Self-care Practices of Diabetic Foot Patients at Benha University Hospital

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Abstract

Background: Diabetic foot is a foot that exhibits any pathology that result directly from diabetes mellites or any long -term complications of DM which lead to diabetic foot amputation when delaying in treatment. **Aim of the study:** Was to assess self-care practices of diabetic foot patients at Benha University. **Research design:** A descriptive research design was utilized to conduct this study. **Setting:** This study was conducted at Diabetic Patient Clinic of Benha University Hospital in Benha City. **The sample:** A systematic sample of 200 diabetic foot patients over 50 years old. **Tools:** One tool was used in this study. **1):** A structured interviewing questionnaire which consists of four parts. **Part (1):** Demographic characteristics of diabetic foot patients, **Part (2):** Medical history of diabetic foot patients. **Part (3):** Patients' knowledge about diabetes Mellitus and diabetic foot. **Part (4):** Diabetic patients' reported practices toward diabetic foot self- care. **Results:** 46.5% of studied patients aged from60<70 years old, 47.5% of them had basic education, and 50% of them were male.52% of studied patients had diabetes mellitus from 1to less than 5 years and 35% of them were visiting The Diabetic Clinic every three weeks Also 49.5% of studied patients had poor total knowledge level, while; 51% of them had satisfactory total reported self-care practices regarding diabetic foot care. **Conclusion:** There was highly statistically positive correlation between total knowledge of studied patients, their total reported practices regarding care of diabetic foot. **Recommendations:** Develop health educational program for diabetic foot patients to increase their knowledge and self -care practices regarding diabetic foot.

Keywords: Diabetic foot, Patient practices, Self- care.

Introduction

Diabetes Mellitus (DM), is a group of metabolic disease which characterized by high glucose levels, resulting in defect in insulin secretion, insulin action or both and disturbance of carbohydrate, fats and protein metabolism. Diabetes can be classified into type 1 diabetes, type 2 diabetes, gestational diabetes and specific types of diabetes due to other causes (Monogenetic diabetes syndromes, disease of exocrine pancreas and drug or chemical induced diabetes). Over the long- term high glucose levels are associated with damage to the body and failure of various organs and tissues **(Chakraborty et al., 2021)**.

A diabetic foot ulcer is the most frequently recognized complication of diabetes mellitus that consists of lesions in the deep tissues associated with neurological disorders and peripheral vascular disease in the lower limbs. It is a full-thickness wound penetrating through the dermis (the deep vascular and collagenous inner layer of the skin) located below the ankle in a DM patient. Diabetic foot ulcers mainly based on wound depth and classified into six wound grades. These include Grade 0 no ulcer, but the foot is at risk for ulceration, Grade 1 superficial ulceration, Grade 2 ulcer with deep infection, but without the involvement of the bone, Grade 3 ulcer with osteomyelitis, Grade 4 localized gangrene, and Grade 5 gangrene of the whole foot (**Tuha et al.,2021).**

About 15% of diabetic patients will develop foot ulcers in their lifetime and, if not appropriately treated, leads to chronic ulcer, chronic osteomyelitis, and finally amputation in 85% of the cases. According to The International Working Group on the Diabetic Foot, in every 20 seconds, somewhere in the world loses their leg due to its complication and after amputations, over half of these people will die within 5 years. Most foot or leg amputations can be prevented or at least delayed just by foot self-care at home. **(Mekonen et al., 2020).**

Self-care practices is linked to the quality of life of patients with diabetes, and it is important to know related factors to improve it, detailed items for measuring the self-care behaviors of diabetes patients include general diet, foot care, blood glucose monitoring, diabetes medication and physical activity. It influenced by economic condition, employment, caregiver presence, self-efficacy, type of coping mechanism and family engagement. Type 2 diabetes is a degenerative disease, the majority of patients are elderly who manage their diseases with the family, and perceived family support positively affected patients and their self-care behaviors **(Kim et al., 2020).**

