Impact of Diabetes on Sexual Health regarding Female dysfunction Patients

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ABSTRACT

Background Sexual dysfunction (SD) is one of the important problems in diabetes patients due to its complication effect on sexual function. The maternity nurse has an important role to assess the knowledge about needs for sexual health. **The study aimed** to assess how diabetes affects the sexual health regarding Female dysfunction Patients. **Subjects and Methods**: **design:** a descriptive cross-sectional research methodology was used. **Setting**: The study was conduct at the diabetes and obstetric outpatient clinic in two hospitals and five facilities in Port Said health care authority. **Subjects**: The study involved a purposeful sample of 178 female diabetic patients. **Tools of data collection:** Two instruments were used to gather data: (1) a pre-designed questionnaire sheet with questions on the patients' personal characteristics, medical histories, and current sexual problems, and (2) the female sexual function index (FSFI). **The Results*:*** According to the current study's total Mean SD score (19.5 3.7), the majority of the examined female patients had sexual dysfunction across all index domains. **Conclusion:** Severe sexual dysfunction was present in the diabetic female patients who were the subject of the study. **Recommendations:** Conducting in-service educational programs for maternal nurses on how to cope with sexual dysfunction for diabetic female patients. Implementing instructional sessions based on the PLISSIT model for diabetic female patients in all available clinics.

Key words: Diabetes, Female dysfunction patients, Sexual health.

INTRODUCTION

The prevalence of diabetes among adults aged 20 to 79 worldwide was predicted to be 10.5% (536.6 million) in 2021 and 12.2% (783.2 million) in 2045. The prevalence of diabetes was comparable across men and women, and it was highest in people aged 75 to 79 (Sun, et al., 2022). According to the International Diabetes Federation (IDF), the number of diabetic patients in Egypt is among the highest in the world (Gerges, Mohamed, Ramadan, & Afify, 2020).

One of the long-term effects of diabetes is sexual dysfunction. In accordance with Maiorino, Bellastella, and Esposito (2020), sexual health is determined by a person's personality, interpersonal interactions, cultural traditions, and religious beliefs. It also results from the combination of cardiovascular, neurological, and hormonal elements. The authors of Karimi-Valoujaei, Kashi, Yousefi, Nia, and Khani (2020), Women with DM may experience sexual dysfunction for a variety of reasons, including biological, psychological, social, and interpersonal factors. Adaptation in sexual interactions is one of the most crucial components in happiness and a high quality of life, making sexual concerns one of the most essential topics in marital life (Mirzaii, Dehlari, Foltani-Far & Saki, 2021).

Sexuality is related to the concepts such as body image, self-esteem, and sexual self-concept. Physical changes, individual, and social factors could affect it (Ziaei, Keramat, Kharaghani, Haseli, & Ahmadnia, 2022). Female Sexual Dysfunction (FSD) is a heterogeneous group of disorders characterized by clinically significant disturbances in sexual response or the experience of sexual pleasure DM2 (Zamponi, et al., 2020). Sexual dysfunction can negatively affect the quality of life and interpersonal relationships (Keshavarz, Karimi, Golezar, Ozgoli, & Nasiri, 2021).

According to Mehrabi et al. (2019), diabetic women's sexual health and life quality are much worse than those of women without the condition. Diabetes affects all phases of the sexual cycle response, including desire, arousal, lubrication, orgasm, and satisfaction (Barbagallo et al., 2020). Assessing sexual issues in order to offer proactive advice on treatment and the restart of sexual activity is one of the critical roles of nurses. Due to communication issues between nurses and women, nurses frequently fail to appropriately address this aspect of care (Goyal, & Jialal, 2021). Therefore, the inclusion

of pertinent questions within the nursing assessment allows the women the chance to address sexual wellbeing issues, favoring communication (Shahin, Gaafar & Alqersh, 2021).

