



**Determination type2 diabetic patients self-foot- care in  
Nasiriya diabetes and endocrinology center**

**\* Munther K Al-Sadawy<sup>1</sup>**

**Medical Department, Al-Nasiriyah Technical Institute,  
Southern Technical University, Iraq**

**Emails:** munther2016@stu.edu.iq

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**Abstract**

For the six months period of this study (1<sup>st</sup> January 2016 to 30<sup>th</sup> Jan 2016), the proportion of acquired infection in Nasiriya diabetes and endocrinology center at Al-Nasiriya province south of Iraq were studied. A non-probability purposive sample of 100 cases, and 10 cases for pilot study were excluded from the sample, which consists of patients who were attending Al-Nasiriya Diabetic and Endocrinology Center. This study Including study 48 male and 52 female. male and female who were diagnosed with type 2 diabetes mellitus. Ages between 20 – 69 years old .

The results referred to the variable relationship between the items which have studied such as : age, gender, marital status, educational level, occupation, monthly income.

**Keywords:** Nasiriya diabetes and endocrinology center, diabetes patients self-foot.



## **1. Introduction**

Diabetes mellitus (DM) is a chronic non-communicable disease of growing worldwide significance. Globally, the prevalence of DM has reached an alarming proportion, and recently has been described as a ‘pandemic’ [1]

Diabetes is a serious, life-long condition. Worldwide, the prevalence of diabetes is increasing annually. It affects more than 2 million Canadians. Diabetes and its complications are the leading cause of death [ 2]

In 2011, the overall (diagnosed and undiagnosed) prevalence of diabetes worldwide amongst adults aged 20-79 years was estimated to be 8.3%, affecting 366 million individuals. It is predicted to increase to 9.9% or 552 million adults by 2030 [ 3]

While in Iraq increase the percentage of DM mortality from 3.5% in 2000 to 5.9% in 2012. In addition that considered the seventh causes of mortality in Iraq. [4 ]

One of the most debilitating complications of diabetes is diabetic foot disease. Diabetic ulceration and its long-term complications including infections, gangrene and osteomyelitis are the leading causes of lower extremity amputations .Lower extremity amputations are at least ten times more common in people with diabetes than in non-diabetic individuals

Diabetes-related foot disease accounts for approximately 40-60% of all non-traumatic lower extremity amputations worldwide, but is as high as 70-90% in some regions of the USA [ 5]

Good preventive foot care measures, patients' education and foot self-care can reduce the risk of developing by 49-85% (Apelqvist, *et al.*, 2000). However, adherence to recommended foot self-care activities can be influenced by several factors, including socio-demographic factors, clinician adherence to diabetes foot examination guidelines, and patients foot care education . [ 5 ]

Good patients education leads to improvement in both foot care knowledge and foot care behaviours, and may result in fewer clinical manifestations of diabetes related lower limb disease . [6 ]



Moreover, primary care health professional diabetes education has been found to be associated with an overall improvement in clinical

## **2. Materials and methods:**

**2.1 Effect of chemical pesticides on ticks** practice behaviours (Bruckner ,et al.,1999) , significantly increased clinician adherence to foot examination guidelines .[ 7]

In addition that lead to a reduction in lower extremity ulcerations and amputations amongst patients with diabetes, when combined with other preventive measures .[ 4 ]

Monitoring and evaluating the self-foot-care amongst patients with diabetes, that's importance for identifying gaps in foot care and promoting processes that maintain healthy feet, and detect and treat risk factors early Self-care in diabetes is defined as behaviors undertaken by people with or at risk of diabetes in order to successfully manage the disease on their own. [ 6 ] It is believed that appropriate patients knowledge of self-care is the key to achieving therapeutic goals in ambulatory care. Because patients and/or families handle the vast majority of day-to-day care in diabetes, there is an 4 important need for reliable and valid measures for self-management of diabetes . [5].

