The purpose of this study was to assess feelings of powerlessness in patients with diabetic foot ulcers. Chronic wounds affect the emotional state of patients, who may experience negative emotions including a sense of loss and powerlessness. The assessment of these feeling should contribute to the planning of interventions aimed at minimizing the impact of diabetic foot ulcers on the daily lives of these patients. Methods. Fifty patients ≥ 18 years of age with type 1 or type 2 diabetes and foot ulcers were selected from 2 outpatient wound-care clinics to participate in the study. Of these patients, 50% were 61-70 years old, 72% were women, 74% were smokers, 10% were alcoholics, 40% had a diabetic foot ulcer for 3-6 years, and 22% for 7-10 years. Wound odor and exudate were present in 82% of patients. Individuals who were unable to respond to a questionnaire due to physical or cognitive deficit were excluded. All participants responded to the Powerlessness Assessment Tool for adult patients (PAT), with scores ranging from 12-60, with higher scores corresponding to feelings of more intense powerlessness. Results. Total PAT scores ranged from 31-40 for 5 (10%) patients, 51-60 for 28 (56%) patients and from 41-50 for 17 (34%) patients. All patients reported total and subscale PAT scores ≥ 34 (moderate to high scores), with a mean total score of 50.12. The maximum PAT score of 60 was reported on the “self-perception of decision-making capacity” domain. Conclusion. These results indicate that patients with diabetic foot ulcers had strong feelings of powerlessness.

Abstract: The purpose of this study was to assess feelings of powerlessness in patients with diabetic foot ulcers. Chronic wounds affect the emotional state of patients, who may experience negative emotions including a sense of loss and powerlessness. The assessment of these feeling should contribute to the planning of interventions aimed at minimizing the impact of diabetic foot ulcers on the daily lives of these patients. Methods. Fifty patients ≥ 18 years of age with type 1 or type 2 diabetes and foot ulcers were selected from 2 outpatient wound-care clinics to participate in the study. Of these patients, 50% were 61-70 years old, 72% were women, 74% were smokers, 10% were alcoholics, 40% had a diabetic foot ulcer for 3-6 years, and 22% for 7-10 years. Wound odor and exudate were present in 82% of patients. Individuals who were unable to respond to a questionnaire due to physical or cognitive deficit were excluded. All participants responded to the Powerlessness Assessment Tool for adult patients (PAT), with scores ranging from 12-60, with higher scores corresponding to feelings of more intense powerlessness. Results. Total PAT scores ranged from 31-40 for 5 (10%) patients, 51-60 for 28 (56%) patients and from 41-50 for 17 (34%) patients. All patients reported total and subscale PAT scores ≥ 34 (moderate to high scores), with a mean total score of 50.12. The maximum PAT score of 60 was reported on the “self-perception of decision-making capacity” domain. Conclusion. These results indicate that patients with diabetic foot ulcers had strong feelings of powerlessness.

Disclosure: The authors disclose no financial or other conflicts of interest.

Key words: mental health, diabetes mellitus, diabetic foot, powerlessness assessment tool
putation. Population-based studies on diabetic foot ulcers have reported annual incidence rates of 1%-4% and annual prevalence rates of 4%-10%.1,3

Advances in the treatment of wounds have contributed to improved care of patients with diabetic foot ulcers. While studies have been conducted to determine the best treatment, it is also important to better understand the complex process of wound healing and the biopsychosocial factors that influence the quality of life of these individuals. Wounds that are difficult to heal, and the discomfort associated with the condition, may affect the emotional state of patients. If the wound fails to show improvement, the patient may experience negative emotions, including feelings of loss, powerlessness, low self-esteem, anxiety, and depression.4-6

According to NANDA International, powerlessness is the “perception that one’s own action will not significantly affect an outcome; a perceived lack of control over a current situation or immediate happening.”7 Thus, assuming that the process of becoming ill may lead to the loss of control over a current situation, the feeling of powerlessness can be seen as a loss. In other words, the patient goes into a state of mourning. If the loss of control is the focus of unsuccessful attempts to change the patient’s self-concept, the diagnosis of anticipatory grief or dysfunctional grief may be more appropriate. On the other hand, if the patient feels that no matter what is done, nothing will change the course of events, then the diagnosis of powerlessness is more appropriate.8

