



# The Perception of Patients with a Diabetic Foot Ulcer regarding Nursing Care Based on a Humanistic Approach: Quantitative Study

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**How to cite this paper:** Abbassi, A., Ben Hassine, A. and Larousi, H. (2024) The Perception of Patients with a Diabetic Foot Ulcer regarding Nursing Care Based on a Humanistic Approach: Quantitative Study. *Open Access Library Journal*, 11: e11630. <https://doi.org/10.4236/oalib.1111630>

**Received:** April 28, 2024

**Accepted:** June 23, 2024

**Published:** June 26, 2024

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## Abstract

**Introduction:** Diabetic foot ulcers (DFU) represent approximately 25% of all hospitalizations of diabetic patients. It has a serious impact on patients who suffer from it, leading to a marked deterioration in their quality of life. Hence the importance of intensive interventions by health professionals. **Objective:** The aim of this study is to describe the perceptions of patients with diabetic foot ulcers regarding the behaviors of caregivers based on the dimensions of Caring. **Materials and Methods:** This is a simple descriptive quantitative study. The convenience sample is composed of 54 diabetic participants known to have a diagnosis of foot ulcer. The measurements were carried out using the Caring Behaviors Inventory-24 (CBI-24) questionnaire. Data were collected from the departments of nephrology, endocrinology, general surgery, internal medicine and the Nutrition Institute. **Results:** According to the results found, the “knowledge and skills” dimension was rated the highest. It represents an average of 4.38. The “Insurance” dimension represents a negligible average of 2.4. The “Respect” dimension only represents an average of 2.1. Finally, the least rated dimension was “Positive Connectivity” and it only has an average of 1.81. **Conclusion:** Whatever the skills and technical abilities of the nurses, the caregiver-patient relationship is the major element for the success of interventions. The nurse must demonstrate empathy, compassion and listening to people suffering from DFU in order to help them resolve their feelings of anger and worry. Thus, to adapt to this health problem. Further studies can look into the complexity of factors and barriers that influence the access to holistic care.

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## Subject Areas

Nursing

## Keywords

Diabetes, Foot Ulcer, Patient Perceptions, Nursing Behaviors, Humanistic Approach, Caring

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## 1. Introduction

Neuropathic ulcer or plantar puncture is a serious and common condition of diabetes [1], which often develops from a simple callus. It can be complicated by osteoarticular involvement associated with osteitis [1]. In Europe and the United States, Diabetic Foot Ulcer (DFU) accounts for almost two-thirds of all non-traumatic lower limb amputations [1] [2]. In Africa, more specifically in Tunisia, according to the WHO, the prevalence of type 2 diabetes is estimated at 12.2% in 2016. DFU are the most common complications. They cause 15% to 25% of hospitalizations in diabetics [3].

DFU has a serious impact on patients with DFU, leading to a marked deterioration in quality of life. These patients expect a high level of interaction with the nurse. However, nurses are considered increasingly arduous and demanding [4] [5]. The impact of increased workload is that it is now much more difficult to get to know the patient according to their values and beliefs [6]. As a result, there is a lack of individualization of care, a lack of a holistic approach. However, this approach is translated by the availability for the benefit of the patient to help him integrate into the care process, it is a vision that touches several dimensions and the nurse is forced to mobilize several knowledge and skills to achieve this holistic vision [7]. Faced with this observation, it is important that care so deeply rooted in the nursing role once again gives a decisive place to the humanization and individualization of care [8].

Indeed, nursing is the most significant factor responsible for the perception of the quality of care in a hospital [9]. In this regard, it is of the utmost importance to know how patients perceive the care provided there.

The aim of this study is to describe the perceptions of diabetic foot ulcer patients regarding caregiver behaviours based on the dimensions of Caring.