Significance of the study

According to Mohammed (2020), diabetes causes 86,478 deaths annually in Egypt, with a frequency of 15.56% among persons aged 20 to 79. Recent research suggests that diabetic women are more likely to experience sexual dysfunction than non-diabetic women (Gerges, et al. 2020). Diabetes appears to affect women's natural sexual functioning. It is improper to talk about female sexuality in Egypt due to a number of cultural and historic barriers that prevent open conversations about sexual life, especially with female health care providers. Additionally, nothing is known about female sexual dysfunction in diabetic individuals. In a study conducted in Egypt, only a few studies addressed the functioning and dysfunction of women's sex (Mohamed, Mohamed, and Ashour, 2022). The purpose of this study is to evaluate how diabetes affects the sexual health of female diabetic patients.

AIM OF THE STUDY

To Assess Impact of Diabetes on Sexual Health regarding Female dysfunction Patients

Study objectives to:

- Assess sexual dysfunction for diabetes women.
- Assess impact of diabetes on Sexual Health regarding dysfunction.

SUBJECTS AND METHOD

A. Technical design

This design includes a description of the research design, setting, subjects, and tools of data collection.

Research design

A descriptive cross-sectional research design approach will be used to meet the aim of this study.

Study setting

The current study was carried out in the diabetic outpatient clinics in two hospitals and five centers connected to Port Said health care authority, including Al-Salam general hospital and El-zohor centeral hospital. These facilities—El-kwait center, Othman Ibn afan center, El-arab 1 center, El-manakh center, and El-arab 2 center—were chosen at random from 20 primary health care facilities that collectively serve the five districts of Port said.

Study Sample

The following criteria was used to include a purposive sample of 178 women in the study. The Daniel (1999) equation was used to determine women sample size. A foundation for analysis in the health sciences is biostatistics. edition seven. John Wiley & Sons, New York.

$$n = \frac{\mathrm{N} \times \mathrm{P}\,(1 - \mathrm{P})}{\mathrm{N} - 1 \times (\mathrm{d}^2 \div z^2) + \mathrm{P}\,(1 - \mathrm{P})}$$

Where, N=total population (400); Z, Class standard corresponding to the level of significance equal to 0.95 and 1.96; D = error percentage (=0.05); P= Ratio provides a neutral property = 0.50. Therefore,

$$n = \frac{400 \times 0.5\,(1-0.5)}{(400-1) \times (0.05^2 \div 1.96) + 0.5(1-0.5)} = 162$$

The estimated sample size is 162, after adding the (10%) to avoid dropped out and / incomplete responses or withdrawal, the final number for sample size will be = 162 +16= 178.

Inclusion criteria

- Married women who diagnosed diabetes
- Age 18-45 year.
- No pregnancy.

Tools for data collection:

Two data collection instruments were used:

1 - A structured interviewing questionnaire:

The study's creator created a questionnaire in Arabic. Three components make up this tool:

Part I: of the report covers the sociodemographic characteristics of the female patients and provides information on their age, education, occupation, family size, marital status, place of residence

Part II: Medical History: This section contains information on the length of diabetes, the kind of diabetes therapy, and diabetic complications.

Part III: Current Sexual Problem: This section contains information about current sexual difficulties, including their duration, circumcision, frequency of sexual activity, whether they are being treated for them, and the reasons for not doing so.

Scoring system

Responses to each question were reported and scored on 0–5 scale with 0 representing no sexual activity and 5 suggestive of normal sexual activity. For our study, an Arabic translation was used.

B- Operational design:

The study field of work was carried out through the following phases:

Preparation phase

After conducting a thorough literature research using books, articles, and online journals to build methods for data collecting, the instructional program will prepare during this phase. The evaluation of literature focuses mostly on sexual dysfunction, diabetes, and therapy sessions for sexual dysfunction in females.

Tool's validity

The tools was revised for clarity, relevance, comprehensiveness, understanding, and ease of implementation by a jury of seven experts (two professors, one assistant professor, and two lecturers from the department of maternity, gynecology, and obstetrics nursing at the aforementioned university). Modifications were made in accordance with their recommendations.