Emotions such as fear, feelings of loss, grief, and powerlessness are common in patients with lesions. In a society that values autonomy, the need to depend on others will contribute to these emotions, which may lead to a state of emotional distress associated with periods of conflict, doubts, and unexpected reactions.4,9,10

It is important for health care professionals to develop the skills to assist patients who visit the clinic regularly with their mental health needs as well as their physical health needs. During regular follow-up visits to outpatient wound care clinics, patients with diabetes who have foot ulcers are frequently anxious, without hope that the lesion will ever heal, and express feelings of loss of control over their situation.4,5 Thus, the assessment of feelings of powerlessness may provide important information to improve the care and delivery of services to these patients.

Although there are studies that have evaluated the mobility and psychological and emotional problems of patients with diabetic foot ulcers,5,8,9,11-13 including their functional status, quality of life, self-esteem, self-image, anxiety, and depression, no studies were found in the literature assessing feelings of powerlessness in this population. Thus, the aim of this study was to assess feelings of powerlessness in patients with diabetic foot ulcers.

Methods

This was an exploratory, descriptive, analytic, cross-sectional study. The study was approved by the Research Ethics Committee of the Federal University of São Paulo (UNIFESP), Brazil (approval number CEP0383/10) and performed in accordance with the ethical standards of the 1964 Declaration of Helsinki and its subsequent amendments. Written informed consent was obtained from all patients prior to their inclusion in the study and anonymity was assured. Data were collected between May 2010 and April 2012.

Fifty patients ≥ 18 years of age, with type 1 or type 2 diabetes, foot ulcers, and fasting blood glucose of 100-125 mg/dl, participated in the study. Twenty-five patients were attending an outpatient wound-care clinic of the university hospital in the city of São Paulo, Brazil, and 25 were attending an outpatient wound-care clinic in a city of the state of São Paulo, Brazil. Patients who were unable to complete the questionnaire due to physical or cognitive deficit, such as those with dementia or mental confusion, were excluded from the study. Before their inclusion in the study and at the beginning of the interview, patients were informed that the purpose of the study was to find out how people feel about their condition.

Two instruments were used for data collection: a questionnaire assessing sociodemographic and clinical characteristics of the patients and the Powerlessness Assessment Tool for adult patients (PAT). The questionnaires were administered by interview by the same researcher.

The PAT was developed in Brazil and tested in a population sample of 210 adult patients from medical-surgical wards for item selection, reliability, and validity; it showed good internal consistency (total scale Cronbach’s alpha = 0.80) and test-retest reliability (P > 0.05).14 The instrument consists of a 12-item measure of powerlessness rated on a 5-point Likert-type scale in which 1 = never, 2 = rarely,
3 = sometimes, 4 = often, 5 = always. Powerlessness Assessment Tool scores range from 12-60, with higher scores corresponding to feelings of more intense powerlessness. The 12 items are grouped into 3 domains: “capacity to perform behavior” (Cronbach’s alpha = 0.845), “self-perception of decision-making capacity” (Cronbach’s alpha = 0.834), and “emotional responses to perceived control” (Cronbach’s alpha = 0.578). The “capacity to perform behavior” domain may be referred to as behavioral control and assesses the patient’s feelings regarding his degree of control over his own behavior. The “self-perception of decision-making capacity” domain measures the patient’s perceived ability to make his own decisions in general. The “emotional responses to perceived control” assesses the patient’s feelings regarding his perceived loss of control over aspects of his life.

### Statistical analysis

Statistical analysis was performed using Student’s t test, the Mann-Whitney test, and chi-square test of independence. Nonparametric tests were used because they are appropriate for analysis of ordinal scale data. The assumption of normality of distribution of data was rejected by the Kolmogorov-Smirnov test. Student’s t test was performed to assess significant differences between means, standard deviations (SD), and maximum and minimum values of PAT scores. The Mann-Whitney test was utilized for comparisons of mean scores on the PAT domains and comparisons of total PAT scores with sociodemographic and clinical characteristics of patients. The chi-square test of independence was used for assessing associations among categorical variables. All statistical tests were performed at a significance level of 5% (P < 0.05).

