Turkish Journal of Physiotherapy and Rehabilitation; 32(3)
ISSN 2651-4451 | e-ISSN 2651-446X

Assessment of Level of Stress among Patients with Diabetes Foot in Al-Najaf Al- Ashraf Governorate

Mohammed Jabbar Messier[1,2], Abdulmahdi A.Hasan[3], Shatha Saadi Mohamed[4]

[1] PhD student in College of Nursing, University of Babylon

[2] Department Of Nursing, Altoosi University College, Najaf, Iraq. Email: mohammed.Jabbar@altoosi.edu.iq

[3] Assistant prof, College of Nursing, University of Babylon, Email: abd_mahdi2003@yahoo.com

[4] Assist Proof, Adult Nursing, College of Nursing, University of Babylon Email: shathasaadi64@gmail.com

Abstract

Diabetes mellitus is a metabolic disorder described by the existence of hyperglycemia due to a reduction or lack of insulin secretion, incomplete insulin action or both. A cross sectional study design was developed for this study in the period between the 1st of October and 19th of November, 2021. An accidental sample of (38) patients suffering from diabetic foot ulcers in Al-Najaf Al-Ashraf governorate were selected through the use of a convenience sampling plan. The results of the study has shown that the majority of the study group participants (63.2 %) suffered from moderate stress. The study recommends that the ministry of health provides educational programs that can reduce psychological stress in patients with chronic diseases in general and diabetic foot patients in particular in primary healthcare, specialized, and rehabilitation centres. The study also recommends the preparing and training of nursing staff specializing in mental healthcare to provide mental healthcare for patients in all healthcare facilities.

Introduction

Psychological stress is one of the most common mental problems in human societies and it can be positive or negative. Stress is a sensation that individuals experience while they are trying to deal with problems in their lives such as finances, workplace, relationships, and other factors. Furthermore, stress is experienced when a person senses a genuine or perceived danger to their well-being. Anxiety, fear, nervousness, panic, overwhelmed, and stressed-out are all terms that people commonly used interchangeably with the word "stress". (Fink, 2009) (Fink, 2016).

The source of stress may or may not be easily identified. Stress is common during significant life changes, such as the loss of a loved one, marriage, or the birth of a child, although the source isn't always obvious. It's important to identify what causes the stress to facilitate its management. The manifestation and response to stress varies between different individuals (Patrycja & Czeslaw, 2015).

It is estimated that a person with diabetes has a 25% lifetime risk of developing diabetic foot ulcers, about 6% are hospitalized for due to diabetic foot infections, diabetic

foot ulcers is the most common cause of hospitalization in diabetic patients, and also has significant socioeconomic impact and the complications associated with them. The longer the period of diabetes foot infection along with failure to adhere to the treatments and recommendations related to the disease, the higher the chance of requiring amputation to treat the infection, Patients with DFU have a greater than twofold increase in mortality compared with nonulcerated diabetic patients (Care & Suppl, 2020), (Abdissa et al., 2020).

Methodology

The Study Design:

A quantitative research, "cross sectional design", was conducted during the period between October 1st , 2020 and September 10th , 2021 in Al-Najaf Al-Ashraf Governorate.

The study sample

The study sample consisted of (38) patients who voluntarily participated in the study. The patients were selected through an accidental sample, from the surgical departments of the Sadr City Medical Hospital, the Diabetic Foot Consultation, as well as from hospitals and private clinics for doctors who treat diabetic foot patients in Al-Najaf Governorate. Because it was not possible to acquire a sufficient number of participants from Al-Sadr Medical City, study participants were acquired from private clinics and medical centers after being granted the approval of the doctors who owned the aforementioned clinics and centers that cared for the diabetic foot patients. After that, the patients' consent was obtained personally to participate in the study. The study included visits to hospitals, surgical lounges, and surgical clinics, in the private and public sectors, which provide care for diabetic foot patients participating in the study. The patients were from multiple administrative regions subordinate to the Najaf Governorate.

Study Tools:

For the purposes of the current study, a special questionnaire was created by the researcher through a comprehensive review of literature, books and related previous studies, in addition to the information acquired through the evaluation of diabetic foot patients and based on the objectives of the study. The questionnaire was used as a means of collecting data, and it consisted of three main parts:

Part one: This part consists of an introduction to the research and its importance and objectives.

Part two: Social and Demographic Data Sheet.

Part three: Questionnaire to assess the level of psychological stress in diabetic foot patients using the health stress inventory scale.

Data collection

Data were collected through direct interviews of all study participants through the administration of questionnaire using the study tool.

