

Assessing Nurses' Knowledge of Diabetic Foot Care

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Abstract

Tunisia in particular is experiencing an alarming rise in the prevalence of type 2 diabetes. Given that nurses are the first people involved in foot care and education for people with diabetes, it would be useful to carry out our work with a view to improving the quality of foot care for people with diabetes. This is an exhaustive descriptive cross-sectional quantitative study carried out between August 2023 and October 2023 in two university hospitals of Sousse and in the regional hospital of Gafsa. A total of 149 copies with valid answers were collected. In 62.4% of cases, the nurses surveyed reported that they did not have podiatrists working with them on their departments, 26.2% had podiatrists occasionally and 11.4% continuously. This proves that continuing training is essential in all areas of healthcare, to reinforce current knowledge.

Keywords: nurses, knowledge, diabetic foot

1. Introduction

According to the World Health Organization (WHO), diabetes is “one of the world’s biggest killers”. Despite prevention efforts, this pandemic continues to grow throughout the world (Centre Européen D’étude Du Diabète, n.d.). The International Diabetes Federation (IDF) estimates that 463 million people worldwide will have diabetes in 2019 (Atlas Du Diabète De La Fid. 9th Ed., 2019). Tunisia in particular is experiencing an alarming rise in the prevalence of type 2 diabetes. In 1997, it was 13.1% among Tunisians over the age of 25, rising to 15.1% in 2005. Forecasts suggest that the rate could reach 26.6% by 2027 (SaidiO, et al., 2015). Given that nurses are the first people involved in foot care and education for people with diabetes, it would be useful to carry out our work with a view to improving the quality of foot care for people with diabetes. The aim of this study is to evaluate the knowledge of nurses concerning the management of the diabetic foot in the two university hospital centres of Sousse (Farhat Hached, Sahloul) and the regional hospital of Gafsa.

2. Materials and Methods

This is an exhaustive descriptive cross-sectional quantitative study carried out between August 2023 and October 2023 in two university hospitals of Sousse and in the regional hospital of Gafsa. All doctors and nurses practising in these hospitals were included in the study. Data were collected using a self-administered questionnaire constructed from a literature review and validated by experts in the field. Ethical considerations were respected. The results were analysed using SPSS version 22 software.

3. Results

We distributed the questionnaire for our study to 165 nurses, and collected 149 copies with valid answers, 3

copies with incomplete answers, 3 copies that were not returned, and 9 nurses who refused to take part in the study, giving a participation rate of 90.3%. We noted 60.4% women, giving a sex ratio (M/F) of 0.65. The mean age of the participants was 36.9 ± 5.6 years, with extremes ranging from 22 to 59 years. The average length of service was 11.6 ± 7.8 years, with extremes ranging from 1 to 38 years. The breakdown of participants by department is showed in Table 1.

Table 1. Breakdown of participants by department of origin

Department	Frequency	Percentage %
General medicine	24	16,1
Emergency	21	14,1
Orthopaedics	19	12,8
Surgery	39	26,2
Internal medicine	10	6,7
Neurology	9	6,0
Cardiology	13	8,7
Endocrinology	8	5,4
Pneumology	6	4,0
Total	149	100,0

In 62.4% of cases, the nurses surveyed reported that they did not have podiatrists working with them on their departments, 26.2% had podiatrists occasionally and 11.4% continuously. Educating diabetic patients was part of the daily activities of 34.2% of the nurses surveyed. The participants in our study noted that the diabetic foot is one of the most frequent degenerative complications of diabetes. The participants reported that when examining the feet of diabetic patients, foot hygiene should be checked in 77% of cases, the existence of edema in 87.7% of cases, the existence of mycosis in 65.7% of cases and the existence of hyperkeratosis at the foot's support points in 23% of cases. The most frequent type of wound according to the participants was the mixed type, noted by 61.1% of the nurses. The participants noted that diabetic patients at risk of ulceration in the presence of peripheral neuropathy in 32.2% of cases (see Table 2).

Table 2. Breakdown of responses concerning diabetics considered at risk of ulceration in the case of the following lesions

	Frequency	Percentage
Peripheral neuropathy	48	32,2
arteriopathy	29	19,5
Wound/trauma	7	4,7
Don't know	65	43,6
Total	149	100,0

All the nurses did not know about the monofilament examination or what it is used for.

In the case of hyperkeratosis on the feet, participants thought that diabetic patients should remove it with a blade or file in 21.5% of cases, should bathe their feet for 20 minutes in 4% of cases and should consult a podiatrist in 74.5% of cases. According to the participants, the most commonly reported sign of neurological foot is reduced sensitivity in 69.8% of cases and cyanosis in 100% of cases of arterial foot.

According to the participants, the prevention of diabetic foot is essentially based on balancing diabetes (see Table 3).

Table 3. Breakdown of responses concerning diabetic foot prevention

	Frequency (N)	Percentage (%)
Diabetes control	144	96,6
Regular foot care	112	75,2
Appropriate footwear	0	0
Daily foot examination	115	77,2
Never walk barefoot	56	35,6
Trim nails if they are too hard or deformed	0	0

According to the participants, the prevention of diabetic feet is essentially based on consulting a podiatrist and balancing their diabetes, and 98.7% felt that the cooperation of patients with diabetic feet was important in this management.

