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Original Research Article

PREVALENCE OF SEXUAL DYSFUNCTION AMONG WOMEN OF REPRODUCTIVE AGE GROUP WITH TYPE 2 DIABETES MELLITUS AT THE ENDOCRINOLOGY AND DIABETES UNIT, LADY READING HOSPITAL, PESHAWAR

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ABSTRACT

Background: *Sexual dysfunction in women is a commonly overlooked complication of type 2 diabetes mellitus (T2DM), impacting physical and emotional well-being. It is particularly relevant among women of reproductive age, where quality of life and relational health may be significantly affected.* ***Objective:*** *To determine the prevalence of sexual dysfunction among women of reproductive age with T2DM and explore associated demographic and clinical factors.* ***Study Design:*** *Cross-sectional study.* ***Setting:*** *Conducted at a tertiary care center (Department of Diabetes and Endocrinology, Lady Reading Hospital, Peshawar, Pakistan).* ***Duration of Study:*** *19 October 2024 to 19 April 2025.* ***Methods:*** *A total of 245 women aged 18 to 45 years with T2DM were enrolled. Data were collected using a structured demographic questionnaire and the validated Female Sexual Function Index (FSFI), which evaluates six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. Statistical analysis was performed to determine prevalence and assess associations ($p<0.05$ considered significant).* ***Results:*** *The overall prevalence of sexual dysfunction was 62.0%. Dysfunction was significantly higher among uneducated women (61.8%, $p<0.05$), those residing in rural areas (65.8%, $p<0.05$), women with a diabetes duration >5 years (59.9%, $p<0.05$), and those with obesity (19.1%, $p<0.05$).* ***Conclusion:*** *Sexual dysfunction was found to be prevalent in 62% of women of reproductive age with T2DM. Lower education, rural residence, longer duration of diabetes, and obesity were significantly associated with increased risk. These findings emphasize the need for routine sexual health screening and counseling in diabetic care for women.*

Keywords: Type 2 Diabetes Mellitus, Sexual Dysfunction, Female Sexual Function Index, Reproductive Age Women, Diabetes Complications

INTRODUCTION

Diabetes is a significant global health challenge, as acknowledged by the WHO in its classification as a global epidemic. In 2010, the worldwide incidence of diabetes in adults aged 20-79 was 6.4%, equating to 285 million individuals. This figure is anticipated to grow to 7.7% in 2030, affecting 439 million people, as well as will exceed 600 million by 2035. The IDF predicts that 33 million people across Pakistan, within the same age group, are impacted by diabetes, resulting in an estimated incidence of 26.7% (1, 2). Sexual health constitutes a vital component of general health. Sexual health refers as that includes physical, mental, and social well-being in connection with sexual activity, rather than solely the absence of medical conditions (3, 4).

In women, sexual dysfunction may present as challenges with orgasm, pain, as well as other types of sexual discomfort. Type 2 diabetes negatively impacts sexual health, especially among adults who are middle-aged or older. Diabetic women, sexual dysfunction is affected by physical as well as psychological variables. Although sexual dysfunction is extremely common among diabetic women, it's still under-represented in research. Research demonstrates an increased incidence of sexual dysfunction in women with diabetes, in contrast to their non-diabetic counterparts. Yet, the particular sexual issues as well as risk factors affecting diabetic women are less investigated, especially when contrasted to diabetic men (5-10).

The Female Sexual Function Index is a standardised tool utilised to evaluate sexual function in six domains: arousal, lubrication, orgasm, satisfaction, as well as pain during intercourse. Each domain consists of multiple items, with scores for these items being aggregated as well as modified through domain-specific factors. An elevated total score indicates diminished sexual function (11, 12). Sexual health concerns in women with type 2 diabetes are prevalent yet frequently neglected, resulting in considerable distress. Despite their prevalence, research on these issues is limited, resulting in a significant gap in understanding their effects on quality of life. This study evaluates the prevalence of sexual dysfunction in women with diabetes, utilising the Female Sexual Function Index (FSFI) to identify critical issues that may enhance patient outcomes and overall well-being in those with type 2 diabetes.

METHODOLOGY

The study adopted a cross-sectional design conducted at the Department of Diabetes and Endocrinology, Lady Reading Hospital, Peshawar, from 19 October 2024 to 19 April 2025. Ethical approval was obtained from the hospital. We enrolled 245 female type 2 diabetic patients.