Result and Discussion

Table 1: Descriptive statistics of sociodemographic variables for diabetic foot patients.

Demographic Data		Study Group	
		F	%
Age	20 – 28	1	2.6
	29 – 36	2	5.3
	37 – 44	5	13.2
	45 – 52	10	26.3
	53 – 60	9	23.7
	61 – 68	8	21.1
	69 – 75	3	7.9
	Total	38	100.0
Residency	Urban "City"	25	65.8
	Rural "Country"	13	34.2
	Total	38	100.0
Marital Status	Single	4	10.5
	Married	32	84.2
	Widow	2	5.3
	Total	38	100.0
Living Status	Live with his/her family	32	84.2
	Live alone	1	2.6
	Live with partner only	2	5.3
	Live with son/daughter	3	7.9
	Total	38	100.0
Occupation	Employ	3	7.9
	Free jobs	14	36.8
	Unable to work	11	28.9
	Housewife	5	13.2
	Retired	5	13.2
	Total	38	100
Income	Enough	2	5.3
	Enough to some extent	15	39.5
	Not enough	21	55.3
	Total	38	100.0

Rural-to-urban migration in low- and middle income countries causes an increase in individual diabetic foot risk. Cost-effective interventions at early stages of the natural history diabetic foot may stem in these countries. However, there are few data on the prevalence of

diabetic foot in developing countries, whilst the understanding the etiology of diabetic foot is complicated by the difficulty in measuring it across differing populations. The results of the present study show that the majority of the sample living at urban residential area. This result comes along with whose results indicate that the majority of the studies subjects are reside in big cities rather than the countryside (Koloverou, et al., 2014).

Also the Ahmad, et al., (2016), state that the majority of the study subjects are living in urban residential area, and the remaining to living in the rural ones. This study revealed a high proportion of patients in the intermediate and high risk for diabetic foot. They are need for necessary preventive intervention strategy to be part of health care program me in the rural setting of developing countries, and the need for clinicians to consider risk assessment as part of patient evaluation.

In addition, there results might come because of the diabetic foot that refers to a modern scourge of industrialized society. Moreover, the diabetic foot may increase in incidence among those persons in urban residential area, than in those from rural.

Also those persons in rural residential area often experience a physical exercise every day as compared with those in urban, which make them less risky to get diabetic foot. The individuals in rural residential areas, are more prone to get diabetic foot due to the risk factors that are more focused in urban than in rural areas such as the psychological stress (Bhargave, 2018).

Regarding to the sample age groups, the study results indicate that the higher percentage of the study sample the old are within (53 - 60) years. This result is supported by Wohpa, et.al, (2016); studies of diabetic foot conditions suggest important differences in the relationship between symptom severity and quality of life in older versus younger patients. However, to our knowledge, no prior studies have examined the relationship between change in stress frequency after diabetic foot and patient-perceived health status and quality of life in older compared to younger patients. Whose results indicate that the (51– 60) years old is the dominant age for the study sample. The result based on distribution of respondents especially by the age shows that the highest distribution is aged (51- 60) years. The increase causes a person at the risk for an increased incidence of diabetes.

Moreover, these results are supported with many scientific facts, which reported that the risk for diabetes increases as the individuals' age increase. This fact is related to many factors: one of them is that individuals with advanced age are less attendance to perform regular physical exercise and this related to the physical impairment of the ageism phenomenon, the risk for diabetes mellitus increase as the patients age increase. This will participate in increasing the incidence of diabetic foot in those people with an advanced age.

Regarding to marital status, the majority of study sample are married. This result is agreed with Horswell, et.al, (2016); indicate finds that the highest percentage is for married patients. In addition, it's clear that the patients in the same age are often married when compared with those with early age groups. Also those patients are part of the east population; those populations often marry early, as compared with other people from other cultures.

Regarding occupational status, the highest percentage is for the free jobs followed by the employed patients. These results come because most of the females are of advanced age that prefers to work in their houses because of the alteration in the physical status. While for the free jobs this result is supported with Leonidis, et.al, (2021); the results indicate that the highest percentages are for unable to work.