### Results

Twenty-five (50%) patients with diabetic foot ulcers were 61-70 years of age, and 24 (48%) were ≤60 years; 72% of the participants were women, 10% were alcoholics, 74% were smokers, and 50% were illiterate (Table 1). Thirty-five (70%) patients had diabetes for ≥6 years. Twenty (40%) patients had an ulcer for 3-6 years and 11 (22%) for 7-10 years. Wound odor and exudate were present in 82% of patients (Table 2). Total PAT scores ranged from 51-60 for 28 (56%) patients and from 41-50 for 17 (34%) patients (Table 3). All patients reported total and subscale PAT scores ≥34 (moderate to high scores), with a mean total score of 50.12. The maximum PAT score of 60 was reported on the “self-perception of decision making capacity” domain (Table 4). These results indicate that patients with diabetic foot ulcers had strong feelings of powerlessness.

There were no significant associations of total PAT scores with gender (P = 0.899), age group (P = 0.662), alcohol abuse (P = 0.232), smoking (P = 0.866), presence of exudate (P = 0.378), duration of diabetes (P = 0.372), and age of lesion (P = 0.642). The comparisons of total PAT scores with duration of diabetes and age of lesion are shown in Table 5.

### Discussion

Diabetic foot ulcers negatively impact the quality of life of patients and result in significant costs to the health care system.11-15,16 Health professionals should be prepared to provide not only medical treatment, but also psychosocial

---

**Table 1.** Sociodemographic characteristics of patients with diabetic foot ulcers.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>%</th>
<th>Valid %</th>
<th>Accumulative %</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>26</td>
<td>72</td>
<td>72</td>
<td>72</td>
<td>0.002</td>
</tr>
<tr>
<td>Men</td>
<td>14</td>
<td>28</td>
<td>28</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤60 years</td>
<td>22</td>
<td>44</td>
<td>48</td>
<td>48</td>
<td>0.068</td>
</tr>
<tr>
<td>61-70 years</td>
<td>27</td>
<td>54</td>
<td>50</td>
<td>98</td>
<td></td>
</tr>
<tr>
<td>&gt;70 years</td>
<td>01</td>
<td>2</td>
<td>2</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Alcohol Abuse</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>40</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>0.001</td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
<td>20</td>
<td>20</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Smoking</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>26</td>
<td>26</td>
<td>26</td>
<td>0.023</td>
</tr>
<tr>
<td>Yes</td>
<td>37</td>
<td>74</td>
<td>74</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Chi-square test of independence (P ≤ 0.05)
support, helping the patient to overcome limitations and develop coping mechanisms.12,13,17-19

The results of this study are similar to others that reported that most patients with diabetic foot ulcers are women ≥ 61 years of age who have feelings of powerlessness.5,17,18,20,21 The majority of participants (74%) in the present study were smokers and 10% were alcoholics, which is also in agreement with the literature.4,5,9,12,17 Smoking reduces tissue oxygenation, affects the body’s immune system, compromises the body’s ability to fight infection, and impairs wound healing by inhibiting collagen synthesis.22,23 Nicotine causes vasoconstriction, which increases the risk of ischemia and development of ulcers.24,25 The relatively large percentage of participants who abused alcohol (10%) might be an indication of the high level of emotional distress present in some patients with diabetic foot ulcers, but this was not investigated in the present study. These results showed that 20 (40%) patients had an ulcer for 3-6 years, and 15 (30%) for 7-10 years; in 41 (82%) patients wound odor and exudate were present. These findings are consistent to those reported in other studies.5,9,12 Living with a painful large ulcer with odor and exudate can make the patient feel frustrated, angry, useless, discouraged, and disheartened. Some studies have reported that the odor and exudate associated with ulcers may cause psychological problems regardless of the age, sex, or socioeconomic status of the patient. The presence of odor and exudate and changes in physical appearance also lower the patient’s self-image, impair their ability to participate in social and leisure activities, affect their well being, and diminish the patient’s confidence in their treatment. This negative emotional state may be detrimental to treatment adherence.14-16,10,12,13,17,18,26-29

The presence of diabetic foot ulcers is also associated with pain, fear of leg amputation, and decreased functional status, which affects activities of daily living and intensifies the dependency needs of these patients, resulting in loss of control and autonomy, and consequent feelings of powerlessness.18,26