Community health Nurses are health care providers who actively involved in prevention and early detection of diabetes and its complications. The nurses' role could be in health care, health, community education, health systems management, patient care and improving the quality of life. Community Health Nurses play their educating role in the field of prevention of diabetic foot, foot care and preventing from foot injury. In care dimension, nurses responsible for early detection of any changes in skin and foot sensation, foot care, dressing and apply novel technology **(Doenges et al., 2019).**

Significance of the study:

Egypt is currently in the top countries with the highest number of people with diabetes. Diabetic foot patients are one of major complications of diabetes. The risk developing diabetes foot ulceration is 10-155. Most of foot ulcers (60-80%) will heal, while 10-15% of them will remain active, and 5-24% of them will end with limb amputation within 6-18 months **(Abu-Elenin et al., 2018).**

Aim of the study:

This study aimed to assess self-care practices of diabetic foot patients at Benha University Hospital.

Research questions:

1-What is the knowledge of diabetic patient regarding diabetic foot?

2-What are the self-care practices of diabetic patients regarding diabetic foot?

3-Is there a relation between socio-demographic characteristics of diabetic patients and their self-care practices regarding diabetic foot?

4- Is there a relation between diabetic patients' self-care practices regarding diabetic foot, and their knowledge?

Subjects and methods:

Research design:

A descriptive study design was utilized to conduct this study.

Setting:

This study was conducted at Diabetic Foot Outpatient Clinic at Benha University Hospital, it consists of (11) Outpatient Clinics in one floor and diabetic foot clinic in the second floor which started separated from 11\2021.There are nurses and physicians in the clinic who attended two days per week to give care for patients. The researcher chose this setting because of the large number of patients attended this hospital to be cared and follow up the wounds of foot.

Sampling:

A systemic random sample was used in the study, the total number of patients at the previous mentioned setting were 960 patients. Patients were placed in a list with a serial number, and then the starting point was randomly selected, after that each patient was selected every 5 patients to be in the sample. The total number of the sample was 200 patients with inclusion criteria, patients age was over 50 years old.

Tools of data collection:

Tool (I): A structured interviewing questionnaire:

It was developed by the researchers based on reviewing related literatures and it was written in simple clear Arabic language. It is comprised of four parts.

First part: Was concerned with demographic characteristics of diabetic foot patients. It comprised of 8 questions (Sex, age, marital status, educational level, occupation, monthly income, family type and residence).

Second part: Was concerned with diabetic patients' medical history. It comprised of 9 questions (onset of diabetes, frequency of visiting diabetic clinic, number of hospitalization due to diabetes mellites, medical intervention to diabetic foot, current complains, types of treatment, presence of other chronic diseases, factors that precipitate of diabetic foot, stages of diabetic foot).

Third part: It consisted of two sections: **section (1):** Was concerned with studied patients' knowledge regarding diabetes mellitus. It comprised of 7 questions (meaning of diabetes, types, causes, risk factors, manifestation, diagnosis, complications).

Section (2): Was concerned with studied patients' knowledge regarding diabetic foot. It comprised of 9 questions (meaning of diabetic foot, causes, manifestations, stages, complications, treatment, prevention, medical care, importance of performance of complete and periodic medical care for diabetic foot).

Scoring system:

The scoring system for studied patients' knowledge was calculated as follows:(2) score for correct complete answer, and (1) score for correct in complete answer, while (0) for don't know. For each area of knowledge, the score of items was summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a present score. The total score of knowledge =32points. The total score was considered good when score of total knowledge ≥75% (≥24 point), and considered average if it equals 50<75% (16<24 points), while considered poor when the total score was <50% (<16 point).