Also the Bishop, (2017); mentions: state that the diabetic e.g. (diabetic foot), constitutes a large percentage of the not enough income. And this is refers to many factors such as psychological factors

Table 2: Descriptive statistics of diabetic-related variables for diabetic foot patients

Diabetic-Related Variables		**Study Group**	
		F	**%**
Duration of the disease	1 – 5 years	3	7.9
	6 – 10 years	11	28.9
	11 – 15 years	13	34.2
	16 – 20 years	5	13.2
	21 – 25 years	4	10.5
	26 – 30 years	2	5.3
	Total	38	100.0
Type of the Treatment	Tablets	13	34.2
	Insulin injection	22	57.9
	Tablet and Insulin injection	3	7.9
	Total	38	100.0
DF Duration	1 Year or Less	29	76.3
	2 Years	4	10.5
	4 Years	3	7.9
	5 Years	1	2.6
	8.Years	1	2.6
	Total	38	100.0
Response to treatment	Good improvement	8	21.1
	Slow improvement	17	44.7
	No improvement	5	13.1

	Poor prognosis	8	21.1
	Total	38	100.0
Have Other Diseases	Yes	18	47.4
	No	20	52.6
	Total	38	100.0

In regarding to the duration of the disease, the results indicate that the higher percentages are for (11 – 15) years. This result is supported with the Surwit et.al, (2014); the results indicate that the higher percentages are for patients those who are suffering from diabetes. In addition to the duration of disease, the higher percentages are for those who are suffering from the disease for one year and less.

Concerning the diabetic foot duration about the stress management program, the results show that the majority of the study subjects are 1 Year or Less Surwit et.al, (2014).

Relative to the response to treatment, the higher percentages are for those who are slow improvement. These results come because the patients who are response to treatment are often from those with a new suffering, and the more stable patients are being adapted with their cases, and often depend on the stress management program without the need to be admitted to the hospital unless it is indicated. In addition, the new suffering patients need to be educating about the disease and the stress management program.

It is known in Iraqi hospitals and in light of the job prescription published by the ministry of health, that the physician is the person who conveys the first meeting with patients, and provides the reduction stress among clients with diabetes foot Zamani Alavijeh, et.al, (2018).

Also Zamani Alavijeh, et.al, (2018); mention that have other diseases, in general, and physicians, in particular, occupy positions of enormous influence in helping patients take positive lifestyle actions to lower their risk of diseases. Physician recommendations to make changes in behaviours such as stress management program, improving diet, and stopping cigarette smoking have all been demonstrated to play a very important role.

Table 3: The descriptive statistics of associated diseases with diabetic.

Type of Associated Diseases	**Study Group**	
	f.	**%**
Hypertension	4	10.5
CVA	1	2.6
Hypertension and Cardiac diseases	4	10.5

Hypertension and poliomyelitis	1	2.6
Hypertension and hypothyroidism	1	2.6
Epilepsy and schizophrenia	1	2.6
Total	38	100.0

In regarding to the disease, the results indicate that the higher percentages are (52.6%) of diabetic foot patients participating in the research sample, they do not have chronic diseases that added to diabetes, and (10.5%) of diabetic foot patients suffer from high blood pressure and other heart diseases. Al-Khawaldeh, et.al, (2018); in their study in Jordan found that higher levels of self-efficacy were associated with a daily walk, diet and drug control, and better control of the blood glucose levels in diabetic patients. Schoenthaler, et.al, (2019); studied patients with chronic diseases and observed that patients with higher levels of self-efficacy better perform recommended health behaviours than those with lower levels.

Table 4: The descriptive statistics of stress level.

Stress levels (Pre-test)	**Study Group**	
	F	**%**
Mild	10	26.3
Moderate	24	63.2
Sever	4	10.5
Total	38	100.0

This table results show that the majority of samples (63.2%) have moderate level of stress.

Conclusions

1. The percentage of study participants in the age group between 45-68 years old was 71.1% was much higher than the rest of the age groups. We conclude that diabetic foot ulcer and its complications are more common in this age group.
2. The percentage of study participants with at least a high school diploma or higher was much lower in relation to the educational levels of the remaining participants. Through these results, it appears that most of the participants lack the cultural and educational level sufficient to take care of and control their health conditions, and this in turn affected their jobs and monthly incomes.

3. The percentage of study participants who have had diabetes for 6-15 years were much higher than shorter duration groups. We can conclude that the duration of diabetes is related to the emergence of diabetic foot ulcers.
4. The percentage of study participants who have had diabetic foot ulcers for one year or less was much higher than the remaining diabetic foot duration groups. We can conclude that for most of the patients, their diabetic foot conditions gets worse after 1 year of infection and thus have more complications and possibly death.
5. The results of the study confirmed that the majority of the sample who participated in the research, complain of slow or no improvement in their diabetic foot ulcers. This is a major cause for their diabetic foot ulcer related stress.