Pleated to early detection from the patients them self must be visit to diabetic center to receive carbothera therapy when they feel foot disorder

According to the early detection project carried out in Ministry of Iraqi Health from 2008-2012. Reported that 10% of population more than 20 years old complains from DM. Mostly of them were mans and recording more than (20000) patients with DM.(Ministry of Iraqi Health, 2012)

Lower extremity amputation (LEA) among patients with diabetes is associated with high personal, family, social, and economic burden

The count of DM patients who attended Nasiriyh Diabetes Center from duration(1<sup>st</sup> January 2016 to 30<sup>th</sup> Jan 2016), (21.940) , In addition that the carbothera department visited from (30-25) patients with DM daily who complain from foot ulceration .[4]



The aim of this study was to explore the self-foot-care amongst patients with type 2 diabetes by assessing or determine that patient's self-6 foot-care including: knowledge and skills was selected in Diabetes and Endocrinology Center at Nasiriya government

Our opinions about the important of that study were to prevent the ulceration that lead to amputation by determine the patients knowledge and there practices , skills about self-foot-care , to improve their ability for application to be more independent for this intervention

1- Identify type 2 diabetic patients' self-foot-care in Nasiriya Diabetes and Endocrinology center.

2- To find out the relationship between self-foot-care (age, gender, educational level, duration of diabetes mellitus diagnosis, and monthly income).

### **Definition of Terms:**

. Determination:

- Theoretical definition: The act, process or result of accurate measurement .[3]
- Operational definition: An assessment to identify type 2 diabetes patients self-foot-care who attended Al Nasiriya Diabetic and Endocrinology Center.
- Type 2diabetes Mellitus:
- Theoretical definition: Is a condition characterized by high blood glucose levels or glucose intolerance typically presenting in adulthood and exacerbated by obesity and an inactive lifestyle. This condition results in either a lack of insulin secretion or the inability of the body to use insulin efficiently .[14]
- Operational definition: It is chronic disease characteristic by elevated blood glucose level at medical diagnosis by physician.



- . Patient:
- Theoretical definition: A person under health care. The person may be waiting for this care may be receiving it or may have already received it
- Operational definition: An individual diagnosed with type 2 diabetes who attend Nasiriya Diabetic and Endocrinology Center for determined self-foot-care.
- Theoretical definition: The ability of patients to visualize the feet and check for sensation to light touch in both feet and able to feel your touch with their eyes closed Basic daily foot care may be identifying risk factors and finding foot lesions early may prevent or delay infection or amputation. [14]
- Operational definition: Ability of type 2 diabetes patients to deal effectively and independently with manage and demand for his\her foot to prevent ulceration and amputation.
- -. Diabetic and endocrinology center:
- Theoretical definition: A healthy center for diabetes and endocrinology clients to provide a comprehensive services that include diagnosis, treatment, health education, support for diabetes, and related disorders.[9]
- Operational definition: A healthy center for providing multidisciplinary services to diabetes clients and other endocrine diseases that include diagnosis, treatment, management, and health education. Investigations and to receive follow-ups medications. To promote health and avoid long-term complications. It's the best diabetes center in south of Iraq consist of three departments which include (counseling clinics that content medical deceases, pediatric growth and development ,surgical endocrinology, nursing , nutrition). department that content laboratories ,x-ray ,pharmacy



,and statistics ,the administration department .and the manager of center ,the center had 74 health workers (5 physician , 17physician assistance , 4 pharmacy , 2 pharmacy assistance, 18 technical staff 28 nurses).

### **Results:**

This study show that the majority (52%) of the groups were female . Most of them were ( 43%) group ( 40-49 ) years old . it indicated that the most of them (28% ) were no read and write .Majority ( 47% ) of the groups were married , it indicated that greater (41% )groups of the time of dingo's is where (6-10 )years . Most of them (65%) with insufficient monthly income . It indicated that most of them (26% ) were employee . Also presented ( 45% ) of the group with normal weight and the majority (49%) of information the patients from their physician.

