

Level of Awareness About Risk Factors Associated with Diabetic Foot in Type 2 Diabetic Patients

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ABSTRACT

Background: Diabetes mellitus is a chronic illness that needs continuous monitoring and treatment. In order to avoid diabetic foot issues, there has to be more awareness and understanding of the signs of diabetic foot, risk factors, and early screenings.

Objective: Aim of the current study was level of awareness about risk factors associated with diabetic foot in Type 2 diabetic patients

Methodology: This cross sectional study was carried out at the Medicine Department, Khyber Teaching Hospital, Peshawar for duration of one year from January 2021 to December 2021. Data was collected from all diabetic type 2 patients by using pre-designed questionnaire. A total of 350 subjects were included in the study. Data analysis was performed by employing SPSS version 21.

Results: In our study, based on level of awareness about risk factors of diabetic foot, 133 (38%) subjects have poor awareness, 91 (26%) have average awareness whereas 126 (36%) patients have good level of awareness about risk factors of diabetic foot.

Conclusion: Our study concludes that on the basis of current diabetic foot care guidelines, the level of awareness of diabetic type 2 patients about diabetic foot was sub-optimal. Patients with diabetes mellitus should be aware of the medications and lifestyle changes that may help them better manage their blood sugar levels and avoid complications.

Keywords: Level of awareness; Risk factors; Diabetic foot; Type 2 diabetes

INTRODUCTION

Diabetes mellitus (DM) is a chronic illness that needs continuous monitoring and treatment. According to the survey of National Health and Morbidity, the global prevalence of diabetes mellitus, including diagnosed and undiagnosed, was 17.5% among individuals aged 18 years or older¹. As prevalence increases, the morbidity and death rates associated with DM consequences are also rising².

According to a previous research, diabetes was directly responsible for 1.6 million fatalities. High blood glucose was responsible for another 2.2 million fatalities³. Nearly half of all fatalities happen before the age of 70⁴. Many problems may occur as a result of DM, including lower limb amputations due to peripheral neuropathy^{4,5}. Peripheral neuropathy causes a loss of protective sensibility in diabetes patients, making them more vulnerable to foot injuries, which may lead to infection, ulcers, and ultimately amputation if not managed. Vascular disease, reduced mobility of joints, unusual foot pressures, decreased eyesight, foot deformity, unmanaged, extended duration of diabetes, and chronic kidney failure are all risk factors for foot problems in diabetic individuals⁶. In order to avoid diabetic foot issues, there has to be more awareness and understanding of the signs of diabetic foot, risk factors, and early screenings. As a result, identifying the risk factors for diabetic foot issues and practicing good foot care play a

critical role in preventing the aforementioned consequences.

The results of a retrospective assessment carried out in Kelantan revealed that 66% of the amputations performed were due to diabetic foot issues, with 17.2% of the sample undergoing amputation above knee, 32.8% undergoing below knee amputation, and 50% undergoing local foot amputation⁶. Foot care is critical for preventing ulcer development in diabetes patients at risk of developing ulcers⁷.

Some effective foot care techniques include: monitoring the water temperature before soaking the foot, putting on socks and shoes, inspecting shoes for foreign bodies or damaged linings before wearing, avoiding sitting with crossed legs, daily foot wash, not using moisturizing lotions or creams in between toes, drying in between toes, and doing a daily foot checkup⁸. Proper foot care helps patients to protect their feet from damage and infection while also allowing for early detection of foot problems⁹.

According to a prior survey, 58% had inadequate foot care knowledge, while 61.8 percent had inadequate foot care practice¹⁰. This demonstrates the need for additional evaluation and improvement of knowledge and practice, particularly in the primary setting. Based on literature, limited data is available about the awareness level of diabetic patients about the risk factors of diabetic foot. Hence this study was carried out to assess the level of

awareness about risk factors associated with diabetic foot in Type 2 diabetic patients

