Assessment of Patient's Knowledge and Practice Regarding their Diabetic Foot in Chamchamal District (AL- Slemani City)

تقييم معارف وممارسات المرضى تجاه قدمهم السكري في قضاء جمجمال(مدينة السليمانية)

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الخلاصة:

خلفية البحث: مرض القدم السكري من الامراض الشائعة بين مرضى السكر ويعتبر أهم المضاعفات المزمنة المؤدية الى العجز الناتج عن قلة العناية بالمرض.

الهدف: تهدف الدراسة الى تقييم المعارف والممارسات الذاتية لمرضى القدم السكري, بالاضافة الى ايجاد العلاقة بين المعارف والممارسات الذاتية من جهة وبعض الصفات الديموغرافية مثل (العمر, الجنس, المستوى الثقافي, الحالة الزوجية, الدخل الشهري, ومحل السكن) من جهة أخرى.

المنهجية: اجريت دراسة وصفية بتصميم كمي في العيادة الخارجية للعيادة الشعبية المسائية ومركز السيطرة على الامراض المزمنة في قضاء جمجمال للمدة من 15 تشرين الثاني من عام 2013 وحتى العاشر من شهر تشرين الاول من عام 2014 ولتحقيق اهداف الدراسة, اختيرت عينة غرضية (غير إحتمالية) مكونة من (75) مريض مصابين بالقدم السكري من الذين يراجعون المركز المذكور في أعلاه. ولغرض جمع العينة, صممت استمارة استبيان مكونة من (47) فقرة. عرضت الاستبانة على (16) خبير لتحديد الصدق, وباستخدام الدراسة الاستطلاعية تم تحديد ثبات الاستبانة, وبطريقة المقابلة الشخصية مع عينة البحث تم جمع المعلومات المطلوبة. تم تحليل البيانات من خلال استخدام التحليل الوصفي والتحليل الاستنتاجي.

النتائج: أشارت الدراسة الى وجود علاقة ذودلالة احصائية بين معلومات المرضى والممارسات الذاتية مع المستوى الثقافي والدخل الشهري للمرضى, ووجود علاقة احصائية بين الممارسات الذاتية والمهنة.

الاستنتاجات: أستنتج الباحث بأن معارف مرضى السكر مختلفة بين المرضى في المستوى الثقافي والدخل الشهري, كذلك بالنسبة للممارسات الذاتية فهي مختلفة بين المرضى في المستوى الثقافي والمهنة والدخل الشهري.

التوصيات: اوصت الدراسة بأن المرضى الذين يعانون من القدم السكري يجب ان يتعرضون الى برامج ثقافية لزيادة معلوماتهم حول العناية بالقدم السكري وتقييم العناية بواسطة المعنيين بذلك. كذلك إقامة برامج ثقافية رسمية بواسطة ممرضين مختصين في مراكز السكر وكذلك من المختصين بالتغذية وذلك لأهميتها في حل المشاكل الجسمية والنفسية لمرضى القدم السكري وزيادة معارفهم حول العناية بالقدم السكري.

Abstract

Background: Diabetic foot is common in the diabetic population; it is one of the most incapacitating chronic Complications resulting from poor disease management.

Objective: The study aims to assess knowledge and practice of Diabetic patients, for their foot, and to find out the relationship between knowledge and practice with some Sociodemographic characteristics such as (Age, gender, level of education. Marital Status, monthly income, residential area).

Methodology: Descriptive study was carried out at Chamchamal District, from the outpatient of Chamchamal evening Public Clinic and Chronic Disease Control Center, for the period of 15th November 2013 up to 10th of October 2014. To reach the objectives of the present study, a non-probability (purposive) sample of (75) patients with diabetic foot who attend the above center. For the purpose of data collection, a questionnaire was designed of (47) items. To measure the validity of instrument the researcher exposed the instruments to (16) experts. A pilot study was carried out to check the reliability of the questionnaire. Data were collected through the use of interview, and were analyzed through the application of descriptive statistics.

Results: Results of the study revealed that there was a significant relationship between Knowledge and practice by level of education and monthly income and there was also a significant relationship between practices by Occupation.

