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Overview of Sexual Dysfunction among Diabetes Mellitus Patients at Dr. Soedono Hospital

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ABSTRACT

Diabetes mellitus (DM) is a chronic metabolic disorder that can lead to various complications, including sexual dysfunction, particularly erectile dysfunction (ED), which may significantly impair patients' quality of life. This study aimed to describe sexual dysfunction among male patients with diabetes mellitus at Dr. Soedono Regional Hospital, Madiun. A descriptive quantitative study with a cross-sectional design was conducted from February to March 2025 involving 30 male patients selected using purposive sampling. Data were collected using the International Index of Erectile Function-5 (IIEF-5) questionnaire and analyzed descriptively using frequency and percentage distributions. The results showed that most respondents were aged 61–70 years (30%), had completed senior high school (40%), were self-employed (27%), had lived with diabetes mellitus for 1–5 years (73%), and underwent regular treatment (63%). Severe erectile dysfunction was found in 30% of respondents, followed by moderate erectile dysfunction in 27%. All patients with a duration of diabetes of 6–10 years experienced severe erectile dysfunction. Severe ED was more common among older patients and those who did not receive regular treatment. In conclusion, sexual dysfunction, particularly severe erectile dysfunction, is common among male patients with diabetes mellitus. Older age, longer disease duration, and inadequate treatment adherence may contribute to greater severity of erectile dysfunction. Therefore, routine screening and early management of sexual dysfunction should be integrated into diabetes care to improve patients' quality of life.

Keywords: Diabetes Mellitus; sexual dysfunction; erectile dysfunction; IIEF-5

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INTRODUCTION

Diabetes mellitus is one of the endocrine diseases with a high prevalence worldwide, including in Indonesia. According to data, Indonesia ranks fourth in the number of people with diabetes, after

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India, China, and the United States [1]. Diabetes mellitus can lead to numerous medical, psychological, and sexual problems, one of which is sexual dysfunction in men—often considered a complication of advanced-stage diabetes. Sexual dysfunction is a condition in which a man is unable to perform his sexual function normally. Sexual dissatisfaction may manifest as decreased sexual desire (sexual drive/interest) and erectile dysfunction, or difficulty achieving an erection [2] as well as difficulty achieving ejaculation or inability to maintain penile rigidity for sexual satisfaction [3].

Sexual dysfunction has increasingly been recognized as an important component of diabetes care because it not only affects physical health but also psychological well-being, marital relationships, and overall quality of life. Erectile dysfunction in men with diabetes is primarily caused by endothelial dysfunction, peripheral neuropathy, and impaired penile blood flow resulting from chronic hyperglycemia. Nevertheless, discussions regarding sexual health are still frequently neglected in routine clinical practice because both patients and healthcare providers often feel uncomfortable addressing this issue [4].

According to the Basic Health Research Survey (Riskesdas), there was a significant increase in the prevalence of diabetes mellitus—from 6.9% in 2013 to 8.5% in 2018[3]. The prevalence of erectile dysfunction among diabetes mellitus patients, as reported in the literature [5] , ranges from approximately 35% to 90%. Research on erectile dysfunction in individuals with diabetes mellitus remains relatively limited, as the issue is still considered taboo in society and is often overlooked in diagnostic assessments, despite its potential physical and psychological impacts. This occurs partly because of the embarrassment associated with disclosing the problem, which can influence the accuracy of the diagnosis. Sexual needs, early detection, sexual education, and management strategies for sexual problems have not yet received specific attention in patients with diabetes mellitus. A practical solution to addressing sexual dysfunction is early detection, which can help prevent chronic complications and improve quality of lif [6].

According to the International Diabetes Federation (IDF), approximately 537 million adults were living with diabetes worldwide in 2021, and this number is projected to increase to 643 million by 2030 and 783 million by 2045, indicating that diabetes and its complications will continue to pose a major global health burden [7]. Although several studies have reported the prevalence and risk factors of erectile dysfunction among patients with diabetes mellitus, limited studies have specifically described the characteristics and severity of sexual dysfunction among male patients attending secondary healthcare facilities in Indonesia using the International Index of Erectile Function-5 (IIEF-5). Furthermore, no published study has specifically reported the overview of sexual dysfunction among diabetes mellitus patients at Dr. Soedono Regional Hospital, Madiun. Therefore, this study is expected to provide baseline data for the early detection of sexual dysfunction and to support the integration of sexual health assessment into comprehensive diabetes management. This study aimed to describe sexual dysfunction among male patients with diabetes mellitus at Dr. Soedono Regional Hospital, Madiun.