Tool's reliability

The dependability of data collection tools will examine. When the generated tools' dependability was evaluated, the correlation coefficient was (0.91).

Field work

Assessment phase

Data was collected after obtaining an official agreement from the directors of the hospitals. Meeting with diabetic's women will also be conducted on an individual basis to explain the objectives of the study and to gain their cooperation. Assessment tools by using (Tool I, Tool II and Tool III) To assessing practice.

Pilot study

Before the actual data gathering began, a pilot study was carried out. 10% (18) of the entire sample of diabetic female patients participated in the pilot study. These weren't left out of the study's primary sample. The goal of the pilot study was to evaluate the tools' usability, feasibility, and clarity as well as to determine how long they would take to complete. Finding any challenges or issues that might interfere with the data collection procedure was also helpful. Adaptations that were required were made in light of the pilot study's findings.

Ethical considerations

An approval was taken from the Research Ethics Committee of the Faculty of Nursing, Port Said University code no. (**NUR 6/8/2023 (28**)**.** The purpose of the study was explained to the participants before obtaining the written consent to share in the

study. A brief explanation of the study was given to assure the participants that all information obtained would be kept strictly confidential and used only for the purpose of the study. Participants were informed that; they have the right to participate or withdraw from the study at any time. Code numbers instead of names of the participants were used for identification purposes. This measure ensured the participants would not be identified in the public reports.

C- Administrative design:

Official letters were sent by the dean of the nursing faculty to the hospitals (AL-Salam Port-Said General Hospital, El-Zohor Central Hospital), as well as to five centers in the port-Said city (El-kwait Center, Othman Center, El-arab 1 Center, El-manakh Center, and El-arab 2 Center), requesting their cooperation and permission to carry out the study and outlining its purpose. Furthermore, prior to beginning data collection, patients' verbal agreement was acquired.

D. Statistical design

After the data gathering was finished, it was tallied, categorized, and digitized in Microsoft Excel 2021 before being statistically analyzed. On a computer, the data were analyzed using SPSS version 28, a statistical tool for social research. For qualitative and quantitative variables, respectively, means and standard deviations were used to present the data using descriptive statistics. The reliability of the satisfaction scale was evaluated using the internal consistency of the scale by computing the Cronbach alpha coefficient. The chi-square test was utilized to compare qualitative category variables. The results were deemed significant when the p-value was less than 0.05, highly significant when it was less than 0.001, and non-significant when it was greater than 0.05.

RESULTS

Table (1) show that 87.6% of the women in the study were unemployed, and 77.3% of them were self-employed. Of the women in the study, 49.4% were in the age range of 29 to 38, and 47.8% had completed secondary or intermediate education.

Table (2) reveals that 51.1% of the examined women's husbands were in the age range of 29 to 38 years old, and 41.0% had a basic education. Additionally, 60.7% of

husbands were self-employed, and 82.6% were responsible for the family's financial support. 52.2% of them were married between the ages of 20 and 30, and 70.7% of the women in the study had only one marriage, with a mean marriage duration of 11 to 15 years for 46.1% of them. In addition, the chart showed that 65.7% of the participants in the

Table (3) clarifies that, 92.7% of the examined women had type I diabetes, whereas 62% had regular diabetes, and 48.3% had diabetic symptoms for one to five years before seeking medical attention. In addition, 64.6% of them required insulin for therapy, 78.7% of them had complications from diabetes, 76.4% had chronic illnesses, and 55.6% took additional medications.

Table (4) shows that 56.2% of the women in the study had 1-3 living children, and that 71.9% of them underwent cesarean delivery. Of the women in the study, 70.8% were pregnant for between two and three times, and 68.5% gave birth to between two and three babies.