## 2. Frame of Reference

This study is based primarily on Jean Watson's theory that the concept of care (Caring) means helping and supporting the person by respecting their values, beliefs, lifestyle and culture [10]. Despite the growing recognition of the concept of nursing care, it is not clear that nurses are successfully integrating the elements of this concept into their daily practice. Also, when this theory is applied to describe the perceptions of diabetic patients with foot ulcers, it requires a quality of presence that gives the client a sense of security and confidence.

### 3. Materials and Methods

#### 3.1. Type of Study

This is a simple descriptive quantitative study.

Based on our objective and the scarcity of data in Tunisia, we chose a simple descriptive quantitative study. Indeed, the DFU phenomenon is increasingly affecting people with diabetes in Tunisia. In an aging population, like ours, it is relevant to analyze this phenomenon and understand the perceptions of this clientele.

#### 3.2. Population

The study includes diabetic patients with foot ulcers who went to the endocrinology and nephrology department of the Rabta University Hospital, in department B at the National Institute of Nutrition, general surgery department and internal medicine department of the Charles Nicolle University Hospital during the month of March and April 2021.

#### 3.3. Sampling and Sample Size

A non-probability sampling technique was used to select 54 patients. Patients were selected according to the following criteria: Diabetic person with a diabetes-related foot ulcer; person 18 years or over; freely agreeing to participate by signing the consent form.

#### 3.4. The Measuring Instrument

The Caring Behavior Inventory (CBI) questionnaire was used as a data collection tool. The CBI was originally developed by Wolf, *et al.* [11] to analyze patient perceptions of nurse behaviours through the analysis of 75 items, subsequently reduced to 43 items, which study 5 dimensions; it was also validated in a group of nurses [11]. This scale was designed on the basis of the Transpersonal theory and on the “10 carat factors” highlighted by Jean Watson [12]. CBI items have been further reduced to 24 items, which is the CBI-24 (CBI-24) developed by Wu, *et al.* [13] and is a reduced form of the CBI-42 developed by wolf, *et al.* [11], in order to make participation easier and reduce research costs.

The answer options are divided on a scale of 1 to 6 (1 = “never”, 2 = “almost never”, 3 = “sometimes”, 4 = “usually”, 5 = “often”, 6 = “always”), which generates scores. To answer the questions in the questionnaire, participants note the number that corresponds to [13].

A questionnaire with sociodemographic and clinical data.

The CBI has been translated from English to Arabic using the reverse (back-translation) technique. This technique is carried out in two stages. Initially, the original document in English and a translation done by a sworn translator are transferred to a third party translator. In a second step, the process is reversed and the questionnaire is translated into its mother tongue. The use of this

technique is to keep the sense of questionnaire and ensure that the information is not affected by the translation.

### 3.5. Ethical Considerations

To carry out this survey, we obtained authorization from the heads of departments where we carried out our study. Participants participated by signing consent in a free and informed manner. They were also informed of their rights to refuse participation. To ensure the confidentiality and anonymity of participants, the anonymous questionnaires were coded on the left corner of the questionnaire. A copy of the code and name will be kept in a file specific to the researcher.

### 3.6. Data Analysis Plan

Data entry was performed by Office Excel and SPSS 18. All results were presented in tables, histograms and pie charts with descriptive analyses.

The CBI score is calculated as follows: for each item of the 24 CBI items, the sum of the Likert score checked by each member of the study population was calculated, and the mean was calculated.

## 4. Results

### 4.1. Sociodemographic Data

Compared to the sociodemographic data of all study participants (**Table 1**), the average age of participants is 55 years. There is a male predominance (54%). For civil status, the majority of patients are married (56%). As for the level of education, most participants are illiterate (48%). For the socio-economic level, the majority of participants have an average socio-economic level (54%). For work status, the majority of participants answered by No (59%).

### 4.2. Clinical Data

According to our sample, 57% of patients have type 2 diabetes. More than half (59%) of the respondents were diabetic for more than 10 years. Almost 61% of patients reported a history of diabetic foot ulcer. Among the respondents 39% of the sample claimed that they had suffered from diabetic foot ulcer for 6 to 12 months. More than half of the population had an HbA1c rate greater than or equal to 7 (**Table 2**).