Conclusions: Diabetic patient's knowledge was deferent level in education and monthly income, and diabetes practice was deferent level in level of education, occupation, and monthly income in a statistically significant manner.

Recommendations: The study recommended that Patients with diabetic foot need ongoing educational programs in order to increase their knowledge and understanding in addition to regular evaluation of self-care skills by the diabetes educator. Formal diabetes education programs, generally conducted by diabetes nurses and nutrition specialists, are often very effective and training nursing personnel regarding management

of physical and psychological problems of patients is essential to increase their knowledge and practices skills.

Keywords: Diabetic foot, Knowledge, Practice

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INTRODUCTION:

Diabetes mellitus (DM) is one of the most common non-communicable diseases globally, and its related complications result in increasing disability, reduced life expectancy and enormous health costs for virtually every society [1]**.**

Diabetes mellitus is a metabolic disorder in which the body has a deficiency of and/or a resistance to insulin[2]**.** It is a syndrome of chronic hyperglycemia due to relative insulin deficiency, resistance or both. About 10-15% of diabetic patients develop foot ulcers at some stage in their lives. Diabetic foot problems are responsible for nearly 50% of all diabetes related hospital admission [3] **.**It is an insidious disease, with the risk of developing it increasing with age. It was formerly associated with advanced age and usually diagnosed after age 40, today, DM II is diagnosed in earlier ages due to increased obesity and increasing body mass index beyond the ideal body weight; this decreases sensitivity to insulin, thus causing receptor defects [4] **.**It is a public health problem and the leading cause of morbidity and mortality worldwide. Global diabetes incidence is increasing rapidly; this rise in prevalence of DM is likely to bring a concomitant increase in its complications among diabetic patients. One important complication of DM is the Foot problems; these complications constitute an increasing public health problem and are a leading cause of hospital admission, amputation and mortality in diabetic patients [5]**.**

Education is the key element in successful management of diabetes, as knowledge about diabetes empowers patients to play an active role in effective diabetes self-management. Patient education is an ongoing process, which should be aimed at helping patients to overcome behavioral and psychological barriers, improve self-management skills, and become empowered to make informed Choices. The diabetes educational process is a key aspect of DM management [6]**.**

Daily foot care and inspection can prevent the development of foot ulcers and the sub sequent complications that lead to amputation--one of the biggest threats to adults with diabetes. Preventive behavior focus on not going barefoot, Performing/receiving proper foot care, and wearing properly fitting shoes. Foot-specific patient education is an essential element of a health system diabetic foot program [7]**.** The study aims to assess knowledge and practice of Diabetic patients, for their foot, and to find out the relationship between knowledge and practice with some Sociodemographic characteristics such as (Age, gender, level of education. marital Status**,** monthly income, residential area).

METHODOLOGY:

Quantitative design (a descriptive study) has been conducted to assess the knowledge and practice of the patients with diabetic foot during the period of 15th November 2013 up

to 10th October 2014. The present study was carried out in Chamchamal district, from the outpatient of Chamchamal evening Public Clinic and Chronic Disease Control Center. A non-probability (purposive) sample of (75) patients, males and females who were definitely diagnosed as having Diabetic foot and were selected from patients who attended at the outpatient of Chamchamal evening Public Clinic and Chronic Disease Control Center, which represent a Vital Governmental health agency in Chamchamal district. To reach the objective of the study, a questionnaire was designed and constructed by the researcher to assess the knowledge and self-care of patients with Diabetic foot. Such construction was employed through review of literatures and related studies. The study instrument compressed of a total of (47) items, which were distributed through the followings:

- **Demographic Information sheet:** This sheet consists of (8) items, which include: age, gender, level of educational, marital status, occupation, monthly income, residential area, and duration of diabetes mellitus.
- **Some contributing factors which have relation with diabetes mellitus:** This part includes (3) items, which are: Body mass index (BMI), Smoking, and Drinking Alcohol.
- **Source of Patients information about disease:** This part includes (6) sub items.
- **Knowledge:** This part includes (18) items related to the knowledge of the patients about their disease.
- **Practice:** This part includes (17) items related to the self–care of the patients about their disease.

