

Prevalence and types of sexual dysfunction among males with diabetes in Nigeria

B C Unadike, A Eregie, and A E Ohwovoriole

Abstract

Sexual dysfunction in persons with diabetes mellitus is a complication that negatively affects the individual. This study set out to determine the prevalence and types of sexual dysfunction among male diabetic patients in a tertiary hospital in Benin City, Nigeria. Two hundred and twenty-five (225) males with diabetes and 220 males, who served as control subjects, were assessed for presence of sexual dysfunction, using the International Index of Erectile Function (IIEF) questionnaire. The prevalence of sexual dysfunction among diabetic persons was 58% while for the control group it was 3% ($p < 0.05$). Erectile dysfunction was the most common form in both groups, while orgasmic dysfunction was not reported from either diabetic or control groups. We conclude that sexual dysfunction is common among persons with diabetes. Physicians must enquire about this specifically as patients may not readily divulge this information. More studies are required to identify factors associated with these findings.

Introduction

Sexual dysfunction is a complication of diabetes mellitus that negatively affects the quality of life of the affected individual. Most subjects do not readily discuss their problem unless they are specifically asked to do so. Sexual dysfunction in diabetic persons is usually due to autonomic neuropathy; although vascular insufficiency and psychogenic factors are also contributory factors.¹ Medications used in treating hypertension in these patients can also cause sexual dysfunction, such as thiazide diuretics and beta-blockers.²

Previous reports by Jensen³ and Enzlin et al⁴ showed prevalence rates of sexual dysfunction in diabetic populations of 44% and 22%, respectively. Earlier reports have mainly concentrated on erectile dysfunction, which is the most common form of sexual dysfunction seen in diabetics.

This study therefore set out to determine the magnitude of types and frequency of sexual dysfunction among male diabetic patients in Benin City, Nigeria.

Patients and methods

This was a cross-sectional, descriptive study carried out between June and December 2004. Two hundred and twenty-five (225) consenting diabetic males were recruited from the diabetes clinics of the University of Benin Teaching Hospital and Central Hospital, both in Benin City in Nigeria. Patients who were on drugs such beta-blockers, and centrally acting drugs such as methyldopa (known to cause male sexual dysfunction), were excluded.

Two hundred and twenty-five (225) hospital workers volunteered to participate in the study as controls. Information obtained from both study and control subjects included age, drug history, history of type, and duration of sexual dysfunction. Height, weight, body mass index (BMI) and waist circumference, and the type and duration of diabetes were also documented in the study subjects. The weight obtained was recorded in kilogrammes (kg) to the nearest 0.1 kg and the height recorded in meters (m) to the nearest 0.05m. The BMI was calculated as the weight in kg divided by the square of the height in meters.⁵

The waist circumference was measured using a non-stretch metric tape and taken at the mid-point between the rib cage and iliac crest, while hip circumference was taken at the maximal circumference of the buttocks.⁶

Sexual dysfunction was diagnosed using the International Index of Erectile Function (IIEF), which is a sensitive, specific and standardised tool.⁷ The different domain ranges and cut-off scores are shown in Table 1.

Data analysis was carried out using SPSS version 10 (2000). Comparison of means used Student's t-test. Comparison of proportions used the Chi squared test. The level of statistical significance was taken as $p \leq 0.05$.

Table 1 International Index for Erectile Function (IIEF) domain scores for diagnosing sexual dysfunction

Domain	Range of scores	Dysfunction score
Erectile dysfunction	1–30	≤25
Overall satisfaction	2–10	≤8
Intercourse satisfaction	0–15	≤10
Sexual desire	0–10	≤8
Orgasm satisfaction	0–10	≤8

B C Unadike, Department of Medicine, University of Uyo Teaching Hospital, Uyo, Akwa Ibom State, Nigeria; A Eregie, Department of Medicine, University of Benin Teaching Hospital, Benin City, Edo State, Nigeria; and A E Ohwovoriole, Department of Medicine, Lagos University Teaching Hospital, Idi Araba, Lagos State, Nigeria. Correspondence to: B C Unadike, Department of Medicine, University of Uyo Teaching Hospital, Uyo, Akwa Ibom State, Nigeria. Email: bernadike@yahoo.com

Results

The study group were of similar age to the non-diabetic controls, but with higher mean BMI index than the controls ($p < 0.05$). The clinical characteristics of the diabetic and control subjects are shown in Table 2.

The prevalence of sexual dysfunction in the diabetic population was 57.7%, which was significantly higher than the 2.6% seen in the control group ($p \leq 0.05$).