Table (5) shows that 86.0% of the women in the study reported no issues with their sex lives, whereas 36.0% of the women who admitted to having issues said that the issue has existed for more than a year. Additionally, 54.5% of the women in the study underwent circumcision, and 60.7% of them have a sexually transmitted disease. The current table also shows that 50.6% of women had irregular sexual activity, 63.5% didn't use sexually stimulating drugs, and 57.9% turned to their families when they experienced sexual difficulties.

Table (6) shows the study's female patients' sexual function index, which the majority of them had sexual dysfunction in each of the four categories (94.4%, 93.8%, 93.3%, and 90.4%, respectively).

Figure (1) shows the overall distribution of the study's female patients' sexual function index. 93% of them reported having issues across the board, with a mean SD of (19.5 3.7).

Table (7) show that There was no statistically significant correlation at any dimension for the medical history of the female patients evaluated and their sexual function index.

Table (1): sociodemographic characteristics of the studied female patients with diabetes (n=178)

	N	%
Age (Years)		
18 – 28	23	12.9
29 – 38	88	49.4
39 -45	67	37.6
Mean ±SD	37.3 ±6.8	
Educational level		
Read and write	11	6.2
Basic education	72	40.4
Secondary or intermediate education	85	47.8
University qualification or higher	10	5.6
Occupation		
Working	22	12.4
House wife	156	87.6
If the answer is yes, indicate the type of work (n=22)		
Employee	5	22.7
Self – Employed	17	77.3

Table (2): Socio-demographic characteristics of the husband (n=178).

	N	%
husband Age		
20 – 28	10	5.6
29 – 38	91	51.1
39 or More	77	43.3
husband educational level		
Read and write	54	30.3
Basic education	73	41.0
Secondary or intermediate education	29	16.3
University qualification or higher	22	12.4
husband Occupation		
Employee	66	37.1
Pension	4	2.2
Self – Employed	108	60.7
Family income		
Enough	44	24.7
Not enough	99	55.6
It is sufficient and overflowing	35	19.7
Responsibility for Revenue		
Husband	147	82.6
Both	31	17.4
The age of marriage		
Less than 20	85	47.7
20 – 30	93	52.2
The number of marriages		
One	126	70.7
Two	52	29.2
Duration of marital life (Years)		
Less than 5	28	15.7
5 – 10	18	10.1
11 – 15	82	46.1
More than 15	50	28.1
Number of children		
1 – 2	53	29.8
3 – 4	117	65.7
More than 4	8	4.5

	N	%
Number of residents in the house		
3 – 4	54	30.3
5 – 6	115	64.6
More than 6	9	5.1
Number of rooms in the house		
One room	3	1.7
2 – 3 rooms	168	94.4
More than 3	7	3.9

Table (3): Distribution of the studied female patients with diabetes according to their medical history (n=178).

	N	%
When did your diabetes start?		
Less than a year	46	25.8
From one year to 5 years	86	48.3
More than 5 years	46	25.8
Examination of diabetes		
Regular	132	74.2
Irregular	46	25.8
Type of diabetes		
Diabetes type I	165	92.7
Diabetes mellitus type II	13	7.3
Regularity of diabetes		
Regular	111	62.4
Irregular	67	37.6
Type of treatment		
Insulin	115	64.6
Discs	58	32.6
Diet	5	2.8
Are there complications from diabetes?		
Yes	140	78.7
No	38	21.3
Do you suffer from chronic diseases?		
Yes	42	23.6
No	136	76.4
Do you take any other medications?		
Yes	99	55.6
No	79	44.4

Table (4): Distribution of the studied female patients with diabetes according to their pregnancy history (n=178)

	N	%
The number of pregnancies		
Once	17	9.6
2 – 3	126	70.8
More than 3	35	19.7
The number of births		
Once	11	6.2
2 – 3	122	68.5
More than 3	45	25.3
Number of abortions		
None	46	25.8
Once	36	20.2
Twice	81	45.5
More than twice	15	8.4
Number of living children		
None	9	5.1
1 – 3	100	56.2
More than 3	69	38.7
Method of delivery		
Normal	50	28.1
Cesarian	128	71.9

Table (5): Distribution of the studied female patients with diabetes according to their sexual history (n=178).