All the participants noted a need for specific professional training in the management of chronic wounds, and 87.9% of our population would be highly motivated if they were offered the chance to take part in such training. All the participants felt that it was necessary to set up a chronic wound monitoring book for the patient's use, shared by all the healthcare professionals.

4. Discussion

We conducted a descriptive cross-sectional study of nurses working in the two university hospital centres of Sousse and the regional hospital of Gafsa, with a view to assessing their perceptions of diabetic foot care. Of 165 nurses approached, 149 took part in the study.

In our study, we noted a predominance of women. Of the 140 professionals questioned, 60.4% were women. This predominance of women is not shared by all authors. Khan in Saudi Arabia and Shera in Pakistan noted a male predominance of 72.73% and 98.56% respectively. This difference can be explained by the fact that women in their societies tend to stay at home (Khan At et al., 2011; Shera, A.S., Jawad, F. & Basit, A., 2002). In Tunisia, on the other hand, according to demographic data from the health sector, there is a significant feminisation of the medical and paramedical professions (Ministre De La Santé Et Directions Des Etudes De La Planification, 2019). Our results showed that the nurses interviewed did not know how to perform the monofilament examination used in the assessment of superficial tenderness, or what it was used for. Similarly, Kaya Z. and his colleagues showed that none of the nurses in their study had prior experience of the monofilament examination or the assessment of deep sensitivity by tuning fork (Kaya Z & Karaca A, 2018).

According to our results, only 11.4% of patients with a diabetic foot had a chiropodist as an ongoing member of the team. According to Pouvre au Philippe, knowledge of the areas of competence and responsibilities of the players involved tends to limit the risk of misdirection of the patient in the care pathway. Professionals want information on the possibilities for patient referral, so that they can coordinate more effectively (Pouvreau Philippe, 2017).

In addition, once the presence of neuropathy associated with arterial disease has been detected, preventive measures need to be put in place. These consist of educational measures for the patient, combined with regular intervention by the chiropodist for preventive care and the fitting of orthoses if necessary (Pouvreau Philippe, 2017).

It therefore seemed important to us to look at offloading in our questionnaire. In fact, 53% of nurses agreed that offloading is an essential component of diabetic wound management and is essential for healing. Noaillan's study revealed that only 30% of nurses required their patients to be relieved of pressure, and according to Noaillan, this is the essential element in the management of plantar perforating disease (Florence Noaillan, 2004).

It is now clear that, continuing training is essential in all areas of healthcare, to reinforce current knowledge. This training can take the form of regular meetings or conferences on the following topics: screening, treatment and diagnosis of diabetes and therapeutic education. During these training courses, nurses have the opportunity to exchange views with specialists.

References

Aatlas Du Diabete De La Fid. 9th Ed., (2019).

Centre Européen D'étude Du Diabète, (n.d.). Les Chiffres Du Diabète. Available at: [Http://Ceed-Diabete.Org/Fr/Le-Diabete/Les-Chiffres/](http://Ceed-Diabete.Org/Fr/Le-Diabete/Les-Chiffres/)

- Florence Noaillan, (2004). Rôles De L'infirmière Libérale Et Du Médecin Généraliste Dans Le Suivi Des Plaies Chroniques. Université De Poitiers.
- Kaya Z, Karaca A, (2018). Evaluation Of Nurses' Knowledge Levels of Diabetic Foot Care Management. *Nurs Res Pract*.
- Khan At, Lateef Naa, Khamseen Mb, Al Aithan M, Khan Sa, Al Ibrahim I., (2011). Knowledge, Attitude and Practice of Ministry of Health Primary Health Care Physicians in the Management of Type 2 Diabetes Mellitus: A Cross sectional Study in the Al Hasa District Of Saudi Arabia, 2010. *Niger J Clin Pract*.
- Ministre De La Santé Et Directions Des Etudes De La Planification, (2019). Démographies Médicale, Des Médecins Dentistes, Pharmaciens Et Du Personnel Soignant. Available at: [Http://Www.Santetunisie.Rns.Tn/Images/Depamel/Dmographie-2019-Version-Final3.Pdf](http://Www.Santetunisie.Rns.Tn/Images/Depamel/Dmographie-2019-Version-Final3.Pdf)
- Pouvreau Philippe, (2017). Exploration Des Pratiques Des Professionnels De Soins Du Pôle De Santé Du Sud Ouest Mayennais Dans La Prise En Charge Du Pied Diabétique.
- SaidiO, O'flaherty M, Mansour N Ben, Aissi W, Lassoued O, CapewellS, Et Al., (2015). Forecasting Tunisian Type 2 Diabetes Prevalence To 2027: Validation of a Simple Model Biostatistics and Methods. *Bmc Public Health*.
- Shera, A.S., Jawad, F. and Basit, A., (2002) Diabetes Related Knowledge, Attitude and Practices of Family Physicians in Pakistan. *J. Pak. Med Assoc*, 52(10), 8-17.

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