**Table 1.** Sociodemographic data of the population.

Variables	N	%
Age		
18 - 30	4	7
30 - 50	14	26
50 - 70	30	55
<70	6	11

## Continued

Gender		
<b>Masculin</b>	29	54
<b>Feminin</b>	25	46
Civil status		
<b>Groom</b>	30	56
<b>Single</b>	8	15
<b>Divorced</b>	6	11
<b>Widower</b>	10	18
Level of education		
<b>Illiterate</b>	26	48
<b>Primary</b>	13	24
<b>Secondary</b>	11	20
<b>Academic</b>	4	8
Socio-economic Level		
<b>Stocking</b>	21	39
<b>Average</b>	29	54
<b>Raised</b>	4	7
Dwelling		
<b>Alone</b>	14	26
<b>With the family</b>	40	74
Work		
<b>Yes</b>	22	41
<b>No</b>	32	59

**Table 2.** Clinical data for the population.

<b>Variables</b>	<b>N</b>	<b>%</b>
Type of Diabetes		
<b>DT1</b>	23	43
<b>DT2</b>	31	57
Duration of Diabetes		
<b>&lt;10</b>	32	59
<b>10</b>	22	41
History with the DFU		
<b>Yes</b>	33	61
<b>No</b>	21	39
Duration of DFU		
<b>0 - 6 months</b>	13	24
<b>6 - 12 months</b>	21	39
<b>12 months</b>	20	37

**Continued**

HbA1c		
≤7	23	43
≥7	31	57

**4.3. Caring Behaviors Inventory Results (CBI-24)**

To analyze the results, the CBI-24 version was used according to the dimensions identified by Wu *et al.* (2006):

**CBI-24 results by dimension: Insurance**

The “Insurance” dimension scored quite low. It had only 2.4 of average.

The item with the highest score in this dimension was “Give treatment and medication to the patient on time” and had an average of 4. While the item “Talk to the patient” was the least rated by the population and had a mean of only 1.6 (Table 3).

**CBI-24 results by dimension: Knowledge and skills**

The Knowledge and Skills dimension had the highest score. It had a mean score of 4.38.

The item with the highest score in this dimension was “Know how to give injections, intravenous, etc.” and had an average of 5. While the item “Treat patient information confidentially” was the least rated by the study population and had a mean of only 2.8 (Table 4).

**CBI-24 results by dimension: Respect**

The Respect dimension had a fairly low score and had only a 2.1 average.

The item with the highest score in this dimension was “Listen carefully to the patient” and had an average of 2.5. While the item “Empathize with or identify with the patient” was the least rated by the population and had only 1.9 of average (Table 5).

**Table 3.** CBI-24 results by dimension: insurance.

No.	Item	Total Score	Average
1	Return to the patient voluntarily	97	1.8
2	Talk to the patient	85	1.6
3	Encourage the patient to call if there are problems	117	2.2
4	Respond quickly to the patient’s call	105	2
5	Help reduce the pain of patients	200	3.7
6	Disassemble a concern for the patient	98	1.8
7	Provide timely treatment and medication to the patient	217	4
8	Relieve the patient’s symptoms	120	2.2
Dimension	<b>Insurance</b>		<b>2.4</b>

**Table 4.** CBI-24 results by dimension: knowledge and skills.

No.	Item	Total Score	Average
9	Know how to give injections, intravenous, etc.	272	5
10	Be confident with the patient	236	4.3
11	Demonstrate professional knowledge and skills	266	4.9
12	Use equipment competently	269	4.9
13	Treat patient information confidentially	153	2.8
Dimension		<b>Knowledge and Skills</b>	<b>4.38</b>

**Table 5.** CBI-24 results by dimension: respect.

No.	Item	Total Score	Average
14	Listen carefully to the patient	138	2.5
15	Treating the patient as an individual	108	2
16	Support the patient	107	2
17	Empathize with or identify with the patient	104	1.9
18	Allow the patient to express their feelings about their illness and treatment	121	2.2
19	Meet the needs of the patient, whether expressed or not	112	2
Dimension		<b>Respect</b>	<b>2.1</b>