METHOD

This study employed a descriptive quantitative cross-sectional design. The study was conducted at the Internal Medicine Clinic of Dr. Soedono Regional Hospital, East Java, Indonesia, from February to March 2025. The study population comprised all male patients with diabetes mellitus attending the clinic during the study period. A purposive sampling technique was used, and 30 respondents who met the inclusion criteria were recruited. The inclusion criteria were male patients diagnosed with diabetes mellitus, able to communicate effectively, in a compos mentis state, and willing to participate by providing written informed consent. Ethical approval was obtained from the Ethics Committee of Dr. Soedono Regional Hospital, East Java Province (Ethical Clearance No. 400.114.5.4/11.650/102.9/2025). Data were collected using the Indonesian version of the International Index of Erectile Function-5 (IIEF-5) questionnaire, which has been translated, validated, and shown to be reliable for assessing erectile dysfunction in the Indonesian population [15]. The instrument demonstrated high construct validity (Pearson's $r = 0.70–1.00$), good internal consistency (Cronbach's $\alpha = 0.828$), and almost perfect inter-rater reliability (Cohen's $\kappa = 0.879$; $p < 0.001$)[8]. Respondents were classified into five categories based on the total IIEF-5 score: severe erectile dysfunction (5–7), moderate (8–11), mild-to-moderate (12–16), mild (17–21), and no erectile dysfunction (22–25) . Data were analyzed using descriptive statistics and presented as frequencies and percentages..

RESULT

Table 1. Characteristics of Patients with Diabetes Mellitus at the Internal Medicine Clinic of Dr. Soedono Regional Hospital, Madiun

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	31–40	8	27
	41–50	5	16
	51–60	8	27
	61–70	9	30
Duration of diabetes (years)	1–5	22	73
	6–10	8	27
Occupation	Retired	5	17
	Farmer	7	23
	Laborer	3	10
	Civil servant	7	23
	Self-employed	8	27
Educational level	Elementary school	0	0
	Junior high school	5	17
	Senior high school	12	40
	Diploma	8	26
	Bachelor's degree	5	17

Based on Table 1 the characteristics of the study participants. Most respondents were aged 61–70 years (30%), while 27% were aged 31–40 years and 51–60 years, respectively. Regarding the duration of diabetes mellitus, the majority of respondents had lived with diabetes for 1–5 years (73%). Based on occupation, the largest proportion of respondents were self-employed (27%), followed by farmers (23%) and civil servants (23%). Regarding educational attainment, most respondents had completed senior high school (40%), followed by a diploma (26%), while 17% had completed junior high school and 17% held a bachelor's degree.

Table 2. Distribution of Patient Characteristics Based on Regular Treatment at the Internal Medicine Clinic of RSUD dr. Soedono Madiun

Routine therapy	Frequency	Percentage
Yes	19	63%
No	11	37%

Based on Table 5, the majority of diabetes mellitus patients at the RSUD dr. Soedono Madiun Clinic undergo regular treatment, totaling 19 people (63%).

Table 3. Overview of Erectile Dysfunction in Diabetes Mellitus Patients at the Internal Medicine Clinic of RSUD dr. Soedono Madiun

Erectile dysfunction	**Frequency**	**Percentage**
Severe erectile dysfunction	9	30
Moderate erectile dysfunction	8	27
Mild erectile dysfunction	6	20
No dysfunction	7	23

Based on Table 6, nearly half of the Diabetes Mellitus patients at the Internal Medicine Clinic of RSUD dr. Soedono Madiun experience sexual dysfunction in the severe category, totaling 9 people (30%). Meanwhile, diabetes mellitus patients with moderate erectile dysfunction number 8 people (27%).