Fourth part: Was concerned with diabetic patients' reported practices toward diabetic foot self-care through asking questions regarding care of foot. which divided into six sections: **Personal hygiene:** It comprised of seven questions, **Foot care:** It comprised of eleven questions, **Nutrition:** It included eleven questions, **Exercise:** It included twelve questions, **dealing with difficult walking:** It included four questions and **Therapeutic regimen and diabetes follow up:** It included eleven questions.

Scoring system:

The reported self -care practices was scored by two level of answers: done or not done. These were respectively 1.0. The scores of the items were summed up and the total divided by the number of the items, giving a mean score for the part. These were converted into a percent score. The total practice score =56

The total practices scores were satisfactory if the score of the total practices ≥60% (≥33 points), while considered unsatisfactory if it is <60% (<33 points).

Reliability of the tool:

Reliability of the tool was applied by the researchers for test the internal consistency of

the tool by administration of the same tools to the same subjects under similar condition on one or more occasion. Answers from repeated testing were compared (test-re-test reliability). The reliability was done Cronbach Alpha coefficients test which revealed that the tool consisted of relatively homogenous items as indicated by moderate to high reliability of each tool. The internal consistency of the knowledge was 0.721, while: reliability of practices was 0.834.

Content validity of the tool:

Content validity of the tool was done by five of faculty's staff Nursing experts from the community health nursing specialties who reviewed the tools for clarity, relevance, comprehensiveness, applicability and give their opinion.

Ethical considerations:

All ethical issues were assured; oral consent has been obtained from each patient with diabetic foot before conducting the interview and give them a brief orientation to the purpose of the study. They were also reassured that all information will be treated confidentially and used only for the purpose of the study. The patients had right to withdraw from the study at any time without giving any reasons.

Pilot study:

The pilot study was carried out on (20) patients with diabetic foot which represented 10 % of the total sample size (200). The pilot study was aimed to assess the tool clarity, applicability and time needed to fill each sheet, completing the sheet consumed about 30 minutes. No modifications were done, so the pilot study sample was included in the total sample.

Field work:

The actual field was carried out over a period of 6 months from the beginning of February 2022 to the end of July 2022. The researchers visited the diabetic foot clinic at Benha University Hospital from 10a.m to 12p.m, two days per week (Monday and Wednesday) to collect data from diabetic foot patients and distribute instruction guidelines about care of diabetic foot to prevent complications and improve general health of them. The average time needed for sheet was around 20-25 minutes and the average number of interviewed patients at the diabetic foot clinic were 4-5 patients/day depending on their responses.

Statistical analysis:

All data collected were organized, tabulated and analyzed by using the statistical test, The data were analyzed by using the Statistical Package for Social Science (SPSS), which was applied to calculate frequencies and percentages for qualitative descriptive data and chi-square coefficient x2 was used for relation tests, mean and Standard Deviation (SD) was used for qualitative data, person correlation coefficient (r)was used for correlation analysis and degree of significance was identified.

Statistically significance was considered at:

- Highly statistically significant when P-value >0.001.
- Statistically significant result when P-value <0.05.
- Not significant result when P-value >0.05.

Results:

Table (1): Shows that; 46.5% of studied patients aged from 60 to less than 70 years old with Mean ±SD 61.52±6.34 and 48% of them were married. Concerning educational level; 47.5% of them had basic education, 49% of them were house wives / not working and 63% of them had enough income. In addition, 57% of them had extended family and 59% were living in rural areas.

Table (2): Reveals that; 52% of studied patients had diabetes mellitus from 1 to less than 5 years and 35% of them were visiting the diabetic clinic every three weeks while; 43% of them never hospitalized due to Diabetes Mellitus. Concerning the medical intervention

to the diabetic foot, 40% of studied patients had dressing for diabetic foot wound and 50% of them complained from sores on the foot. In addition, 60.5% of them treated with subcutaneous insulin and 53.5% of them had chronic diseases as hypertension.

Figure (1): Shows that; 49.5% of studied patients had poor total knowledge level, and 37% of them had average total knowledge level. While ;13.5% of them had good total knowledge level regarding diabetic foot.