The content Validity of the questionnaire was determined through a panel of (16) experts. Reliability of the questionnaire was determined through the use of stability method (test - retest approach), and the computation of a Cronbach Alpha Correlation Coefficient. The findings indicated that correlation coefficient was (r = 0.91) for the Knowledge, and (r = 0.83) for practice of the study sample, which indicated acceptable reliability for the questionnaire.

RES ULTS:

Table (1): Distribution of the study samples by socio-demographic characteristics and medical Information.

Items		F	%
Age	40 - 49 years	10	13.3
	50 - 59 years	32	42.7
	≥ 60 years	**33**	**44.0**
Gender	Male	**43**	**57.3**
	Female	32	42.7
Level of Education	Illiterate	**40**	**53.3**
	Can read and write	23	30.7
	Primary school graduate	8	10.7
	High school graduate	4	5.3
Marital Status	Single	3	4.0
	Married	**71**	**94.7**
	Widow/er	1	1.3
Occupation	Employed – Government	7	9.3
	Employed – Self	20	26.7
	Unemployed – Retired	7	9.3
	Unemployed – Housewife	**26**	**34.7**
	Unemployed - Out of Work	15	20.0
Monthly income	Sufficient	13	17.3

	Barely sufficient	**46**	**61.3**
	Insufficient	16	21.3
Residential area	Urban	**54**	**72.0**
	Rural	21	28.0
Duration of diabetes mellitus	Less than two years	1	1.3
	2 or 3 years	3	4.0
	4 or 5 years	18	24.0
	6 or 7 years	9	12.0
	8 or 9 years	18	24.0
	10 years and above	**26**	**34.7**
BMI	Underweight	1	1.3
	Normal weight	18	24.0
	Overweight	**29**	**38.7**
	Obese	17	22.7
	Morbidly Obese	10	13.3
Smoking (Do you smoke?	Yes	12	16.0
	No	**63**	**84.0**
If you answered yes how many cigarettes per day?	≤10 cigarettes	0	0.0
	11-20 cigarettes	**6**	**8.0**
	21-30 cigarettes	3	4.0
	>30 cigarettes	3	4.0
For how many years have you been smoking?	2.00	1	1.3
	14.00	1	1.3
	15.00	**3**	**4.0**
	20.00	**3**	**4.0**
	25.00	1	1.3
	30.00	**3**	**4.0**
How long ago did you quit smoking?	12 year	1	1.3
	15 year	**5**	**6.7**
	20 year	4	5.3
	25 year	2	2.7
Do you drink alcohol regularly? Or have ever drunk alcohol?	Yes	1	1.3
	No	**74**	**98.7**
If you answered yes, how much (with units)?	**9.00**	1	1.3
How long ago did you quit drinking alcohol?	15 year	1	1.3
Source of your information about disease?	Physicians	27	36.0
	Television	**28**	**37.3**
	Book and magazines	1	1.3
	Nurse	19	25.3

This table reveals that (44%) of the study sample's age were ≥ 60 years old, majority of them were male (57.3%) most of them were illiterate (53.3%), the majority of them was married (94.7 %) with barely sufficient monthly income (61.3%), about (34.7%) were house wives who live in urban area (72%), and (34.7 %) of the study sample had experience of (D.M) for 10 years and above. Concerning the Body Mass Index, (38.7) of the study sample were overweight and the majority of them not smoking (84%), the remaining (16%) smoking (11-20) cigarettes (8%) for more than 15 years. Patients who quit smoking for (15) years ago were (6.7%), the majority of them not drinking alcohol (98.7%). Most of patient's sources of information about disease are from television (37.3%).

Table (2): Level of Patients knowledge concerning foot care.