Erectile dysfunction was the most common form of dysfunction, seen in 127 (98%) of 130 diabetic males; 123 (95%) had problems with overall satisfaction; 116 (89%) were not satisfied with the act of intercourse, while 6 (5%) had problems with sexual desire. None of the subjects admitted to having disorders of orgasmic function.

Six (6) persons in the control group had sexual dysfunction, with all six having erectile dysfunction and problems with intercourse satisfaction. Comparison of the proportion of male study and male control subjects with sexual dysfunction yielded a significant difference ($p < 0.05$).

The distribution of each type of sexual dysfunction and the mean IIEF scores for the various domains of sexual dysfunction in both diabetic and control subjects are shown in Table 3.

Table 2 Clinical characteristics of diabetic and control groups (means \pm SD)

	Diabetic group (n=225)	Control group (n=225)	Significance
Age (years)	47 \pm 6	47 \pm 11	pNS
BMI (kg/m ²)	26 \pm 3.2	23.9 \pm 3.4	<0.05
WCE (cm)	82.2 \pm 11.4	80.4 \pm 13.1	pNS
WHR	0.93 \pm 0.07	0.92 \pm 0.07	pNS

Notes
 BMI = body mass index; WHR = waist:hip ratio;
 WCE = waist circumference; NS = not significant.

Table 3 IIEF collated mean scores from diabetic subjects with sexual dysfunction (means \pm SD)

Domain	Diabetic subjects	Control subjects
Erectile dysfunction	14.4 \pm 1.5	16.6 \pm 0.7
Overall satisfaction	5.4 \pm 1.1	6.5 \pm 0.1
Intercourse satisfaction	6.0 \pm 0.9	6.7 \pm 0.9
Sexual desire	6.8 \pm 0.4	7.2 \pm 0.3

Discussion

Diabetes is known to cause sexual dysfunction.⁸ Sexual dysfunction normally develops insidiously over months or years but may occur early in the natural history of diabetes.⁹ Autonomic neuropathy, vasculopathy, endocrinopathy and psychogenic factors have all been implicated in its cause.¹⁰

The prevalence rate in this study was 58%. This figure is higher than that obtained by Miccoli et al,¹¹ who reported

a prevalence rate of 46% for 128 Italian diabetic males in their study. Jensen³ and Enzlin et al⁴ also reported lower prevalence rates of 44% and 22%, respectively. Their study population was younger, compared with our study population where the mean age was 48 years, and this older age may explain the differences in prevalence since sexual dysfunction is known to increase with age.¹²

The prevalence of sexual dysfunction among persons with diabetes is higher than in the general population,⁹ as documented in this study with only six persons without diabetes affected (3%). This finding shows that physicians should enquire about this problem directly when evaluating male persons with diabetes.

Erectile dysfunction (ED) is the commonest form of sexual dysfunction and prevalence rates in diabetes vary from 35 to 75%.¹³ It was the most common form of sexual dysfunction in our study, a finding similar to previous reports by Kolodyn et al¹⁴ and Hakim and Goldstein.¹⁵ Previous studies done locally in Nigeria by Olarinoye et al¹⁶ in Ilorin, documented that 74% of type 2 diabetic persons had some degree of erectile dysfunction, whilst the prevalence of moderate to severe forms was 51%. Modebe,¹⁷ in an earlier study done in Enugu, in South East Nigeria, among patients attending a medical clinic showed that 58% of the men had erectile failure.¹⁷

The male sexual act is dependent on having a good erection, hence most males will notice if there is a decline in having a good erection. Most subjects who had problems with erection also had problems with overall satisfaction (94.6%) and intercourse satisfaction (89.2%). This is because a good erection is critical to the overall satisfaction of intercourse in men.

The prevalence rate of ED in this study (56.4%) is much lower than the rate of 75% reported in Saudi diabetic patients by El-Sakka and Tayeb,¹⁸ though in their study populations the mean age (54 years) was much higher than that in our study and ED is also known to increase with age. A similar study carried out among Israeli men with diabetes also concluded that ED increases with age.¹² Several factors can explain this age-related increase in the incidence of ED. Physical, psychological and endocrine disorders occur more commonly among the elderly. Age-related smooth muscle dysfunction, for example, is associated with sexual dysfunction.¹⁹

An ED prevalence rate of 71% was reported in Hong Kong by Sui et al²⁰ on 486 diabetic patients that they studied. The higher mean age in these studies coupled with the possible influence of racial and sociodemographic factors (such as educational status etc) could explain the higher ED prevalence compared with the findings in this study. Loss of libido was seen in 5% of males in this study. Miccoli et al¹¹ reported a rate of 8%.