The PAT domains “capacity of performing behaviors” and “perception of the capacity of making decisions” seems to reflect the patient’s perceived ability (or inability) to act or to give opinions, and to contribute or to make choices throughout the course of his condition or disease.14 The “emotional responses to perceived control” domain portrays a dimension of powerlessness that could be attributed to the emotional response to the loss of control over a given situation.14 In the present study, all patients reported moderate to high scores (≥ 34) on all PAT domains, resulting in a mean total score of 50.12. The maximum PAT score of 60, which corresponds to the strongest feelings of powerlessness measured by this scale, was reported on the “self-perception of decision making capacity” domain. The results of this study indicated that these patients with diabetic foot ulcers experienced very strong feelings of powerlessness.

Several studies5,8,11,28-29 have suggested that the level of

### Table 2. Characteristics of the diabetic foot ulcers.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>%</th>
<th>Valid %</th>
<th>Accumulative %</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration of Diabetes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 5 years</td>
<td>15</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>0.047</td>
</tr>
<tr>
<td>6-10 years</td>
<td>22</td>
<td>44</td>
<td>44</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>&gt; 11 years</td>
<td>13</td>
<td>26</td>
<td>26</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Age of the lesion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 2 years</td>
<td>11</td>
<td>22</td>
<td>22</td>
<td>22</td>
<td>0.062</td>
</tr>
<tr>
<td>3-6 years</td>
<td>20</td>
<td>40</td>
<td>40</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>7-10 years</td>
<td>15</td>
<td>30</td>
<td>30</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>&gt; 11 years</td>
<td>04</td>
<td>8</td>
<td>8</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exudate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>0.001</td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>82</td>
<td>82</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>0.002</td>
</tr>
<tr>
<td>Yes</td>
<td>41</td>
<td>82</td>
<td>82</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Chi-square test of independence (P ≤ 0.05)

### Table 3. Mean total PAT scores for patients with diabetic foot ulcers.

<table>
<thead>
<tr>
<th>Total PAT score</th>
<th>N</th>
<th>%</th>
<th>P-value**</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 30</td>
<td>00</td>
<td>00</td>
<td>0.005</td>
</tr>
<tr>
<td>31-40</td>
<td>5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>17</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>51-60</td>
<td>28</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>50</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

*PAT = Powerlessness Assessment Tool; **Student’s t-test (P ≤ 0.05)
The well being of patients with diabetic foot ulcers is associated with the amount of daily activities (e.g., recreation, work, and sports) performed by these individuals, and highlighted the importance of glucose control in patients with diabetes. Glucose control serves to prevent, or at least decrease the frequency or severity of, complications in patients with diabetes, thus increasing their functional status.5,8,12,28-29

Diabetic foot ulcers may affect the daily life of patients, including changes in sleep pattern and impaired mobility, resulting in reduced quality of life, interference with aspects such as sexuality, and feelings of powerlessness, anxiety, and depression.4,5,9,10,12,17,18,26 On the other hand, patients with positive feelings cope better with their situation and live life more fully, even when faced with adversities caused by the lesion and its treatment.8,14,29,30

The sample size and the lack of calculation of the power of the sample were limitations of this study. The lack of data on glucose control (HBA1c) of the subjects is also a limitation of the study. Further studies with larger sample sizes, providing data of glucose control, and comparing feelings of powerlessness in patients with diabetes with and without foot ulcers are necessary to better understand the impact of these lesions in this population and to extend the results.

**Conclusion**

The assessment of feelings of powerlessness should be a factor in the planning of interventions aimed at creating positive feelings to minimize the impact of diabetic foot ulcers on the daily life of these patients. This study emphasizes the need to focus on other aspects of the health of patients with diabetic foot ulcers, and the importance of health professionals in public health services, hospitals, outpatient clinics, and family health centers to identify changes in the self-esteem, self-image, and quality of life of patients undergoing treatment. Of course the basic care needs of patients living with this condition must be met; but it is also important that caregivers develop the expertise to deal with the emotional difficulties faced by this patient population.

**Reference**

3. Martin IS, Beraldo AA, Passeri SM, Freitas MCE, Pace AE. Root causes for the development of foot ulcers of people with...