Eligibility criteria include women aged 18 to 45 years with a confirmed type 2 diabetes diagnosis, married for at least one year, and in stable relationships. Those with pre-existing sexual disorders unrelated to diabetes, histories of mastectomy or bilateral hysterectomy and oophorectomy, current pregnancies, spouses with sexual disorders, or psychotropic medication use were not enrolled.

Two validated instruments were given to the patients, which were a demographic and clinical questionnaire capturing age, education, place of living and socioeconomic status, and comorbidities as obesity and hypertension, and the Female Sexual Function Index (FSFI), which assesses six domains of sexual health, which are desire arousal, lubrication, orgasm satisfaction and pain. The FSFI's standardized cutoff scores classified patients with or without sexual dysfunction. All the patients gave their consent.

We defined sexual dysfunction as a clinically notable impairment in one or more phases of the sexual response cycle, including diminished desire, arousal difficulties, orgasmic dysfunction, reduced satisfaction, or pain during intercourse. The reproductive age group was women between 18 and 45 years, representing the primary

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childbearing years. All the patients completed the questionnaires during their OPD visits.

We used SPSS 26 to analyze the gathered data. Age, duration of diabetes were evaluated using mean and SD. Demographics, sexual dysfunction, and morbidities were assessed using frequency and percentage. Chi Square test was used for evaluating the association of SD with various factors, keeping the P value notable at <0.05.

RESULTS

The mean age was 33.06±4.68 years. The average duration of diabetes among the participants was 5.53±1.74 years.

Regarding comorbidities, around 37 (15.1%) patients were classified as obese, and 27 (11.0%) had hypertension (Table 1). 152 (62.0%) patients reported sexual dysfunction, while 93 (38.0%) did not experience this condition (Figure 1).

Table 1: Demographics and comorbidity profile

Demographics and comorbidity profile		n	%
Socioeconomic status	Low (< 20K Rs/Month)	85	34.7%
	Middle (20 to 50K Rs/Month)	108	44.1%
	High (> 50K Rs/Month)	52	21.2%
Education status	Educated	114	46.5%
	Uneducated	131	53.5%
Residence	Rural	144	58.8%
	Urban	101	41.2%
Obesity	Yes	37	15.1%
	No	208	84.9%
Hypertension	Yes	27	11.0%
	No	218	89.0%

Further analysis showed that education status revealed that among the patients of SD 94 (61.8%) were uneducated (P < 0.05). Rural residents accounted for 100 (65.8%) of the cases of SD (P < 0.05). Hypertension was present in 20 (13.2%) of the participants with sexual dysfunction, but it wasn't statistically notable (P > 0.05). The duration of diabetes was associated with SD (P < 0.05), and obesity was also notably associated (P < 0.05) (Table 2).