MATERIALS AND METHODS

This study was cross sectional and carried out at the Medicine Department, Khyber Teaching Hospital, Peshawar. The study duration was one year from January 2021 to December 2021. The current study was approved by the institutional research and ethical committee. The criteria for inclusion in our study includes all the diabetic type 2 patients having age more than 18 years and want to participate in our study. The criteria for exclusion in our study include pregnant women and patients having serious complications like coronary artery disease and stroke. The study aim was explained in detail and consent form was signed from all the participants of the current study. Data was collected from all the patients by using pre-designed questionnaire. A total of 350 subjects were included in the study. Purposive non-probability sampling technique was employed in the current study. The questionnaire was translated to Urdu language to help the patients in understanding. The questionnaire was validated similar to previous study ¹¹. The questionnaire was categorized into three parts: socio-demographic features, clinical features and awareness. Ten questions were asked about awareness of diabetic foot in type 2 diabetic patients. Score of 1 and 0 was used for favorable and un-favorable response. The maximum attainable score was 10 for awareness. The score of <3 was considered as poor awareness 3 to ≤6 as average awareness whereas the ≥7 was considered as good awareness level. Similar categorization was used in a previous study ¹¹. Data analysis was performed by employing SPSS version 21. Mean ± standard deviation was calculated for quantitative data whereas frequency and percentages were used for categorical data.

RESULTS

A total of 350 diabetes type 2 patients were enrolled in the current study. Amongst 350 patients, there were 230 (65.7%) males and 120 (34.3%) were females. (Figure 1) The age wise distribution amongst 350 patients was observed as 25 (7.1%) patients in age range of 20-30 years, 30 (8.60%) in 31-40 years, 105 (30%) in 41-50 years, 120 (34.29%) in 51-60 years while 70 (20%) patients were observed in age group ≥61 years. (Figure 2) Based on marital status, 250 (71.4%) patients were married and 100 (28.6%) patients were single. Based on educational level, illiterate, matric, graduate and postgraduate patients were 140 (40%), 105 (30%), 70 (20%) and 35 (10%) respectively. Based on occupation, 193 (55.1%), 70 (20%) and 97 (27.7%) patients were observed as unemployed, office job and business man respectively. On the basis of Body Mass Index (BMI) 140 (40%) subjects have healthy weight, 147 (42%) were overweight while 63 (18%) patients were obese. The numbers of patients based on duration of diabetes were 105 (30%) in less than 7 group while 245 (70%) subjects were observed as more than 7 group. In the current study, the source of education of diabetic foot was doctors in 210 (60%) patients while social media was observed as source of education in 140 (40%) patients. (Table 1) In our study, based on level of awareness about

risk factors of diabetic foot, 133 (38%) subjects have poor awareness, 91 (26%) have average awareness whereas 126 (36%) patients have good level of awareness about risk factors of diabetic foot. (Figure 3)

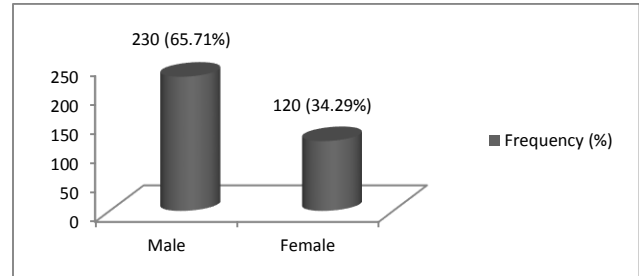


Figure 1: Gender wise frequency of patients

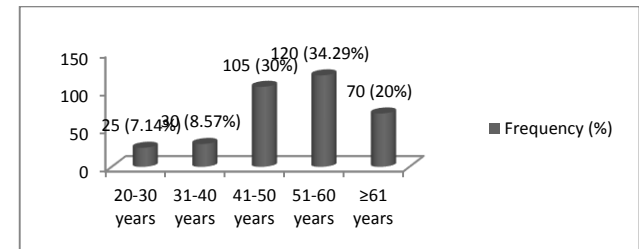


Figure 2: Age wise frequency of patients

Table 1: Socio-demographic and clinical parameters of the patients

Parameter	Sub-category	Frequency (%)
Marital status	Married	250 (71.43%)
	Unmarried	100 (28.57%)
Education level	Illiterate	140 (40%)
	Matric	105 (30%)
	graduate	70 (20%)
	Post-graduate	35 (10%)
Occupation	Unemployed	193 (55.14%)
	Office job	70 (20%)
	Business	97 (27.715%)
Body mass index	Normal	140 (40%)
	Overweight	147 (42%)
	Obese	63 (18%)
Diabetes duration	<7	105 (30%)
	>7	245 (70%)
Education source about diabetic foot	Doctors	210 (60%)
	Social media	140 (40%)