Table 4. Cross-tabulation of Erectile Dysfunction by Age

Age	**No dysfunction**		**Mild erectile dysfunction**		**Moderate erectile dysfunction**		**Severe erectile dysfunction**		**Total**	
	F	**%**	**F**	**%**	**F**	**%**	**F%**	**%**	**F**	**%**
31-40	6	75	2	25	0	0	0	0	8	100
41-50	0	0	4	80	0	0	1	20	5	100
51-60	0	0	0	0	7	87,5	1	12,5	8	100
61-70	1	11,1	0	0	1	11,1	7	77,8	9	100

Based on Table 4 diabetes patients at the Internal Medicine Clinic of dr. Soedono Madiun aged 51-60 years, nearly half of them experience mild erectile dysfunction, totaling 7 people (87.5%). Meanwhile, patients aged 61-70 years, totaling 7 people (77.8%), experience severe erectile dysfunction.

Table 5. Cross-tabulation of Erectile Dysfunction Based on Duration of Diabetes Mellitus

Duration of DM (year)	No dysfunction		Mild erecti dysfunctio		Moderate erectile dysfunction		Severe erectile dysfunction		Total	
	F	%	F	%	F	%	F	%	F	%
1-5	7	31,8	6	27,3	8	36,4	1	4,5	22	100
6-10	0	0	0	0	0	0	8	100	8	100

Based on Table 5, it shows that all diabetes mellitus patients at the Internal Medicine Clinic of RSUD dr. Soedono Madiun who have had the disease for 6-10 years experience severe erectile dysfunction, totaling 8 people (100%).

Table 6. Cross-tabulation of Erectile Dysfunction Based on Regular Treatment

Routine therapy	No dysfunction		Mild erectile dysfunction		Moderate erectile dysfunction		Severe erectile dysfunction		Total	
	F	%	F	%	F	%	F	%	F	%
Yes	4	21,1	4	21,1	6	31,6	5	26,3	19	100
No	3	27,1	2	18,2	2	18,3	4	36,4	11	100

Based on Table 6, it shows that a small portion of diabetes mellitus patients at the Internal Medicine Clinic of RSUD dr. Soedono Madiun experience severe erectile dysfunction, totaling 4 people (36.4%), who do not undergo regular treatment.

DISCUSSION

The present study found that most participants with sexual dysfunction were aged 61–70 years. This finding suggests that increasing age may be associated with a greater burden of sexual dysfunction among men with diabetes mellitus. Aging is associated with physiological changes that affect vascular, neurological, and hormonal function, thereby increasing the risk of erectile dysfunction [9]. According to the researchers, sexual dysfunction can affect all aspects of sexual function, including erectile ability, orgasm achievement, sexual drive, satisfaction during intercourse, and overall sexual satisfaction. Such symptoms are generally found in elderly patients with long-standing diabetes mellitus. Nearly all participants (73%, n=22) had been living with diabetes for 1–5 years. Long-term complications of hyperglycemia, such as diabetic neuropathy and atherosclerosis, can progressively impair sexual function. This condition is suspected to be influenced by unhealthy lifestyle patterns, which may trigger instability in blood glucose levels [10]. Therefore, routine assessment of sexual function should be

incorporated into diabetes care, particularly for older male patients, to facilitate early identification and appropriate management of sexual dysfunction [4].

Erectile dysfunction (ED) does not always occur only after more than ten years of diabetes mellitus. The findings of the present study indicate that ED was also identified among patients with a shorter duration of diabetes (1–5 years), suggesting that sexual dysfunction may develop during the early stages of the disease. This finding is consistent with previous studies reporting that chronic hyperglycemia may accelerate endothelial dysfunction, microvascular impairment, and diabetic neuropathy, which contribute to the earlier onset of erectile dysfunction, particularly in patients with poor glycemic control and additional cardiovascular risk factors such as hypertension, dyslipidemia, and obesity [4], [10]. The researchers found that in patients with a disease duration of 1–5 years, complications such as diabetic neuropathy and atherosclerosis may already be present. This suggests that an unhealthy lifestyle plays a significant role in the onset of these complications. ED should therefore not be considered solely a long-term complication requiring more than a decade to develop [11]. Microvascular damage and peripheral neuropathy can occur sooner, especially in patients with poor glucose control, unhealthy lifestyle habits, and additional risk factors such as hypertension, dyslipidemia, and obesity [12]. In such cases, ED may appear shortly after diagnosis—or even before clinical diabetes is detected. This aligns with previous findings indicating that vascular and neuropathic damage in diabetic patients may develop earlier due to uncontrolled chronic hyperglycemia [3]. These findings highlight the importance of early screening for sexual dysfunction in male patients with diabetes mellitus, regardless of disease duration, to enable timely intervention and improve quality of life [13].