Figure (2): shows that 51% of studied patients had satisfactory total practices regarding diabetic footcare. While; 49% of them had unsatisfactory total practices regarding diabetic foot care.

Table (3) Demonstrates that, there were no statistically significant relation between patients' total reported practices about diabetic foot care and all their socio- demographic characteristics except for their educational level, there was statistically significant relation ($p<0.05$*).

Table (4) Reveals that there was highly statistically positive correlation between total knowledge of studied patients and their total self-care practices about diabetic foot ($p<0.001$**)

Table (1): Frequency distribution of studied patients regarding their socio-demographic characteristics (n=200)

Demographic characteristics	No	%
Gender:		
Male	100	50.0
Female	100	50.0
Age:		
50<60	87	43.5
60<70	93	46.5
70<80	20	10.0
Mean ±SD	**61.52±6.34**	
Marital status:		
Married	96	48.0
Widow	87	43.5
Divorced	17	8.5
Educational level:		
Can't read or write	47	23.5
Basic education	95	47.5
Intermediate education	42	21.0
University education or more	16	8.0
Occupation:		
Employee	38	19.0
Free works	43	21.5
Housewives / Not working	98	49.0
Retired	21	10.5
Monthly income:		
Enough and save	26	13.0
Enough	126	63.0
Not enough	48	24.0
Family Type:		
Nuclear family	86	43.0
Extended family	114	57.0
Residence:		
Rural	118	59.0
Urban	82	41.0

Table (2): Frequency distribution of studied patients regarding their medical history (n=200).

Medical history	No	%
Onset of DM:		
1<5 years	104	52.0
5<10 years	86	43.0
>10 years	10	5.0
Frequency of visiting to diabetic clinic:		
Every week	24	12.0
Every two weeks	62	31.0
Every three weeks	70	35.0
Every month or more	44	22.0
Number of hospitalization due to DM:		
Never	86	43.0
Once	77	38.5
Twice ore more	35	17.5
Medical intervention to diabetic foot:		
Dressing for diabetic foot wound	80	40.0
Deep cleaning to diabetic foot	70	35.0
Surgical intervention for diabetic foot at the operating room	41	20.5
Don't need medical intervention for diabetic foot	9	4.5
***Current complains:**		
Sores on the foot	100	50.0
Foot dryness that results in cracks	47	23.5
Loss of sensation with pain or cold	83	41.5
Change in the shape of the foot due to wearing tight shoes for long period	40	20.0
Types of treatment:		
Oral tablets drugs	79	39.5
Subcutaneous Insulin	121	60.5
***Prescence of other chronic diseases:**		
Hypertension.	107	53.5
High cholesterol level	37	18.5
Peripheral atherosclerosis.	4	2.0
Cardiac disease	55	27.5
Nothing	18	9.0
***Factors that precipitate diabetic foot:**		
High blood glucose level for a long time.	92	46.0
Presence of a medical history of the patient or family for diabetic foot.	47	23.5
Appearance of foot ulcers.	45	22.5
Weight gain leads to excessive pressure on the foot.	30	13.0
Lack of foot care	95	23.5
Stages of diabetic foot:		
Natural diabetic foot	68	34.0
Diabetic foot with an increase in the thickness of the skin and beginning of a superficial ulcer	86	43.0
Ulcerated diabetic foot with fingers and edges of the foot	44	18.5
Diabetic foot with deep ulcers and osteomyelitis	40	4.5