Recommendations

1. The Ministry of Health must provide awareness and stress management programs that will reduce psychological stress for all patients with chronic diseases, especially diabetic foot patients, in primary health care centers and in specialized and rehabilitation centers.
2. The Ministry of Health should create educational and awareness programs and provide training for health care staff (through the continuing education department or other channels) on how to diagnose and manage psychological stress in patients suffering from chronic diseases, such as diabetic foot and malignant diseases of all kinds.
3. Placing more emphasis on diagnosing patients who suffer from severe and moderate psychological stress and referring them to mental health departments within health institutions.
4. Inclusion of patients who suffer from a state of psychological stress, after their condition has been diagnosed by specialists in the psychological field, in programs to manage psychological stress.

References

Abdissa, D., Adugna, T., Gerema, U., & Dereje, D. (2020). Patients with DFU have a greater than twofold increase in mortality compared with nonulcerated diabetic patients. *Journal of Diabetes Research, 2020*. https://doi.org/10.1155/2020/4106383

Ahmad, A. C.; Ahmad, A. H.; Anuwar, A. H. K.; Singh, G. S. S.; Tajri, H. M.; Hamid, M. A.; Yusof, M. A. M.; Hassan, M. I.; Bajur, M. Y.; Abdul Majid, S. N.; Valayatham, V. M.; Foo, W. P.; Management of Diabetic Foot; Malaysian Health Technology Assessment Section, clinical practice guidelines, 2016, p.: 26.

Al-Khawaldeh, O. A.; Al-Hassan, M. A.; Froelicher, E.S.; Self-efficacy, self-man-agement, and glycemic control in adults with type 2 diabetes mellitus, J Diabetes Complications, 2016;26(1), p.p. 10–6.

Bhargave, B; Indian Council of Medical Research; Guidelines for Management of Type 2 Diabetes 2018, p.; 1. Wohpa, N.; Purwanti, O. S.; Yulian, V.; Description and Management of Stress of Diabetes Mellitus Patients in Internal Disease Polyclinic Dr.

Moewardi General Hospital (Nurdeeyah Wohpa), Health Science Faculty ,University Muhammadiyah Surakarta, 2015, p.: 5.

Bishop, A.; Stress, social support and coping with a diabetic foot ulcer, the diabetic foot journal, 2017, 10(2), p.: 76.

Care, D., & Suppl, S. S. (2020). 11. Microvascular Complications and Foot Care: Standards of Medical Care in Diabetes-2020. *Diabetes Care*, *43*(January), S135–S151. https://doi.org/10.2337/dc20-S011

Fink, G. (2009). Stress: Definition and history. *Encyclopedia of Neuroscience*, (October), 549–555. https://doi.org/10.1016/B978-008045046-9.00076-0

Fink, G. (2016). Stress, Definitions, Mechanisms, and Effects Outlined: Lessons from Anxiety. *Stress: Concepts, Cognition, Emotion, and Behavior: Handbook of Stress*, (October), 3–11. https://doi.org/10.1016/B978-0-12-800951-2.00001-7

Horswell, R. L; Birke, J. A.; Charles. A; Patout. J; A Staged Management Diabetes Foot Program versus Standard Care: A 1-Year Cost and Utilization Comparison in a State Public Hospital System, Arch Phys Med Rehabil, 2016, (84), p.: 1745.

Koloverou, E; Tentolouris, N; Bakoula, C; Darviri, C; Chrousos, G; Implementation of a stress management program in outpatients with type 2 diabetes mellitus: a randomized controlled trial, H.J, 2014, 13(0), p.p. 1-10.

Leonidis, A; Maria, K.; Sykianaki, E.; Tsolakou, E.; Kouroumalis, V.; Ioannidi, D.; Stavridakis, A.; Antona, M.; Stephanidis, C.; Improving Stress Management and Sleep Hygiene in Intelligent Homes, Sensors 2021, 21(2398), p.p. 7 – 37.

Patrycja, M., & Czeslaw, C. J. (2015). Stress management techniques. *Archives of Psychiatry and Psychotherapy*, *17*(4), 23–31. https://doi.org/10.12740/APP/61082

Surwit, R. S.; Tilburg, M. A. L. V.; Zucker, N. L.; Williams, P. G.; Stress Management Improves Long-Term Glycemic Control in Type 2 Diabetes, diabetes care, 2014, (25) p.p. 30 –34.

Zamani-Alavijeh, F.; Araban, M.; Koohestani, H. R.; and Mahmood, K.; The efectiveness of stress management training on blood glucose control in patients with type 2 diabetes, Diabetol Metab Syndr, 2018, 10(39), p.p. 3-6.