Assessment of Erectile Dysfunction in Diabetic Men: Prevalence, Severity, and the Role of Nursing Care

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Abstract

Aim: This study intended to evaluate the prevalence and intensity of erectile dysfunction in men with diabetes.

Method: The sample included 128 diabetic men, and data were gathered using a personal information form along with the 5-item version of the International Index of Erectile Function scale.

Results: The level of erectile dysfunction was 16.95±2.07 (mild-moderate) and erectile dysfunction was detected in all individuals participating in the study.

Conclusion: In conclusion, nurses should take the patient's medical history into consideration when evaluating erectile dysfunction and evaluate the general health status. Healthcare providers should deliver education and counseling, ensuring that both the patient and their spouse are informed about appropriate treatment options. In nursing practice, it is essential to adopt an individualized approach and develop a personalized care plan. This way, erectile dysfunction in diabetic men can be effectively managed, and the patient's quality of life can be improved.

Keywords: Diabetes, erectile dysfunction, nursing.

Diyabetik Erkeklerde Erektil Disfonksiyonun Değerlendirilmesi: Prevalans, Şiddet ve Hemşirelik Bakımının Rolü

Öz

Amaç: Bu çalışmanın amacı, diyabetik erkeklerde erektil disfonksiyonun sıklığını ve düzeyini belirlemektir.

Yöntem: Çalışmanın örneklemini 128 diyabetik erkek oluşturmuştur. Çalışmanın verileri, kişisel bilgi formu ve Uluslararası Cinsel Fonksiyon İndeksi 5 soru versiyonu ölçeği kullanılarak toplanmıştır.

Bulgular: Erektil disfonksiyon düzeyi 16.95±2.07 (hafif-orta) olarak belirlenmiş ve çalışmaya katılan tüm bireylerde erektil disfonksiyon saptanmıştır.

Sonuç: Sonuç olarak, hemşireler, erektil disfonksiyonu değerlendirirken hastanın tıbbi geçmişini göz önünde bulundurmalı ve genel sağlık durumunu değerlendirmelidir. Eğitim ve danışmanlık sağlayarak

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hastayı ve eşini uygun tedavi seçenekleri konusunda bilgilendirmelidir. Hemşirelik uygulamalarında bireysel bir yaklaşım benimsemek ve kişiselleştirilmiş bir bakım planı oluşturmak önemlidir. Bu şekilde, diyabetli erkeklerde erektil disfonksiyon sorunu yönetilebilir ve hastanın yaşam kalitesi iyileştirilebilir.

Anahtar Sözcükler: Diyabet, erektil disfonksiyon, hemşirelik.

Introduction

Diabetes is a global public health problem and a metabolic disease characterized by microvascular and macrovascular complications with high morbidity and mortality rates that significantly reduce the quality of life of the individual[1-4]. Diabetes often impacts sexual health, with sexual dysfunction, especially erectile dysfunction (ED) in men, being a common concern. The rising prevalence of diabetes among men highlights the need for research and interventions addressing both general and sexual health[5]. Assessing the prevalence of erectile dysfunction in men with diabetes necessitates a holistic approach that encompasses both sexual and general health considerations.

Epidemiological investigations demonstrate an increasing global prevalence of diabetes in men[6-9]. As a result of this increase in its prevalence in diabetic men, it can cause erectile dysfunction, and this can significantly affect the quality of life of the individual.

Diabetes is a critical intersection of nursing and internal medicine care today, and the expertise of internal medicine nurses in this area plays a vital role in assessing the complications of diabetes, patient follow-up, and providing individualized care. Internal medicine nurses play a crucial role in delivering holistic care to support patients in managing diabetes-related ED. This approach enables nurses to perform thorough assessments, oversee treatment plans, and enhance patient education[10,11]. At this juncture, it is vital for nurses to comprehend the influence of diabetes on sexual health and to enhance patient understanding regarding this issue.

The complexity of erectile dysfunction leads internal medicine nurses to adopt an approach that is sensitive to both physical and psychosocial factors. Nurses play an important bridging role in sensitizing patients to sexual health issues, understanding their concerns, and providing appropriate support. In this context, nursing interventions should include not only medical treatment but also guidance on lifestyle changes[12].

This study seeks to ascertain the prevalence of erectile dysfunction among diabetic males and to assist nurses in developing care strategies tailored to this population. The study's findings will not only enhance the literature but also strengthen nursing practice by promoting more effective approaches to managing these two significant health concerns.