**Table 6.** CBI-24 results by dimension: connectivity.

No.	Item	Total Score	Average
20	Instruct the patient	113	2.1
21	Spending time with the patient	85	1.6
22	Helping the patient to flourish	85	1.6
23	Be patient or tireless with the patient	94	1.7
24	Involve the patient in planning their care	117	2.1
Dimension		<b>Connectivity</b>	<b>1.82</b>

#### CBI-24 results by dimension: Connectivity

The “Connectivity” dimension obtained a very low score, in fact it had only 1.82 of average.

The items with the highest score in this dimension were “Instructing or Teaching the Patient” and “Involving the Patient in Care Planning” and each had an average of 2.1. While the items “Spending time with the patient” and “Helping the patient develop” were the least rated by the population and had an average of 1.6 (Table 6).

## 5. Discussion

According to the results, the “knowledge and skills” dimension was assessed the highest. It represents 4.38 of average. Sinem Aydin and Emilia Björk [14] approved that nurses prioritize basic medical treatment, such as medication handling and wound care. In addition, nurses in war-torn communities primarily focus and prioritize emergency care and first aid, and this refers to the categorization paradigm or what we commonly call the biomedical model, where nursing is disease-oriented and the diseased organ is the focus [15] it is the reign of bio-physical science [16].

The “Insurance” dimension represents a rather low average figure of 2.4. While this dimension represents the heart of the nursing profession, since the behavior of nurses based on the dimensions of Caring concerns to treat the patient with availability, competence and constant assistance

For the “Respect” dimension, only has an average of 2.1. According to theorist Jean Watson, professional practice based on humanistic values, such as collaboration and respect for the human dignity of the person and his family, allows the nurse not only to practice the art of caring but also to show compassion to alleviate the suffering of patients and their families, as well as promote their healing and dignity [17] [18].

The least rated and least perceived dimension by patients was Positive Connectivity. It has only 1.81 of average. This low score, according to the study by Sinem Aydin and Emilia Björk [14], may be related to lack of time. Nurses are overworked, because it seems obvious that departments and hospitals are overcrowded [19] and the nurse is unable to resist treating patients as objects, leading to impersonal nursing care [20].

These results are similar to those of Schultz and his colleagues [21] who conducted the only study identified dimensions of Caring according to the priorities granted, based on average scores. These authors identified first the dimension related to professional skills and knowledge and finally, the dimension of the positive relationship, the other dimensions presenting an order that differs from one study to another, Schultz *et al.* and ours [21]. In another study by Wolf *et al.* [11], these two dimensions: “knowledge and skills” and “positive connectivity”, obtained the same score, according to the perception of the patients.

## 6. Conclusion

Regardless of the technical skills and abilities of nurses, the dimension of “Caring” is fundamental to the success of interventions. The nurse must demonstrate empathy, compassion and authentic listening towards patients suffering from DFU, in order to support them in managing their emotions, particularly anger and anxiety. By engaging in a genuine caring relationship, the nursing team can better respond to these specific health challenges.

## 7. Limits

A significant limitation of this research is the small sample size. Recruitment of a

limited number of type 2 diabetic patients might restrict the generalizability of the results, as a larger cohort might have provided a more representative perspective and allowed better extrapolation of the findings. Furthermore, the short duration of the measurement adds another layer of complexity to the interpretation of the results, because it limits the ability to observe possible long-term effects of the interventions or treatments studied.

## 8. Recommendations

In future research, it would be interesting to carry out a similar study but on a larger sample, which would increase the external validity of the study and generalize the results. Also, it would also be interesting to explore the perceptions relating to caring among nurses who care for patients with DFU, thus making it possible to compare the results to those of our research.

## Conflicts of Interest

The authors declare no conflicts of interest.

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