The low prevalence in our study could be attributed to the fact that sexual disorders are still considered a personal and private matter that most people will not readily discuss. Our study was large and used validated questionnaire methodology. One problem is that our control group was not perfectly matched (diabetic

patients had a higher BMI). Nevertheless, the high levels of sexual dysfunction (58% v 3%) is convincing evidence of a genuine problem that diabetes healthcare workers need to address.

References

1. Carrier S, Brock G, Kous N W, Lue TF. The pathophysiology of erectile dysfunction. *Urology* 1993; 42: 468–81.
2. Koppiker N, Boolell M, Price D. Recent advances in the treatment of erectile dysfunction in patients with diabetes. *Endocr Pract* 2003; 9: 52–63.
3. Jensen S. Diabetes sexual dysfunction: a comparative study of 160 insulin treated diabetic men and women and an age-matched control group. *Arch Sex Behav* 1981; 10: 493–504.
4. Enzlin P, Mathiue C, Van den Bruel A. Prevalence and predictors of sexual dysfunction in patients with Type 1 diabetes. *Diabetes Care* 2003; 26: 409–14.
5. Garrow JS, Webster J. Quetelet's index: (wt/Ht²) as a measure of fatness. *Int J Obes* 1985; 9: 147–53.
6. Bray G. A. Obesity: basic consideration and clinical approaches. *Disease Monit* 1989; 35: 449–537.
7. Rosen R C, Riley A, Wagner G. The International Index of Erectile Function (IIEF): a multidimensional scale for assessment of erectile dysfunction. *Urology* 1997; 6: 822–30.
8. Thomas S, LoPiccolo J. Sexual functioning in persons with diabetes: issues in research, treatment and education. *Clin Psychol Rev* 1994; 14: 1–86.
9. Al Hilali NS, Abolfotouh MA, Ghanem HM. Pattern of erectile dysfunction in Jeddah city. *Saudi Med J* 2001; 22: 34–8.
10. Sowers JR, Zemel M. Clinical implications of hypertension in the diabetic patient. *Am J Hypertens* 1990; 3: 415–24.
11. Miccoli R, Giampietro O, Tognarelli M, et al. Prevalence and type of sexual dysfunctions in diabetic males: a standardized clinical approach. *J Med* 1987; 18: 305–21.
12. Roth A, Kälter L, Kerbis O, et al. Prevalence and risk factors for erectile dysfunction in men with diabetes, hypertension or both diseases: a community survey among 1,412 Israeli men. *Clin Cardiol* 2003; 26: 25–30.
13. Metro MJ, Broderick GA. Diabetes and vascular impotence: does insulin dependence increase the relative severity? *Int J Impot Res* 1999; 2: 79–85.
14. Kolodyn RC, Kahn CB, Goldstein HH, Barnet DM. Sexual dysfunction in diabetic men. *Diabetes* 1974; 23: 306–9.
15. Hakim LS, Goldstein AL. Diabetic sexual dysfunction. *Endocrin Metab Clin North Am* 1996; 25: 379–400.
16. Olarinoye JK, Kuranga SA, Katibi IA, et al. Prevalence and determinants of erectile dysfunction among people with type 2 Diabetes in Ilorin, Nigeria. *Nig Postgrad Med J* 2006; 13: 291–6.
17. Modebe O. Erectile failure among medical clinic patients. *Afr J Med Sci* 1990; 19: 259–64.
18. El Sakka AI, Tayeb KA. Erectile dysfunction: risk factors in male Saudi diabetics. *Diabetic Med* 1996; 10: 916–20.
19. Montorsi F, Salonia A, Deho F, Briganti A, Rigatti P. The ageing male and erectile dysfunction. *World J Urol* 2002; 20: 28–35.
20. Sui SC, Lo SK, Wong KW. Prevalence and risk factors for erectile dysfunction in Hong Kong diabetic patients. *Diabetic Med* 2001; 18: 732–9.

Diabetes INTERNATIONAL

Call for articles

The Editors welcome articles on diabetes, and the management of diabetic diseases, from all health professionals, medical and non-medical.

We publish Review Articles, Original Articles, Short Reports, Case reports, and Letters.

Please see 'Guidance to authors' on page 24 and email your manuscript to info@fsg.co.uk.