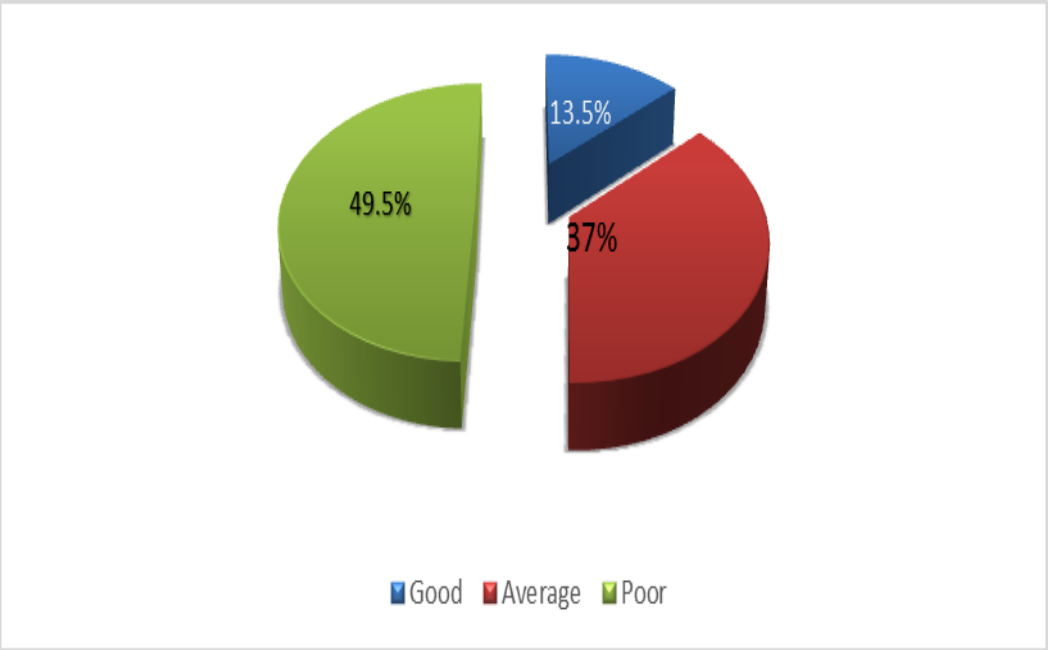

Figure (1): Percentage distribution of studied patients regarding their total knowledge level about diabetic foot, (n=200).

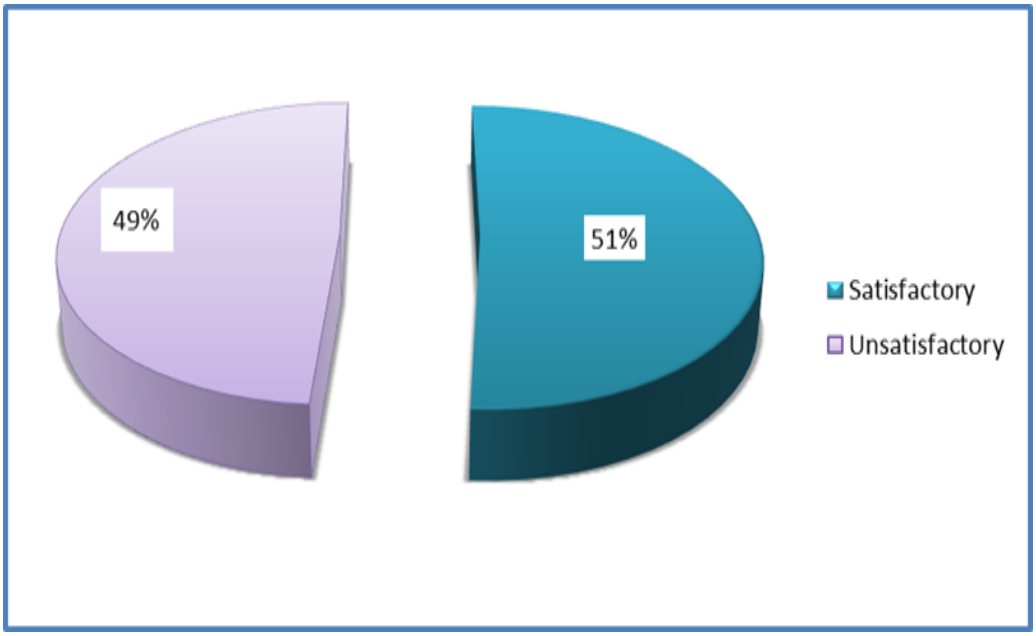

Figure (2): Percentage distribution of studied patient's total self-care practices regarding diabetic foot care, (n=200)

Table (3): Statistically relation between socio-demographic characteristics and total self-care practices among studied patient regarding diabetic foot (n=200).