Table (1) Distribution of socio-demographic data in study sample for patient with type 2 diabetes mellitus.		Frequency	Percentage	Cumulative percentage
gender	Male	48	48%	48.0
	Female	52	52%	100%
	Total	100	100.0	
Age group	20-29	12	12%	12.0
	30-39	14	14%	26.0
	40-49	43	43%	69.0
	>50	31	31%	100%
	Total	100	100.0	
Level of education	Not read and writ	28	28%	28.0
	Read and write	22	22%	50.0
	Primary school	17	17%	67.081.0
	Intermediate school	14	14%	92.0
	Preparatory school	11	11%	100%
	College and above	8	8%	



	Total		100	100.0	
Marital status	Single		14	14%	14.0
	Married		47	47%	61.0
	Divorced		10	10%	71.0
	Widowed		29	29%	100%
	Total		100	100.0	
Onset of diagnosis	1-5		33	33%	33.0
	6-10		41	41%	74
	>11		26	26%	100%
	Total		100	100.0	
Monthly income	Sufficient		11	11%	11.0
	Barley		24	24%	35.0
	Insufficient		65	65%	100%
	Total		100	100.0	4.0
Occupation	Student		4	4%	30.0
	Employee		26	26%	48.0
	Retired		18	18%	69.0
	House wife		21	21%	86.0
	Self-employed		17	17%	100%
	Unemployed		14	14%	
	Total		100	100.0	
Body mass index	Underweight (>18.5)		3	3%	3.0
	Normal (18.5-29.9)		45	45%	48.0
	Over(25.0-29.9)		26	26%	74.0
	Obese(30.0-39.9)		22	22%	96.0
	Morbid(> 40.0)		4	4%	100%
	Total		100	100.0	
Yes		69	69%	69%	
No		31	31%	100%	
If answer was yes	Source information	Physician	49	49%	49.0
		Nurses	28	28%	77.0
		Media	10	10%	87.0
		Extraview	4	4%	91.0
		Network	9	9%	100%



		Total	100	100.0	
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Table (2) Distribution of self – care in study sample for patient with type 2 diabetes mellitus.

Variable	M.s	S.D	P-value	C.s
Self – foot - care				
1 Do you examine the skin color of the leg	1.88	0.332	0.714	Ns
2 Do you avoid wear tight shoes	1.08	0.277	0.00	HS
3 Do you check the temperature of warm water befor soaking feet in it and washing them	1.88	0.332	0.000	HS
4 Do you avoid walking bar wear	1.12	0.332	0.425	NS
5 Do you wear comfortable cotton socks	1.88	0.332	0.000	HS
6 Do you use crean for wetting the feet	1.72	0.458	0.016	S
7 Do you cut the nails toes straight directly after bathing	1.08	0.277	1.000	NS
8 Do you avoid siting near the soure iof heat (heater)	1.92	0.277	0.000	HS
9 Do you attend the physician after appears any abnormalsl signs in the feet	1.04	0.200	0.327	Ns
10 Do you check the pulse on legs	1.04	0.200	0.327	Ns

M.S= Mean of score , SD= Standard , C.S= Comparison significant P = Probability , NS= Non significant  $p > 0.05$  , S = Significant at  $p < 0.05$  , HS= Highly significant

This table (2) shows that there are no significant exception the sub items ( 2, 3, 5 ,8 )

Table ( 3) Assciation between age group and the self –care for patients with type 2 diabetic

Age	Self-care-foot	Fr	Mean=+S.D
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20-29	12	1.12=+0.332
30-39	14	1.00=+ 0.00
40-49	43	1.00=+ 0.00
>50	31	1.08=+0.277
Total	100	
P=0.459		

Table ( 3 ) this table indicated that there is no significant association between the age and self-foot – care at study sample p-value >0.05

Table ( 4 ) Association between gender and self –care for patients with type 2 diabetic

Self-care-foot gender	Fr	Mean=+S.D
Female	48	1.25=+0.332
Male	52	1.00=+0.00
Total	100	
P=0. 523		

Table ( 4 ): This table presented that there is no significance between gender and self-care at study sample p- value >0.05

Table ( 5 ) Association between education and self –care for patients with type 2 diabetic

Self-care-foot Education	Fr	Mean=+S.D
Not read writ	28	2.79+=0.579



Read and writ	22	3.00=+0.00
Primary school	17	88=+0.440
Intermediate school	14	3.00=+0.002
Preparatory school	11	2.71=+0.479
College and above	8	3.00=+0.00
Total	100	
P=0.002		