Material and Methods

This cross-sectional, descriptive study included a sample of 128 diabetic individuals who were 18 years or older and voluntarily consented to participate. Individuals with comorbid conditions beyond diabetes were excluded. Data were gathered via face-to-face questionnaires at a state hospital's outpatient clinic between July 10, 2023, and November 24, 2023.

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Data Collection Tools

The study utilized a 5-question version of the International Sexual Function Index Scale alongside a personal data form that included demographic information (age, marital status, education level) and clinical details (years with diabetes, medications used).

International Index of Erectile Function (IIEF-5) Questionnaire: The IIEF-5 was created in 1997 as a tool to evaluate male sexual function[13], with validation supporting its use in extensive multicenter clinical research. The Turkish adaptation of the International Sexual Function Index was completed by the "Turkish Andrology Association"[14]. The scale ranges from 5 to 25, with specific scoring classifications: 5-7 points indicate severe ED, 8-11 indicate moderate ED, 12-16 indicate mild-moderate ED, 17-21 indicate mild ED, and 22-25 indicate no ED.

Ethical Statement

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Data Analysis

Data analysis was performed using IBM SPSS Statistics 26.0. Descriptive statistical methods (mean, standard deviation, frequency, and percentage) were used, along with the Student's T-test for comparing normally distributed data and the Mann-Whitney U test for non-normally distributed data. For variables with more than two groupings, one-way ANOVA was applied to normally distributed data, while the Kruskal-Wallis test was used for non-normal distributions. Correlations between variables were analyzed using Pearson and Spearman correlation methods, and the Chi-square test was used to assess associations. The 95% confidence interval and a significance level of $p<0.05$ were applied in the analysis.

Results

Personal data of the participants and IIEF-5 total score are shown in Table 1. The age of the individuals was 58.05±7.91 years, 85.9% were married, 57.1% were primary school graduates, the mean diabetes year was 7.81±3.63, and the IIEF-5 total score was 16.95±2.07 (mild-moderate). In addition, erectile dysfunction was found in all men who participated in the study (100%) (Table 1).

Table 1. Participants' Personal Data, IIEF-5 Total Score (n=128)

	n	**%**
Age (years)	58.05±7.91	
Marital status		
Single	18	14.1
Married	110	85.9
Year of diabetes	6.91± 3.66	
Education level		
Literate	20	15.6
Primary school graduate	73	57.1

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High school graduate	32	25.0
University graduate	3	2.3
Medicines used		
Insulin	19	14.8
Oral antidiabetic drug	71	55.5
Both insulin and oral antidiabetic drugs	18	14.1
He's just on a diet	20	15.6
IIEF-5 (average)	16.95±2.07 (determined min 11-max 20 points)	

Descriptive statistical methods (mean, standard deviation, frequency, percentage)

The relationship between the personal characteristics of the individuals and the total score of the IIEF-5 is shown in Table 2. There is a significant correlation between age, years of diabetes, medications used, educational status, and IIEF-5 ($p<0.05$). The severity of ED increased with increasing age and years of diabetes. ED is higher in insulin users. ED decreases with increasing educational status (Table 2).

Table 2. The Relationship Between Participants' Personal Characteristics and IIEF-5 Total Scores (n = 128)

	IIEF-5 Total Scores	**P**
Marital status**		
Single	17.06±2.02	0.137*,***
Married	16.28±2.27	
Age**		
≥58	16.54±2.13	**0.008***,**
<58	17.52±1.86	
Year of diabetes**		
≥6	16.57±2.12	**0.010***,***
<6	17.52±1.87	
Medicines used***		
Insulin	16.16±1.77	**0.047***,*****
Oral antidiabetic drug	16.83±2.19	
Both insulin and oral antidiabetic drugs	17.17±1.79	
He's just on a diet	17.95±1.82	
Education level***		
Literate	15.90±2.40	**0.010***,****
Primary school graduate	16.99±1.93	
High school graduate	17.69±1.85	
University graduate	15.33±2.51	

Descriptive statistical methods (mean, standard deviation)*, Student T test**, Mann-Whitney U test***, ANOVA**** and Kruskal-Wallis*****

The correlation between age, years of diabetes mellitus, and IIEF-5 total score is shown in Table 3. A negative correlation was found between age and IIEF-5 and between

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diabetes year and IIEF-5 ($p<0.05$). The severity of ED increased with increasing age and years of diabetes.