Socio-demographic characteristics	Total self-care practices				X	-value
	Unsatisfactory(n=98)		Satisfactory (n=102)			
Gender:						
Male	48	49.0	52	51.0	0.08	0.777
Female	50	51.0	50	49.0		
Age:						
50<60	44	44.9	43	42.2	3.23	0.199
60<70	48	49.0	45	44.1		
70<80	6	6.1	14	13.7		
Marital status:						
Married	46	46.9	50	49.0	1.845	0.397
Widow	46	46.9	41	40.2		
Divorced	6	6.1	11	10.8		
Educational level:						
Can't read or write	25	25.5	22	21.6	12.163	0.007*
Basic education	55	56.1	40	39.2		
Intermediate education	15	15.3	27	26.5		
University education or more	3	3.1	13	12.7		
Occupation:						
Employee	12	12.2	26	25.5	6.742	0.15
Free works	23	23.5	20	19.6		
Housewives /not working	42	42.9	34	33.3		
Retired	9	9.2	12	11.8		
Monthly income						
Enough and save	13	13.3	13	12.7	0.253	0.881
Enough	63	64.3	63	61.8		
Not enough	22	22.4	26	25.5		
Family Type						
Nuclear family	43	43.9	43	42.2	0.06	0.806
Extended family	55	56.1	59	57.8		

Table (4): Correlation between total knowledge and total practices among studied patients (n=200).

Total knowledge	Total self-care				X^2	p-alue
	Unsatisfactory (n=98)		Satisfactory (n=102)			
Poor (n=99)	55	56.1	44	43.	14.735	.001**
Average (n=74)	39	39.8	35	34.		
Good (n=27)	4	4.1	23	22.		

Discussion:

Diabetes mellitus (DM) is one of the major diseases leading to death worldwide. It is a condition of high sugar or glucose concentration in blood resulting from abnormal insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is linked to long-term damage, dysfunction, and failure of various organs, particularly the eyes, kidneys, nerves, heart, and blood vessels. Diabetic foot ulcer is one of the major complications caused by diabetes mellitus (DM). Foot ulcers occur due to damaged skin tissues under the big toes and on the feet plantar. Foot ulcers cause the underlying skin layer to be exposed, affecting the feet to the bone as a result of the complication of uncontrolled diabetes. Improper and late handling of patients with a diabetic foot can result in an amputation of the foot **(Munadi et al., 2022).**

The findings of the current study were discussed under the following consequences: demographic characteristics of the studied patients, medical history of them, knowledge regarding diabetes mellitus and diabetic foot, reported practices of studied patients regarding diabetic foot care.

According to demographic characteristics of the studied patients with diabetic foot, the present study findings showed that nearly half of studied patients age 60 to less than 70 years old with mean age 61.52+6.34 years. This finding was inconsistent with **Al-Jarallah et al. (2018),** who studieded "Knowledge and practice of diabetic foot care among diabetic patients in Aseer region, Saudi Arabia"(n=351) and founded that more than two fifth (42.2%) of studied patients aged more than 60 years old. Also, this finding disagreed with **Dedefo et al., (2019)**, who studied "Care practices among diabetic patients in West Ethiopia", (n=225) and reported that more than tenth (12.7%) aged >60 years old.

Regarding patients' gender, this current study showed that half of patients were males. This finding agreed with **Mekonen & Demssie (2022)**, who studied " preventive foot self-care practice and associated factors among diabetic patients attending the university of Gondar comprehensive specialized referral hospital, northwest Ethiopia", (n=384), and found that half (50.5%) of the studied patients were male.