Table (5) : This table indicated that there is a significant association between the education the level and self foot –care at study sample p-value < 0.05

Table (6) Associated between marital status and self foot -care

Self-care-foot Marital status	Fr	Mean=+S.D
Single	14	3.79=+0.569
Married	47	5.00=+0.00
Divorced	10	9.88=+0.450
Widowed	29	3.00=+0.002
Total	100	
P=0. 003		

Table (6): This table indicated that there is significant association between the marital status and self-foot-care P-value <0.05

Table (7) Associated between occupation and self -care

Self-care-foot Occupation	Fr	Mean=+S.D
Student	4	6.89=+0.579
Employee	26	5.11=+0.00
Retired	18	4.88=+0.590
House wife	21	1.12=+0.332
Self-employed	17	1.00=+0.00
Unemployed	14	1.00=+0.00
Total	100	
P=0.005		



Table ( 7 ) : This table show that there is a no significant association between the occupation and self – care at study sample P- value > 0.05

### Discussion :

Discussion of client’s demographic characteristics distribution.

Table (1): Indicated that the finding of the present study revealed that the .age range between (20–69) years, (43%) of the group are (40–49) years and the mean of age are (42±7.1) years. This finding was supported by study carried out by (Boon et al, 2006) who reported that the type 2 DM is principally a disease of the middle aged and elderly. In the UK, it affected (10%) of population over 65 years, and over (70 %) of all cases of diabetes occurred after 40 years and similar to the result, obtained from study carried out by Al Mansour (2010) which indicated that the mean age was (42) years old among clients who attended the out-patient clinic of Al Faiha hospital in Basrah for both sex .[14]

Regarding to gender the high percent (52.0%) of study sample were females .This results were similar to the result obtained from study done by (Al Mansour, 2007 ;Al Ebrahimy 2003). While the option views of the researcher the male and female have an equal chance to expose to diabetic disease.

Concerning to marital status, the majority (47.0%) of study sample were married .This finding agrees with study carried out by (Al Suffar, 2004) which indicated that the majority (83%) of the study sample were married.

In regard to the level of education of type 2 diabetic patient, it is demonstrated that most of them could illiterate, they accounted (28%) for the study sample. This result agreed with results obtain from study carried out 32 by (Musaiger and Al Mannai, 2002) who found that the educational level among Bahraini adults with type 2 diabetes was illiterate.

Regarding to duration since DM diagnosing, (41%) of the study sample were in duration of (6-10) years, these results was supported by results



obtained from study carried out by (Akbar, 2001) who stated that the mean of type 2 DM patient duration averaged (9-8) years.

Regarding to patient's income (65%) had insufficient and (26 %) were unemployed. This result was supported with study carried out by (Al Ebrahimi, 2003) who had found that (60%) were insufficient of monthly income, and (25%) were unemployed.

Relation to (10) Items. Moderate mean scores on item (1) with examine the skin color of the legs. This results agree with results obtain from study done by (WHO, 2010) stated that diabetes self-foot-care toward foot care include always check the colour of lower leg, feet, and brown, or if it is red and shiny, the patients may have circulatory problems.

Relation to item (2) with avoid wear tight shoes, low mean scores. This finding disagree with results obtain from study done by (Angsko, 2011) stated that the criteria of the right fit shoes for diabetic patients include avoid tight shoes with high heels, soles should be strong and flexible with gripping surface, avoid shoes stretching with wear, and the toe box should be roomy enough so you can wiggle all patient toes.

Concerning items (3, 6) with check the temperature of warm water before soaking feet it and washing them, and use cream for wetting feet, Moderate mean scores. This results agree with results obtain from study done by (BHC, 2011) stated that diabetes self-foot-care, patients should be kept their feet clean wash them daily with a soft wash clothes, thoroughly dry feet, especially between the toes after washing use lotion on their feet to prevent cracking with avoid put it between toes. When sock them in 33 warm water remember to check the water, temperature with their wrist or elbow—to ensure that, the water is not too hot to avoid burn.

Concerning item (4) with avoid walking bare foot, low mean of scores . This finding disagree with results obtain from study done by [11] who stated that from self-foot-care diabetes patient was never walk barefoot indoors or outdoors to avoid injury.