No	Items	Know	Uncertain	Don't Know	M.S	Severity

No	Items				M.S	Severity
1.	Do you know that attending a class on how to care for your feet can benefit you?	12	17	46	1.54	L
2.	Do you know that Diabetic foot patients should take medication regularly because they are liable to get Diabetes mellitus complication?	36	16	23	2.17	M
3.	Do you think that reading handouts on proper footwear is necessary for you?	19	15	41	1.7	M
4.	Do you know any information regarding foot care?	22	18	35	1.8	M
5.	Do you know that Classic symptoms of hyperglycemia are Polydipsia, Polyuria, Polyphagia and unexplained weight loss?	36	30	9	2.36	H
6.	Do you know that eating food in a timely manner can prevent hypoglycemia?	37	29	9	2.37	H
7.	Do you know how to use a glucose meter?	27	17	31	1.94	M
8.	Do you know that dietary habit plays an important role in the control of blood sugar level?	36	32	7	2.38	H
9.	Do you know that dietary habit and knowledge are the most important ways to prevent diabetic complication like hyperglycemia and foot ulcers?	37	33	5	2.42	H
10.	Do you know that all patients with diabetes develop reduced blood flow in their feet?	48	14	13	2.46	H
11.	Do you know Exercise essential for controlling blood sugar?	34	29	12	2.29	M
12.	Do you know eating high fiber food help control you glucose level?	35	33	7	2.37	H
13.	Do you know that smoking can reduce blood flow in your feet?	55	12	8	2.62	H
14.	Do you know Washing with warm water keeps feet soft and prevents cracking?	47	23	5	2.56	H
15.	Do you know that all diabetic patients may get gangrene?	54	16	5	2.65	H
16.	Do you know Local change of skin on feet due to increased moisture and white mass between your toes, redness of bottom of your foot edema, dryness, and fissure early signs of foot ulcer?	37	33	5	2.42	H
17.	Do you know Wounds and infection may not heal quickly in diabetic patient?	52	16	7	2.6	H
18.	Do you know that if you neglect it can lead to amputation?	55	11	9	2.61	H

Low mean = (1 - 1.66) /moderate mean = (1.67 - 2 .32) / high mean = (2.33 - 3)

Table 2 indicates that the mean of scores are low on items (1), and moderate on items (2, 3, 4, 7, and 11), while highly significant, on the remaining items.

Table (3): Level of patients practices toward foot care.

No	Items	Always	Some times	Never	M.S	Severity
1.	Do you examine your feet daily?	10	25	40	1.6	L
2.	Do you wash your feet daily?	56	14	5	2.68	H
3.	Do you dry well between your toes?	17	45	13	2	M
4.	Do you check the temperature of water before use?	22	44	9	2.17	M
5.	Do you cut your own toenails?	44	25	6	2.5	H
6.	Do you trim toe nails straight across?	43	23	9	2.45	H
7.	Do you inspect your feet under good light?	22	24	29	1.9	M
8.	Do you Inspect inside of your foot wear before putting them on?	10	22	43	1.56	L

9.	Do you inspect your feet during and after you shower/ bathe?	9	27	39	1.6	**L**
10.	Do you measure your feet, and choose soft shoes to avoid trauma?	11	25	39	1.62	**L**
11.	Do you wear slippers after washing your feet?	13	21	41	1.62	**L**
12.	Do you use moisturizer or oils in- between your toes?	11	19	45	1.54	**L**
13.	Do you exercise regularly?	5	23	47	1.44	**L**
14.	Do you wash your feet daily with soap to prevent infection and keep your feet healthy?	28	25	22	2.08	**M**
15.	Do you wear socks?	19	33	23	1.94	**M**
16.	Do you dry the feet and in-between your toes well with a soft towel?	12	25	38	1.65	**L**
17.	Do you use talcum powder to keep your inter-digital spaces dry?	10	18	47	1.5	**L**

Table 3 indicates that the mean of scores are highly on items (2, 5, 6), and moderate on items (3, 4, 7, 14, 15) while low significant on the remaining items.

Table (4): Pearson correlation between Knowledge and practice.

Variables	Pearson Correlation	t-test	t-tab (0.05)
Knowledge practice	0.551*	5.645	1.993

*Correlation is significant at the 0.05 level.

Table 4 shows that there is statistically significant correlation between Knowledge and practice.

Table (5): Relationship between Gender and Knowledge.

	Gender	N	Mean	Std. Deviation	t-test	df	t-tab$_{0.05}$
Knowledge	Male	43	42.49	6.522	2.083	73	1.993 (S)
	Female	32	39.84	4.466			

Table 5 shows that the mean knowledge for males (42.49) is statistically significantly higher than for females (39.84).

Table (6): Relationship between level of education and knowledge.