Concerning onset of diabetes mellites, the present study showed that half of studied patient had diabetes from 1to less than 5 years. This finding was consistent with **Sari et al., (2020)**, who studied "Foot self-care are

behavior and its predictors in diabetic patients in Indonesia", (n=546) and founded that half (49.8%) of studied patients had diabetes from 1to less than 5 years.

However, this finding was supported by **Mahmood et al., (2019),** who studied " Diabetic foot self-care: Awareness and practice among type 2 diabetic patients in primary healthcare centers, Dubai health authority. South East Asia Region " (n=488), and found that nearly two fifth (38.2%) of them had diabetes mellites from 1 to less than 5 years.

According to stages of diabetic foot, the current study revealed that more than majority of studied patients had beginning of superficial ulcer. The finding disagreed with **pourkazemi et al., (2020),** who studied "Diabetic foot care: knowledge and practice, in Guilan"(n=375) and found that more than three quarters (76.8%) of the studied patients had no diabetic foot ulcers.

In relation to patients' knowledge regarding diabetic foot, the results of current study clarified that half of studied patients had poor total knowledge level, and more than one third of them had average total knowledge level. While ;13.5% of them had good total knowledge level regarding diabetes mellitus and diabetic foot. This might be due to the low schooling levels of the patients that contributed to the poor knowledge. This result agreed with **Wazqar et al., (2021),** who conducted a study "Assessment of knowledge and foot self-care practices among diabetes mellitus patients in a tertiary care Centre in Makkah, Saudi Arabia"(n=409) and founded that nearly three quarters (72.4%) of the participants had a poor level of knowledge whereas only 4.2% expressed a good level of knowledge.

Furthermore, our study findings were similar to the results of **Khan et al., (2020),** who studied "Foot self-care knowledge and practice evaluation among patients with diabetes", (n=132) and showed that most people with diabetes had poor knowledge and negative behaviors toward foot -care.

In contrast, this result disagrees with **Asmelash et al, 2019,** and who studied "Knowledge, Attitude, and Practice towards Glycemic Control and Its Associated Factors among Diabetes Mellitus Patients" (n=403) and **Alsous et al., (2019)** who studied "Public knowledge, attitudes and practices toward diabetes mellitus: A cross-sectional study from Jordan" (n=1.702) showed that more than three fifth (62%) of the participants, respectively had a good knowledge about DM. This might be due to the fact that there are sociodemographic variations across the countries, the difference in health education, sample size and access to sources of information like television, radio and newspaper.

According to total self-care reported practices, the current study showed that more than half of studied patients had satisfactory total self-care reported practices. These findings were disagreed with **Abu-Elenin et al., (2018),** who conducted a study "Knowledge, Practice and Barriers of Foot Self-Care among Diabetic Patients at Tanta University Hospitals, Egypt"(n=264), and mentioned that more than three fifth of studied patients (62.2%) had inadequate self-foot care practice level. This might be due to patients have an elementary role in promoting proper diabetic foot self-care.

Regarding to relation between demographic characteristic of diabetic patients and their self-care reported practices regarding diabetic foot. the results of present study clarified that, there were no statistically significant relation between patient's self-care reported practices about diabetic foot care and all their demographic characteristic except their educational level there was statistically significant relation ($p>0.05$),

The findings of current study disagreed with **Raj et al., (2021),** who studied "Knowledge and practice regarding foot self- care behavior

among patients with diabetes mellitus "(n-250), and showed that there is a significant association between practice regarding foot self-care behavior among diabetic patients and their demographic variables such as educational status, family history, monthly income and type of anti- diabetic medication.

Owing to correlation between total knowledge and total practices regarding diabetic foot care. the finding of current study reported that there was highly statistically positive correlation between total knowledge of studied patients and their total self-care practices about diabetic foot ($p<0.001$**).