Relation to item(5) with wear com comfortable cotton socks ,moderate mean of scores .This finding supported with results obtain from study carried



out by (Juhasz et al, 2010) who stated that for diabetes foot, should be wear clean soft natural socks (Cotton, wool, or a cotton–wool blend) and avoid tight socks.

Concerning to item (7) with cut the toenails straight directly after bathing, low mean scores. This result disagree with results obtain from study done by (Nazario, 2010) stated that for diabetes patient to take care of their toenails must be cut them with straight across and smooth with emery board after bathing, when they are soft, avoid cutting into the corners of toes by use scissors or nail clippers.

Concerning to item (8) with avoid sitting near the source of heat (heater), Moderate mean scores. This result agree with results obtain from study done by [11] stated that self-foot-care for diabetes patients must be protected their feet from heat source and do not use heating pads or hot water bottles to avoid burns.

In regard to items (9, 10) with attend the physician after appears any abnormal signs in the feet and check the pulse on legs, low mean score. this results disagree with results obtain from study done by (WHO, 2010) stated by Check the presence and strength of pulses in the feet pedal pulses (Dorsalis Pedi, Posterior tibia's pluses), check the temperature, swollen of feet and ankles, check between the toes and at the bottom of feet if any infection, fungus, sore etc. finally report it to their physicians.

## **References:**

Editor, The diabetes pandemic .The lancet 2011 378 (9786 )p.99.

American Association of Diabetes Educators.(2014).AADE7self-care behaviors. Retrieved from <http://www.diabeteseducator.org/professionalResources/AADE7#Toolsforhealthcareprofessionals>



Whiting,D.R,Guariguata,L.,Weil,C.,Shaw,J.,IDF diabetes atlas;global estimates of the prevalence of diabetes for 2011 and 2030. diabetes research and clinical practice, 2011.94(3):311-321.

Country statistics and global health estimates by WHO and UN partners for more information visit the Global Health Observatory  
[\(http://who.int/gho/mortality\\_disease/en/\)](http://who.int/gho/mortality_disease/en/)Last updated :january2015

Boulton,A,J,M.,The diabetic foot:grand overview, epidemiology and pathogenesis, Diabetes/metabolism research and reviews , 2008. 24 (Spplment 1 ):p S3- S6.

American Diabetes Association :Standards of medical care in diabetes - 2009.Diabetes care 2009,32(Suppl 1):S13 S61

Apelqvist, J., Bakker, K.,VanHoutum, W.H.,Nabubuurs-Franssen,M,H., Schaper,N.C.,International consensus and practical guidelines on the management and the prevention of the diabetic foot . Diabetes/metabolism research and review, 2000. 16 (Supplement ): p. S84-S92.

Bell,R.A.,Arcury, T. A.,Snively,B.M.,Smith, S.L.,Stafford, J.M.,DohanishR.,Quandl,S.A.,Diabetes foot self-care practices in rural,triethnic population, The diabetes educator, 2005.31(1):p.75-83.

Dorresteijin,J.A.N., Valk,G.D.,patienteducation for preventing diabetic foot ulceration . Diabetes/metabolism research and review,2012.28(Supplement 1 ):p.101-106

Bruckner,M,Mangan,M., Godin,S.,Pogach,L.,Project LEAP of New jersey:Lower extremity amputation prevention in persons with type 2 diabetes the American journal of managed care, 1999. 5 (5):p.609



The Expert Committee on the diagnosis and classification of diabetes mellitus follow-up report on the diagnosis of diabetes care 2003; 26 3160-3167

Singh,N., Armstrong, D.G., Lipsky, B.A., preventing foot ulcers in patients with diabetes . The journal of the American medical association, 2005.293(2): p.217-228.

Editor, Leonid Poretsky, (2009) principles of diabetes mellitus (2<sup>nd</sup> ed.)York:Springer.p.3.ISBN 978-0-387-09840-1

American Diabetes Association (ADA)(2012). In American Diabetes Association online. Retrieved from <http://www.diabetes.org/diabetes/basics/type-2/?loc=DropDownDB-type2>