2.2)	7 (4.3)	<0.001
Skilled personnel	162 (87.1)	104 (63.4)	
Unskilled personnel	20 (10.8)	53 (32.3)	
Religion			
Christians	179 (96.2)	156 (95.1)	0.709
Muslims	4 (2.2)	4 (2.4)	
Others	3 (1.6)	4 (2.4)	

Diabetes was diagnosed at an older age among males (43.4 years) than the females (38.2 years), $P < 0.001$.

A high proportion of the patients had reported sexual problems in both genders. The male population had experienced sexual problems more (65.1%) in their lives than the female population (46.3%), $P < 0.001$. Some of the male patients had sought treatment for sexual problem in the hospital (3.8%) and herbal (1.6%) while none of the female patients had sought any treatment ($P = 0.011$). In addition, the male patients were more likely to report their lives having been affected by the sexual problem at 36% than the female patients at 20.7%, $P = 0.002$. The results are shown in table 2.

Table 2: Clinical characteristics

Variables	Males n=186 Frequency (%)	Females n=164 Frequency (%)	P value
Mean age at onset of diabetes (years)	43.4 (13.5)	38.2 (12.8)	<0.001
Median duration of diabetes in years	5.5 (IQR 2.0-11.0)	6.0 (IQR 2.0-11.0)	0.861
Duration of diabetes(years)			
1 - 5	93 (50.0)	80 (48.8)	0.631
6 - 10	40 (21.5)	42 (25.6)	
>10	53 (28.6)	42 (25.6)	
Treatment for diabetes			
Diet	8 (4.3)	4 (2.4)	0.538
Injectables	69 (37.1)	66 (40.24)	
Injectables and oral medications	41 (22.0)	42 (25.61)	
Oral medications	68 (36.6)	52 (31.7)	
Reported sexual problem			
Yes	121 (65.1)	76 (46.3)	<0.001
No	65 (35.0)	88 (53.7)	
Treatment sought for the sexual problem			
No treatment			0.011
Conventional	176 (94.6)	164 (100.0)	
Herbal	7 (3.8) 3 (1.6)	0 0	
Life affected by sexual problem			
Yes	67 (36.0)	34 (20.7)	0.002
No	119 (64.0)	130 (79.3)	

Sexual Dysfunction in Diabetes Mellitus

Prevalence of Sexual Dysfunction among Male Participants

The male participants were assessed using the five domains of measuring sexual function which included erection, experience of orgasm, sexual desire, intercourse satisfaction and overall satisfaction to determine the prevalence of SD and of the types as well. The results are shown in table 3.

Table 3: Male Sexual Function

Category	Erectile function n (%)	Orgasmic function n (%)	Sexual desire n (%)	Intercourse satisfaction n (%)	Overall satisfaction n (%)
Dysfunction	128 (68.8)	90 (48.4)	152 (81.7)	161 (86.6)	127 (68.3)
No dysfunction	58 (31.2)	96 (51.6)	34 (18.3)	25 (13.4)	59 (31.7)

Dysfunction was found to be high in all the domains of sexual function as in table 5 and noted as; for erection (68.8%), orgasm (48.4%), sexual desire (81.7%), intercourse satisfaction (86.6%) and overall satisfaction (68.3%). Intercourse satisfaction (17.7%) had a higher level of severity than the other four domains of sexual dysfunctions. The result on severity of the male sexual dysfunction is shown in table 4.

Table 4: Types of Male Sexual Function

Type of dysfunction	Severe dysfunction	Moderate	Mild to moderate	Mild	No dysfunction
Erectile function, n (%)	24 (12.9)	19 (10.2)	38 (20.4)	47 (25.3)	58 (31.2)
Orgasmic function, n (%)	26 (14.0)	17 (9.1)	17 (9.1)	30 (16.1)	96 (51.6)
Sexual desire, n (%)	9 (4.8)	33 (17.7)	55 (29.6)	55 (29.6)	34 (18.3)
Intercourse satisfaction, n (%)	33 (17.7)	26 (14.0)	52 (28.0)	50 (26.9)	25 (13.4)
Overall satisfaction, n (%)	10 (5.4)	18 (9.7)	46 (24.7)	53 (28.5)	59 (31.7)

The prevalence of sexual dysfunction among the female diabetic patients was 36.6%; Sexual dysfunction in females was mainly mild and moderate contributing to 17.1% and 18.3% respectively. The results are shown in table 5.

Prevalence of sexual dysfunction among female participants

Table 5: Female Sexual Function

Variables	Frequency (%)
Sexual dysfunction	
Yes	60 (36.6)
No	104 (63.4)
Degree of sexual dysfunction	
Severe FSD	2 (1.2)
Moderate FSD	30 (18.3)
Mild FSD	28 (17.1)
Normal	104 (63.4)

The most prevalent dysfunctions among the females were desire and arousal. The results are shown in table 6.

Table 6: Types of Female Sexual Function

Category	Desire n (%)	Arousal n (%)	Lubrication n (%)	Orgasm n (%)	Satisfaction n (%)	Pain n (%)
Dysfunction	126 (76.8)	99 (60.4)	58 (35.4)	72 (43.9)	46 (28.0)	24 (14.6)
No dysfunction	38 (23.2)	65 (39.6)	106 (64.6)	92 (56.1)	118 (72.0)	140 (85.4)

DISCUSSION

Most studies done in the past discuss and emphasize female sexual dysfunction (FSD) and erectile dysfunction (ED). In most studies, the types of sexual dysfunctions are not given much attention. As noted in most studies done elsewhere, the findings in this study do compare fairly well with the slight variations accounted for by the sample sizes and age exclusion criteria where in most previous studies the sample size was either high or low and the lower age limits were placed a little high respectively than in this particular study. Studies similar to this have not been conducted locally and therefore comparisons could not be made. Some western studies reported high prevalence rates whereas in Africa most studies reported low rates, especially among the females where extremely few studies have been done as compared to males.

From the present study findings, prevalence rates of sexual dysfunction in general and also in most of the categories of sexual functioning were high, and do reflect findings in studies done elsewhere. As in a study done in Iran on sexual dysfunctions in patients with diabetes by Marzieh Ziaei – Rad et al. (2010), showed that sexual dysfunctions were widespread in both gender and 82.5% patients reported at least one sexual dysfunction and there were significant association between sexual dysfunctions and gender. This compares with dysfunctions of male sexual desire (81.7%) and intercourse satisfaction (86.6%) in the current study. Muniyappa.R. et al. (2005), documented that diabetes may affect desire, arousal and orgasm, but particularly arousal with decreased genital sensation and lubrication and that vaginal dryness and infection could lead to dyspareunia. Practitioners should therefore recognize the high prevalence of FSD (up to 50%) and potential increase in tandem with that of diabetes. On the types of FSD, it was noted by Zemishlang & Weizman (2008), that a decrease in sexual desire at 76% prevalence was the most common sexual dysfunction in women; findings that support the study findings that place desire as a sexual dysfunction at 76.8%.

CONCLUSION

Sexual dysfunction is prevalent among male and female diabetic patients, though the prevalence is significantly higher in males than in the females.

RECOMMENDATIONS

The study recommends that sexual dysfunction should be addressed more adequately in health care practice in Kenya.

All patients with diabetes should be evaluated for sexual dysfunction, and then referred for management that would include psychotherapy, with emphasis on sex therapy and pharmacotherapy as essential components in diabetic management.

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