	N	%
Are there any current problems in sexual relations?		
Yes	25	14.0
No	153	86.0
If yes, when did this problem start? (n=25)		
Less than a year	9	36.0
From one year to 3 years	8	32.0
More than 3 years	8	32.0
Do you suffer from sexually transmitted diseases?		
Yes	70	39.3
No	108	60.7
Was circumcision performed?		
Yes	81	45.5
No	97	54.5
Number of intercourse times		
Regular	88	49.4
Irregular	90	50.6
Do you take drugs that help sexual intercourse?		
Yes	65	36.5
No	113	63.5
Whom do you turn to for help when you have sexual problems?		
Medical assistance	69	38.8
The family	103	57.9
Friends	6	3.4

Table (6): Relation between the female sexual function index at pre and post counseling sessions (n=178)

Domains	n	%
Desire Dysfunction		
Yes	161	90.4
No	17	9.6
Mean ±SD	3.2 ±0.8	
Arousal Dysfunction		
Yes	167	93.8
No	11	6.2
Mean ±SD	3.3 ±0.7	
Lubrication Dysfunction		
Yes	168	94.4
No	10	5.6
Mean ±SD	3.3 ±0.8	
Orgasm Dysfunction		
Yes	168	94.4
No	10	5.6
Mean ±SD	3.3 ±0.7	
Satisfaction Dysfunction		
Yes	166	93.3
No	12	6.7
Mean ±SD	3.2 ±0.6	
Pain Dysfunction		
Yes	167	93.8
No	11	6.2
Mean ±SD	3.2 ±0.7	

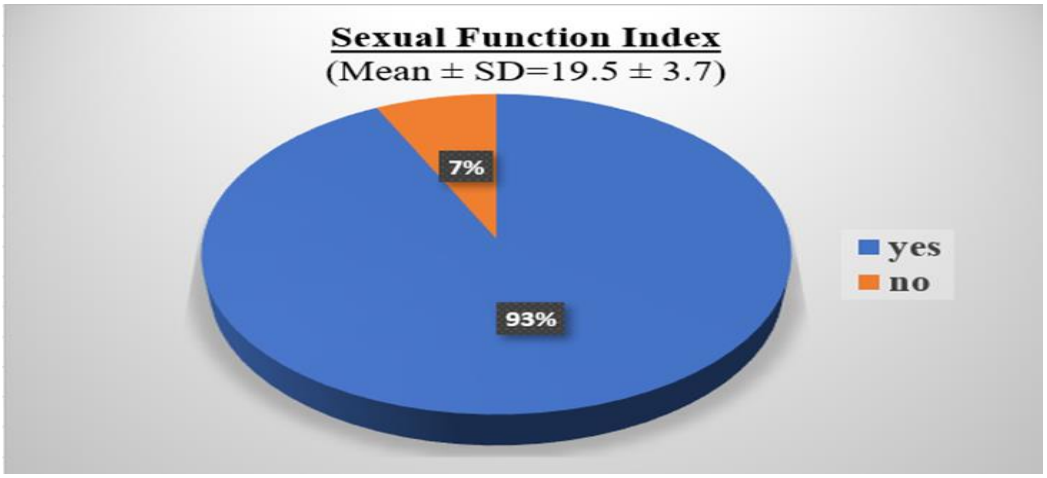

Figure 1. Total the female sexual function index of the studied female patients

Table (7): Relation between the medical history of the women and female sexual function index (n=178).