Almost one-third of participants (30%, n=9) experienced severe erectile dysfunction, consistent with the study by Rahayu (2015), in which 74% (n=49) of participants were affected [14]. ED is commonly caused by impaired blood flow to the genital organs. An erection occurs when the spongy tissue in the penis becomes engorged with blood, resulting in rigidity. More than 30% of men with diabetes experience this condition. Physiologically, two main factors determine the occurrence of an erection: sexual stimulation and the normal functioning of the penis, including its vascular and nervous systems [15]. Diabetes is a multifactorial disease, with age being a non-modifiable risk factor. As age increases, the risk of glucose intolerance tends to rise [16]. Older men have a higher risk of erectile dysfunction due to progressive endothelial dysfunction, reduced smooth muscle content in the corpus cavernosum, and impaired nitric oxide bioavailability, all of which adversely affect erectile function [17], [18]. In addition, penile sensitivity declines, requiring more time to achieve an erection, with reduced orgasm intensity, decreased ejaculate volume, and a lower frequency of sexual activity. Older age is also often accompanied by various health problems and a decline in testosterone levels, which collectively contribute to an increased risk of ED [19]. The findings of this study support previous evidence indicating that advancing age is an important factor associated with the severity of erectile dysfunction among men with diabetes mellitus. Therefore, routine assessment of sexual function should

be incorporated into diabetes management, particularly for older patients, to facilitate early detection and appropriate intervention. Early identification of sexual dysfunction may improve patients' quality of life and encourage comprehensive management of diabetes-related complications[20].

This study has several strengths. First, it addresses sexual dysfunction among patients with diabetes mellitus, an important but often underexplored complication, particularly in Indonesian secondary healthcare settings. Second, the use of the internationally validated International Index of Erectile Function-5 (IIEF-5) questionnaire strengthened the accuracy and consistency of the assessment of erectile dysfunction. Third, the descriptive quantitative cross-sectional design was appropriate for providing an overview of sexual dysfunction among male patients with diabetes mellitus. In addition, the study was conducted in accordance with ethical research principles and was supported by relevant theoretical and empirical evidence.

However, several limitations should be acknowledged. The study included a relatively small sample of 30 participants recruited from a single hospital, which may limit the generalizability of the findings. Furthermore, important clinical variables, such as glycemic control (HbA1c or fasting blood glucose), testosterone levels, body mass index, hypertension, and dyslipidemia, were not assessed. These factors may influence the occurrence and severity of erectile dysfunction and should therefore be considered in future studies. Further multicenter studies involving larger sample sizes and additional clinical parameters are recommended to provide more comprehensive evidence regarding sexual dysfunction among patients with diabetes mellitus.

CONCLUSION

This study demonstrated that sexual dysfunction, particularly erectile dysfunction, is a common problem among male patients with diabetes mellitus at the Internal Medicine Clinic of Dr. Soedono Regional Hospital. The findings indicate that older age and a longer duration of diabetes mellitus are associated with a greater severity of erectile dysfunction. These results emphasize the importance of incorporating routine sexual health assessment into comprehensive diabetes care to facilitate early identification and appropriate management of sexual dysfunction. Healthcare professionals, particularly nurses, are encouraged to provide regular screening, counseling, and education regarding sexual health as part of holistic diabetes management. Future studies should include larger and more diverse populations and incorporate additional clinical variables to further strengthen the evidence on sexual dysfunction among patients with diabetes mellitus.

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