	Level of Education	N	Mean	Std. Deviation	F-test One way- ANOVA	P-Value
Knowledge	Illiterate	40	39.13	5.345		
	Can read and write	23	43.26	4.779		
	Primary school graduate	8	43.00	6.481	6.863	0.000 (HS)
	High school graduate	4	49.50	4.203		
	Total	75	41.36	5.851		
	Spearman's rho=0.413, P-Value=0.000 (HS)					

Table 6 shows that there were highly significant relationship between the patient's level of education and their knowledge.

Table (7): Differences in practice by Level of Education

	Level of Education	N	Mean	Std. Deviation	F-test One way-ANOVA	P-Value
practice	Illiterate	40	31.00	5.340		
	Can read and write	23	32.48	4.144		0.009 (HS)
	Primary school graduate	8	31.00	7.131	4.147	
	High school graduate	4	40.50	5.972		
	Total	75	31.96	5.569		

Table 7 shows that there were highly significant relationship between the patient's level of education and their practices.

DISCUSSION:

Diabetes mellitus is most prevalent in middle-aged and elderly populations; with the highest rates occurring in persons aged 65 years and older, as the sixth leading cause of death in the US, which is agree with the present study[8].

There are poor differences in knowledge by age group. In appears that knowledge is lowest in the oldest age group which is similar to the finding of a study by Al-Maskari et al., (2013), though Al-Maskari found a significant variation by knowledge by age group, likely because of the higher power of this study (n=575). Despite the larger sample size, Al-Maskari also did not find a significant variation in practice by age group [9].

The mean score of knowledge for males (42.49) is statistically significantly higher than for females. Though the mean practice for males (32.09) is greater than for females (31.78), the difference is not statistically significant. Lavery, et al., (1996) declared that gender was not statistically significant in their study. In contrast, gender differences between men and women in the development of diabetic foot problems have been observed in other studies. This is may be according to the number of men who came to the diabetic center during data collection [10].

Kamel, et al., (1999) also found that poor Knowledge and Self-Care scores were related to level of education, but the scores are very low for all different levels of education. There were also statistically significant differences in means for practice by Monthly Income, with individuals with Insufficient Incomes (29.38) again lower than those with sufficient (34.69) or Barely Sufficient (32.09) incomes [11].

Findings related to the impact of average monthly incomes have been mixed, with some studies (Oladele and Barnett (2006), Dunlop et al., 2000), who found that there is not a statistically significant association of average monthly income with knowledge and practice. The present study showed that there is no significant relationship between residential area and either knowledge or practice [12] and [13]. Though there was no statistically significant difference in means for Knowledge by Occupation, the differences in mean practice by Occupation was statistically significant.

The findings from Al-Maskari, et al., (2013), in contrast, found that knowledge differed significantly by occupation but practice did not. These findings may differ because of different educational standards in the UAE compared to Kurdistan [9].

Zigbor, et al., (2009) found that there are commonly differences in knowledge and practice by residential area and noted that rural populations are unique and are generally characterized by lower levels of education and income and there are also usually physical barriers to accessing care [14].

In addition the present results revealed that a significant difference was observed between knowledge and practice of foot care with marital status of diabetic patients; as it was shown increased knowledge and practice of foot care for married diabetic than other groups.

Heggy, (2001) and Abd EL- Hamid (2005) were found that married patients had better practice of self-care than widows [15].

Most of the study sample (37.3%) was overweight, which agree with Barnwell & Raskopf, (2000) who found that diabetes mellitus is an insidious disease, with the risk of developing it increasing with age.

Patients who received medical advice and performed the right self-care practices were far more likely to have a high BMI. This also illustrates that the relationship between BMI knowledge and practice is not straightforward [16].

CONCLUSIONS:

Diabetic patient's knowledge was deferent level in education and monthly income, and diabetes practice was deferent level in level of education, occupation, and monthly income in a statistically significant manner.

RECOMMENDATIONS:
1. Patients with diabetic foot need ongoing educational programs in order to increase their knowledge and understanding in addition to regular evaluation of practice skills by the diabetes educator.
2. Formal diabetes education programs, generally conducted by diabetes nurses and nutrition specialists, are often very effective and training nursing personnel regarding management of physical and psychological problems of patients is essential to increase their knowledge and practices skills.

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