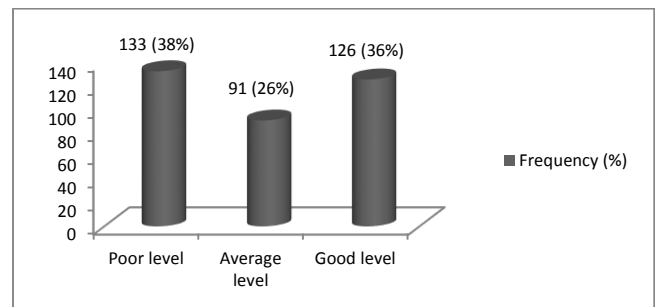


Figure 3: Level of awareness of participants about risk factors of diabetic foot

DISCUSSION

Diabetes is a kind of metabolic syndrome that is related with a variety of other diseases and risk factors. It is critical

to develop prevention methods and to effectively treat these problems once they have occurred. These variables contribute to an increased risk of vascular problems and, as a result, an increase in the incidence of diabetic foot and amputations of lower limb¹². Patient education is critical in conveying skills and knowledge regarding foot care, and it is estimated that it will decrease Diabetic foot ulcers incidence by 50%^{13, 14}. One of the goals of this research was to assess current patient awareness about foot care in order to assist doctors in developing an effective health education program.

In the current study amongst 350 patients, there were 65.71% males and 34.29% were females. The age wise distribution amongst 350 patients was observed as 7.14% patients in age range of 20-30 years, 8.57% in 31-40 years, 30% in 41-50 years, and 34.29% in 51-60 years while 20% patients were observed in age group ≥ 61 years. Similar results were observed by a previous studies and they reported that male were predominant as compared to females^{15, 16}.

In the current research, on the basis of Body Mass Index (BMI) 40% subjects have healthy weight, 42% were overweight while 18% patients were obese. This high prevalence of overweight is an alarming problem. This implies the implementation of a comprehensive program to address it in our community at large, as well as in high-risk groups such as diabetes patients. In our study, based on educational level, illiterate, matric, graduate and postgraduate patients were 40%, 30%, 20% and 10% respectively. Similar finding were observed in other previous studies and reported that a high percentage of diabetic type 2 patients were illiterate¹⁷⁻¹⁹. The numbers of patients based on duration of diabetes were 30% in less than 7 group while 70% subjects were observed as more than 7 group in the current study. These findings were in accordance with the study carried out in Saudi Arabia, who reported that 21% subjects are in less than 7 mmol/L²⁰. Another study carried out by Azab also reported 21% participants in less than 7 mmol/L²¹. In our study, based on level of awareness about risk factors of diabetic foot, 38% subjects have poor awareness, 26% patients have average awareness whereas 36% patients have good level of awareness about risk factors of diabetic foot. These flaws occur due to lack of understanding of warning indicators such as redness/bleeding between the toes, the significance of regularly inspecting footwear for items or damaged linings, and the importance of regularly monitoring of the feet. Level of awareness observed in our study is consistent with the global reported level of awareness^{22, 23}. Other studies reported poor level of awareness about diabetic foot in type 2 diabetic patients^{24, 25}. The results of our study also showed comparable outcomes of awareness and practice level in our population. The level of awareness and practice is similar to each other, which is in concordance with

This lack of diabetic foot care awareness education and practice might be attributed to a lack of awareness programs and education from doctors and paramedical workers at health facilities. Our health-care institutions do not have enough awareness programs for diabetic foot care, and there is a greater need to develop regulations and awareness programs for patients to be educated

during their hospitalization or at the time of release. Many people had been suffering from diabetes for a long time, but their understanding and practice remained inadequate. The importance of doctors in passing on information to patients is strongly linked to diabetic foot care awareness and excellent practice. Physicians play a critical role in advancing foot care knowledge and procedures.

According to an Italian research, more than half of the type 2 diabetic patients had not been evaluated by a physician and 28% had not been educated on foot care. As a result, doctors' attitudes have a considerable influence on patients' knowledge and practices²⁶. Inadequate patient education is frequently caused by a lack of communication between healthcare staff and patients, as well as a lack of time given to educate patients owing to a busy clinic schedule²⁷. Furthermore, clinicians should remain updated on the newest knowledge on foot care and continually emphasize the necessity of patient compliance. This should be a standard procedure for all diabetes patients, both in and out of the hospital. Patients' confidence in controlling their condition will improve if they are educated about proper diabetic foot care¹⁰.

CONCLUSION

Our study concludes that on the basis of current diabetic foot care guidelines, the level of awareness of diabetic type 2 patients about diabetic foot was sub-optimal. Because of high prevalence of diabetes mellitus in Pakistan, the public has to be educated and informed of the disease in order to continue promoting public health policies designed to reduce its prevalence. Patients with diabetes mellitus should also be aware of the medications and lifestyle changes that may help them better manage their blood sugar levels and avoid complications.

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