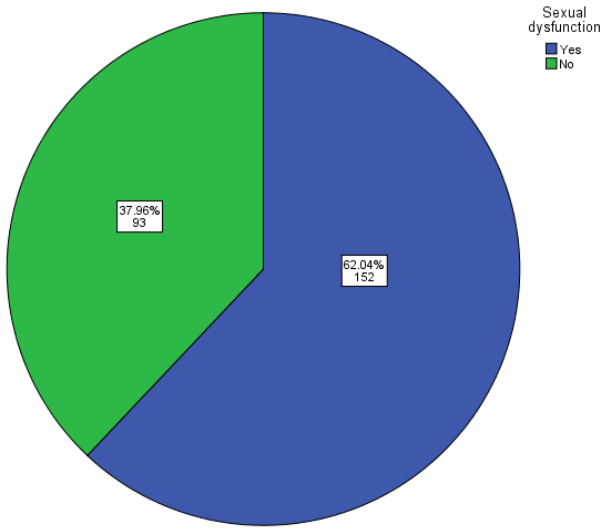

Figure 1: Sexual dysfunction

Table 2: Association of SD with demographics and comorbidity profile

Demographics and comorbidity profile		Sexual dysfunction				P value
		Yes		No		
		n	%	n	%	
Socioeconomic status	Low	57	37.5%	28	30.1%	P > 0.05
	Middle	63	41.4%	45	48.4%	
	High	32	21.1%	20	21.5%	
Education status	Educated	58	38.2%	56	60.2%	P < 0.05
	Uneducated	94	61.8%	37	39.8%	
Residence	Rural	100	65.8%	44	47.3%	P < 0.05
	Urban	52	34.2%	49	52.7%	
Hypertension	Yes	20	13.2%	7	7.5%	P > 0.05
	No	132	86.8%	86	92.5%	
Duration of diabetes (Years)	3 to 5	61	40.1%	63	67.7%	P < 0.05
	> 5	91	59.9%	30	32.3%	
Obesity	Yes	29	19.1%	8	8.6%	P < 0.05
	No	123	80.9%	85	91.4%	

DISCUSSION

Our findings revealed that 62.0% of participants experienced sexual dysfunction, which aligns with previous studies, though variations exist due to differences in methodology, cultural factors, and sample characteristics.

The prevalence of sexual dysfunction in this study (62.0%) falls within the range reported in other studies, such as 66.9% by Sebtain et al. (13), Rahmanian et al. documented 68.6% (5). However, it is higher than the 43.2% reported by Masood et al., possibly due to differences in assessment tools or sociocultural barriers in discussing sexual health (14). Notably, Kamrul-Hasan et al. found a much higher prevalence (79%) in their cohort, suggesting that regional and socioeconomic factors may influence reporting (15). The mean age of participants in this study was 33.06 ± 4.68 years, which was younger than in other studies, such as 42.46 ± 4.2 years by Sebtain et al and 35 ± 6 years by Kamrul-Hasan et al (13, 15). Despite the younger cohort, the high prevalence of sexual dysfunction indicates that T2DM affects sexual health early in the disease course.

The mean duration of diabetes, 5.53 ± 1.74 years, was shorter than in the research by Sebtain et al, 8.42 ± 4.6 years. Yet, our study still

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found a potential association between longer diabetes duration and sexual dysfunction (59.9% in those with >5 years duration, $p < 0.05$) (13). This aligns with Kamrul-Hasan et al., who reported that prolonged diabetes duration increased the risk of orgasmic dysfunction (15).

This study found that 61.8% of women with sexual dysfunction were uneducated, and rural residence was also associated with higher dysfunction (65.8% vs. 34.2% urban, $p < 0.05$). These findings are consistent with Masood et al., who noted that illiterate women had a higher frequency of sexual dysfunction (57.9% vs. 32% in educated women) (14). Similarly, Sebtain et al observed that 95% of women with primary or no education reported sexual dysfunction compared to 81% with higher education, though statistical significance was not reached (13). This suggests that education improves awareness and possibly communication about sexual health, reducing stigma.

Obesity (19.1% in those with sexual dysfunction, $p < 0.05$) was notably associated with sexual dysfunction, corroborating Kamrul-Hasan et al., who found that obese women had a 9.53-fold higher risk of painful intercourse (15). This may be due to hormonal imbalances, body image issues, or vascular complications. Hypertension was higher in SD patients, but did not show a strong link, which contrasts with Kamrul-Hasan et al., where hypertension was prevalent in 55.3% of diabetic women with sexual dysfunction (15).

The high prevalence of sexual dysfunction underscores the need for early screening and intervention. Since education and rural residence were notable factors, community-based awareness programs could help destigmatize sexual health discussions. Healthcare providers should integrate sexual health assessments into routine diabetes care.

CONCLUSION

We conclude that the sexual dysfunction had a relatively higher frequency (62%) in patients with type 2 diabetes, and a strong association of SD was also found with obesity, residence, lack of education, and extended duration of diabetes.

DECLARATIONS

Data Availability Statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department Concerned. (IRB-43/Endo/LRH)

Consent for publication

Approved

Funding

Not applicable

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTION

UMM E SALMA RASHID (Fellow)
Conception of Study, Development of Research Methodology Design, Review of manuscript, Drafting manuscript, Data collection, Data analaysis and final approval of manuscript.
IRFAN ULLAH (Assistant Professor)
Review of Literature, Critical Input, Review of Literature.
IBRAR AHMAD (Associate Professor)
Critical Input, Review, Final approval of manuscript
FAHEEM UR RAHMAN (Fellow)
Critical Input and Literature search.
KAMRAN MANAN (Fellow)
Literature Review, Crtitical Input.

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