	Pre – Intervention		Post – Intervention	
	Mean ±SD	**Significance test**	**Mean ±SD**	**Significance test**
When did your diabetes start?				
Less than a year	19.06 ±3.76	F=1.305, P=0.274	22.38 ±3.96	F=1.097, P=0.336
From one year to 5 years	19.29 ±3.63		22.20 ±4.14	
More than 5 years	20.20 ±3.68		21.23 ±4.31	
Examination of diabetes				
Regular	19.32 ±3.65	T=0.869, P=0.386	21.71 ±4.17	T=1.534, P=0.127
Irregular	19.87 ±3.77		22.80 ±3.98	
Type of diabetes				
Diabetes type I	19.53 ±3.72	T=0.835, P=0.405	21.84 ±4.18	T=1.826, P=0.070
Diabetes mellitus type II	18.64 ±3.08		24.00 ±2.97	
Regularity of diabetes				
Regular	19.08 ±3.67	T=1.815, P=0.071	21.98 ±4.11	T=0.052, P=0.959
Irregular	20.11 ±3.64		22.02 ±4.22	
Type of treatment				
Insulin	19.01 ±3.64	F=2.567, P=0.080	22.07 ±4.11	F=0.649, P=0.524
Discs	20.32 ±3.69		21.70 ±4.25	
Diet	20.12 ±3.39		23.82 ±3.94	
Are there complications from diabetes?				
Yes	19.08 ±3.74	T=0.730, P=0.467	21.62 ±3.95	T=0.621, P=0.535
No	19.57 ±3.67		22.10 ±4.20	
Do you suffer from chronic diseases?				
Yes	19.21 ±3.62	T=0.507, P=0.613	22.06 ±4.09	T=0.115, P=0.909
No	19.54 ±3.71		21.98 ±4.17	
Do you take any other medications?				
Yes	19.86 ±3.97	T=1.597, P=0.112	21.79 ±4.21	T=0.723, P=0.470
No	18.97 ±3.25		22.25 ±4.07	

DISCUSSION

It is well-known that diabetes mellitus (and its micro- and macro-vascular complications) and erectile dysfunction are related, and (Corona, et al. (2020) suggest that the presence of hypogonadism may exacerbate sexual dysfunction and quality of life due to the link between hypogonadism and decreased libido and depressive symptoms (Malakouti, Golizadeh, Mirghafourvand and Farshbaf-Khalili, 2020). The risk of developing complications from diabetes mellitus is the similar for both sexes, although sexual dysfunction in women and its risk factors has gotten less research and attention than in men (Masood et al., 2021). In this sense, the current study sought to evaluate how diabetes affects the sexual health of women who have the disease. The current study reveals that more than two fifths of women with diabetes developed the disease between

one year and five years prior, and more than two thirds of them regularly checked their blood sugar levels. The majority of the women who had diabetes had type I diabetes, and more than half of them had regular diabetes. More over half of them took insulin for the treatment of their diabetes.

The majority of them had chronic illnesses and the majority of them had complications from diabetes. These findings were supported by Abd-elatief, Mohasib, and Mohamed's (2019) study of the impact of counseling model on sexual dysfunction among women with diabetes and their sexual quality of life in Minia. They noted that more than one third of the studied sample had diabetes since less than 10 years and that slightly more than three quarters of diabetic women had type 1 diabetes mellitus, which was treated by insulin only. According to Arafa, et al. (2018), type one diabetic women in Egypt have a higher prevalence of sexual dysfunction than type two diabetic women do. This is because type one diabetes is more likely to manifest before the age of 40. The data about the pregnancies of the female patients analyzed revealed that the majority of the women had two to three pregnancies, and more than two thirds of them had two to three deliveries. Additionally, in terms of the number of living children, more than half of them had one to three children, and the majority were born via cesarean section. These findings are in line with those of Gerges et al. (2020), who examined sexual dysfunction in women with diabetes in Banha and found that more than two thirds of the women under investigation had one to three children. However, contrary to the findings of the current study, more than two thirds of the women had vaginal deliveries. The current study found that the majority of the female diabetes patients it examined experienced sexual dysfunction. This result was in agreement with Kamrul-Hasan, et al (2023) findings from their study of sexual dysfunction in women with type 2 diabetes mellitus in Bangladesh in 2023, which found that the majority of the diabetes-suffering women in the study reported experiencing sexual dysfunction and significantly underperformed in the orgasmic, desire, lubrication, and satisfaction domains. And made it clear that having diabetes for a long time was the main cause of orgasm issues and unpleasant sex. In terms of the relationship between the female sexual function index of the examined female patients with diabetes and their current medical history, the current results indicated that no significant relationship was observed between sexual function and any of the medical history items. The same outcome described by Gerges et al. (2020) adds that there was no

discernible relationship between sexual function, the length of diabetes, the types of medication used, and glucose management.