This result was consistent with **Jing et al., 2022,** who showed that there is a significant positive correlation between foot care knowledge and foot care practices ($p<0.001$). Increasingly, the result of present study agreed with **(Alharbi and Sulaiman, 2022)** who demonstrated that a strong statistical association was detected between patients' good knowledge of diabetic foot self-care and good practice (P-value = 0.001).

Conclusion:

Approximately less than half of studied patients had poor total knowledge level about diabetic foot. While; more than half of them had satisfactory total reported practices regarding foot care. occupation. There was no statistically significant relation between total patients' self-care reported practices about diabetic foot care and all their demographic characteristics except for their educational level, there was statistically significant relation. There was highly statistically positive correlation between total knowledge of studied patients and their total self-care reported practices regarding foot care.

Recommendations:

1- Develop health educational program for diabetic foot patients to increase their knowledge and self -care practices regarding diabetic foot.

2-Regular follow up care for diabetic foot patients in outpatient's clinics by specialized team to prevent complication of diabetic foot.

3- Further researches are required to study diabetes, diabetic foot and prevention of diabetic foot amputation on a large sample.

4-Colored illustrated booklet should be available and distributed to each patient with diabetic foot about self-care management practices regarding diabetic

5-Encourage the use of different modalities of Telemedicine (TM) as a communication tool between caregivers across the health care sectors and help patients with DFUs opens up for multi-sectoral and interdisciplinary close follow-up .

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ممارسات الرعايه الذاتيه لمرضي القدم السكري بمستشفي بنها الجامعي

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مرض السكر هو مجموعه من الاضطرابات الايضيه التي تتميز بارتفاع مستوي السكر بالدم علي مدي فتره طويله من الزمن وغالبا ما تسبب بعض المضاعفات الخطيره مثل أمراض القلب والاوعيه الدمويه والسكته الدماغيه وامراض الكلي المزمنه وتقرحات القدم وتلف الاعصاب والعين. القدم السكري ينتج مباشرة عن مرض الشرايين المحيطيه او الاعتلال العصبي الحسي الذي يصيب القدمين لدي مرضي السكر مع وجود بعض الخصائص مثل العدوي وقرحه القدم السكري والاعتلال العصبي المفصلي. لذا هدفت هذه الدراسة إلي تقييم ممارسات الرعايه الذاتيه لمرضي القدم السكري بمستشفي بنها وقد أجريت هذه الدراسة علي مرضي القدم السكري الذين يترددون علي عيادة القدم السكري بمستشفي بنها الجامعي خلال سته اشهر وستكون عينة الدراسة للمرضي اكثر من 50 عاما وعددهم 200مريض. وقد أوضحت النتائج انه توجد علاقة إيجابيه ذات دلالة إحصائية بين مستوى المعرفة الكلي للمرضى حول القدم السكري والعمر والمستوى التعليمي والمهني، بينما لا توجد علاقة ذات دلالة إحصائية بين مستوى المعرفة الكلي للمرضى والجنس والحالة الاجتماعية والدخل ونوع الأسرة والإقامة. وقد أوصت الدراسة بتطوير برنامج التثقيف الصحي لمرضى القدم السكري لزيادة معرفتهم وممارسات الرعاية الذاتية فيما يتعلق بالقدم السكري ومتابعة منتظمة لرعاية مرضى القدم السكري في العيادات الخارجية من قبل فريق متخصص للوقاية من مضاعفات القدم السكري وأيضا مطلوب المزيد من الأبحاث لدراسة مرض السكر والقدم السكري والوقاية من بتر القدم السكري على عينة كبيرة كما أوصت بإقامة اجتماعات عبر الإنترنت بانتظام بين مرضى القدم السكري وفريق الرعاية الصحية لتحسين ممارسات إدارة الرعاية الذاتية فيما يتعلق بالقدم السكري.