Table 3. Correlation between Age, Years of Diabetes and IIEF-5 Total Score of Individuals

		Age	Year of diabetes	IIEF-5
Age	**r**	1	0.689	-0.278
	p		**0.001**	**0.001**
Year of diabetes	**r**	0.689	1	-0.228
	p	**0.001**		**0.010**
IIEF-5	**r**	-0.278	-0.228	1
	p	**0.001**	**0.010**	

Pearson and Spearman correlation analysis

Discussion

Diabetes, marked by elevated blood glucose levels, ranks among the most prevalent metabolic diseases globally. Its long-term complications encompass microangiopathy, macroangiopathy, neuropathy, and sexual dysfunction affecting both men and women. In diabetic men, erectile dysfunction stands out as a primary form of sexual dysfunction, with a prevalence rate 3.5 times higher than in non-diabetic men. Key risk factors for diabetes mellitus and its complications include obesity, a sedentary lifestyle, and excessive calorie intake[6]. In this study, diabetic men exhibited mild-moderate ED with a mean score of 16.95±2.07 (Table 1). Similarly, Corona et al. reported prevalence rates of ED in diabetic men as follows: 19.4% for mild, 15.4% for mild-moderate, 10.4% for moderate, and 21.6% for severe ED[15]. Tamrakar et al. found the prevalence of ED in male patients with Type 2 DM to be 76.87% at varying levels[16]. The study result is similar to the literature.

In this study, the average age of participants was 58.05±7.91 years, and the average duration of diabetes was 7.81±3.63 years. Thus, a cut-off of 58 years for age and 7 years for diabetes duration was applied when examining the link between age and ED. Analysis revealed that ED severity was greater in individuals aged 58 and above. Age is a significant risk factor for ED, with prevalence increasing as men age, from 1-10% in those under 40 years to 50-100% in men over 70 years[17,18]. The findings of this study align with those documented in the literature. Erectile dysfunction is recognized as a common long-term complication of diabetes[6], with its severity largely influenced by the type and duration of diabetes, treatment methods, and accompanying health conditions[19,20]. Consequently, as the duration of diabetes extends, the severity of ED tends to increase as well. Decrease in physical activity with increasing age, obesity with sedentary life, and many accompanying chronic diseases have negative consequences on sexual life. Individuals often have difficulty expressing this and do not want to apply to a health institution for this. Unidentified ED can lead to depression, anxiety, and a reduced quality of life for the individual.

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In this study, ED severity was found to be higher in insulin users and individuals with lower education levels. Gobena et al. found that low glycemic control was associated with ED level[21]. Literature information supports the results of this study. It is thought that individuals with low health literacy have difficulty maintaining blood glucose control. Although education level does not primarily affect ED, it can be seen as a secondary cause. Since only three patients were university graduates, we think that this group is not sufficient to evaluate this group. In addition, although insulin use is a form of treatment mostly applied in Type 1 DM, it can also be applied in uncontrolled high glucose levels. Therefore, ED levels may have been higher in insulin users compared to other forms of treatment.

Many men do not want to report their complaints of ED to a healthcare professional. Therefore, especially in diabetic cases, nurses and physicians should question ED through history and clinical examination. Erectile dysfunction can be treated when it is detected[22], and this guidance is very important in improving the quality of life of the individual.

Conclusion

In conclusion, moderate ED in diabetic men is an issue that requires attention in nursing practice. Diabetes can affect blood flow in the genital area by causing vascular problems, which can lead to erectile dysfunction. When assessing this condition, nurses should consider the patient's medical history, assess general health status and communicate with the patient to understand symptoms. They should support the patient and his/her partner by providing education, counseling, and information about appropriate treatment options. They should also focus on achieving blood glucose control and improving overall health by providing guidance on diabetes management and lifestyle changes. It is important to take an individual approach to nursing practice, understand the patient's unique needs, and create a personalized care plan. Many men do not want to report their complaints about ED to a healthcare professional. Therefore, especially in diabetic cases, nurses and physicians should question ED with history and clinical examination. In this way, the problem of erectile dysfunction in men with diabetes can be managed and the patient's quality of life can be improved.

Ethical Statement

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Conflicts of Interest: The authors declare there is no conflicts of interest.

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