CONCLUSION

Based on the findings of the present study, it can be concluded that:

The majority of the female patients in the study experienced sexual dysfunction in each of the four examined domains (94.4%, 93.8%, 93.3%, and 90.4%, respectively), and most of them reported having issues in each area with a mean SD of (19.5 3.7). The sexual function index scores of female patients did not significantly correlate with their current medical histories, however.

RECOMMENDATION

Based on the results of the present study, the following recommendations were suggested:

- Given the importance of sexual function to the health, development, and strength of the family, it could be advantageous to teach Egyptians about sexuality through educational programs and counseling on sexual dysfunction.
- Increase women's knowledge of variables affecting their sexual health, how to manage them, and how to encourage them to ask for assistance & talk about their sexual concerns with healthcare professionals.
- Giving nurses access to in-service courses that effectively enlighten them on sexuality, including its nature, management of sexual process dysfunction, couple therapy, and sexual counseling.
- PLISSIT model-based sexual counseling should be incorporated into nursing undergraduate programs, along with instruction on how to use it while counseling diabetic women about their sexual dysfunctions.

Limitation of the Study

Additionally, it was challenging to get data on sexual dysfunction since patients find it embarrassing to discuss such a touchy subject.

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تاثير مرض السكري على الصحة الجنسية لدى السيدات المصابات بالسكرى

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الخـــلاصـــــــــــــة

يعد الضعف الجنسي هو شكوى أمراض النساء الشائعة بين النساء المصابات بالسكري بسبب تأثيره المضاعف على الوظيفة الجنسية. وتلعب ممرضة الأمومة دورا مهما في تقييم المعرفة للسيدات حول احتياجات الصحة الجنسية.لذلك تهدف الدراسة الحالية إلى تقييم كيفية تأثير مرض السكري على الصحة الجنسية لمرضى السكري من الإناث. تم استخدام تصميم بحثى شبة تجريبى لاجراء الدراسة . حيث أجريت الدراسة في العيادات الخارجية لمرض للسكري وامراض النساء في عدد 2 مستشفي وخمسة مراكز في مدينة بورسعيد. و شملت الدراسة 178 سيدة مريضة بالسكري. وقد تم استخدام أداتين لجمع البيانات: (1) ورقة استبيان مصممة مسبقا تحتوي على أسئلة حول الخصائص الشخصية للمرضى والتاريخ الطبي والمشاكل الجنسية الحالية ، و (2) مؤشر خلل الوظيفة الجنسية للإناث (FSFI). وقد اظهرت نتائج الدراسة ان وفقا لإجمالي متوسط درجة SD للدراسة الحالية (3.7 19.5) ،الخلاصة : قد تخلصت الدراسة بان غالبية المريضات اللواتي تم فحصهن يعانين من خلل وظيفي جنسي في جميع المجالات وكان العجز الجنسي الشديد موجودا في مريضات السكري اللواتي كن موضوع الدراسة. واوصت الدراسة بتنفيذ برامج تثقيفية أثناء الخدمة لممرضات الأمهات حول كيفية التعامل مع العجز الجنسي لمريضات السكري. وتنفيذ جلسات تعليمية بناء على نموذج PLISSIT لمريضات السكري في جميع العيادات المتاحة.

الكلمات المرشدة : الضعف الجنسي، مؤشر خلل الوظيفية الجنسية، مرض السكري.