Association of Sociodemographic Factors with Spirituality and Hope in Patients with Diabetic Foot Ulcers

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OBJECTIVE: To evaluate levels of spirituality and hope in patients with diabetic foot ulcers (DFUs) according to sociodemographic factors.

DESIGN: This was a primary, prospective, descriptive, analytical, and clinical study. Questionnaires assessing sociodemographic and clinical characteristics of the patients, the Spirituality Self-rating Scale (SSRS), and the Herth Hope Index (HHI) were administered to all participants.

SETTING: University-affiliated skilled nursing center and outpatient wound care clinic in Pouso Alegre, Brazil.

PATIENTS: Fifty adult patients with DFUs participated in the study. Patients with ischemic diabetic foot and mixed ulcers were excluded from the study.

MAIN RESULTS: On average, patients with DFUs had low levels of spirituality (mean SSRS score, 12.6) and low hope for cure (mean HHI, 12.5). Patients younger than 60 years reported significantly lower levels of spirituality (mean SSRS scores, 11.0), and those older than 70 years had significantly lower hope for cure (mean HHI, 12.5) than other age groups (P = .040). Level of spirituality was significantly lower among women (P = .015) and those living with an ulcer for more than 2 years, who also reported significantly lower hope for cure (P = .029) compared with patients having an ulcer for less than 2 years.

CONCLUSION: On average, patients with DFUs, especially women and older adults, had a low sense of hope and spirituality. Except for gender, age, and ulcer duration, other sociodemographic and ulcer characteristics had no significant effect on the study population’s spirituality and hope.

KEYWORDS: diabetes mellitus, diabetic ulcer, Herth Hope Index, hope, spirituality, Spirituality Self-rating Scale

INTRODUCTION

Lower-limb ulcerations are common in patients with chronic diseases, especially vascular diseases and diabetes.1 Diabetes mellitus is a chronic, noncommunicable disease with increasing prevalence in Brazil and throughout the world that has become a serious health problem. The disease is characterized by chronic hyperglycemia caused by reduced or absent insulin secretion from pancreatic cells or peripheral insulin resistance.2 Lack of glycemic control may lead to the onset and worsening of chronic complications of diabetes, including macroangiopathy, microangiopathy, and peripheral and autonomic neuropathies, which may lead to foot ulcers.3

In Brazil, ulcerations are a serious public health problem because there is a large population with chronic and degenerative diseases; however, no data on the number of individuals with ulcers in the Brazilian population are available. It is estimated that 15% of diabetic patients will develop at least 1 foot ulcer.4,5 Foot ulcers can have a large impact on the lifestyle of patients with diabetes. They result in pain, impaired mobility, and foul odor and wound exudate, involving frequent dressing changes. These factors may lead to a loss of autonomy, reduced ability to perform activities of daily living, social isolation, and lack of motivation to participate in recreational and family activities. These changes negatively affect the physical, emotional, and psychological functioning of patients and may result in sleep disorders, mood disorders (depression), affective disorders (anxiety), and poor treatment adherence. They may also have a negative impact on the patient’s self-concept, self-esteem, quality of life, physical and emotional well-being, hope for healing, and levels of spirituality.6–9 Furthermore, they affect patients’ family members, who may not understand all aspects of the problem and provide support to the patient.10 The treatment of diabetic foot ulcers (DFUs)
requires a multidisciplinary team to provide local and systemic interventions.\textsuperscript{15,16}

Hope is a positive expectation of the future despite the circumstances. It is more than a primitive and anxious attempt to shape the future; it is the fluid, limbic, and necessary response to a threat, including both the anticipation of a favorable outcome and the positive acceptance of the inevitable.\textsuperscript{15} Hope can help patients with chronic conditions cope with their disease. Hope that their health will improve and the wound will heal gives strength to patients to follow a long, difficult treatment involving invasive procedures, changes in their lifestyle, and continued treatment for months or years.\textsuperscript{14-16}

Hope may be classified into 2 types: generalized hope, which refers to a belief in a beneficial but uncertain future, and particularized hope, which identifies an object of hope in a person’s life, such as healing.\textsuperscript{17} Hope contains 6 dimensions:

1. Affective, related to the feelings associated with hope;
2. Cognitive, or thoughts and wishes related to hope;
3. Behavioral, including actions to achieve hope;
4. Affiliative, involving the relationship with self, others, and God;
5. Temporal, correlating the past, present, and future with hope; and
6. Contextual, or the personal life experiences influenced by hope.\textsuperscript{17}

Spirituality is a personal quest to understand the ultimate questions about life, its meaning, and relationship with the sacred and transcendent, which may or may not be associated with a specific religion.\textsuperscript{18} The concept of spirituality is broader than religion, which is an expression of spirituality. People may have their own beliefs without being devoted to God or committed to the system of beliefs and rituals of a given religion.\textsuperscript{19} Spirituality involves personal feelings that foster a concern for others and self and provides a means for moving through guilt, anger, and/or anxiety.\textsuperscript{20}

The challenge comes in assessing such a broad concept. Spiritual well-being, which is the subjective perception of well-being in relation to personal beliefs, is one of the aspects of spirituality that can be assessed. The development of instruments for measuring spiritual well-being was based on the concept of spirituality, which involves a vertical component and a horizontal component without being related to any specific religious content.\textsuperscript{21} However, spiritual well-being has been understudied relative to other topics in healthcare, especially in patients with DFUs and physical disabilities.

The aim of this study was to evaluate the association of sociodemographic factors with hope and spirituality in patients with DFUs.

**METHODS**

This was a primary, prospective, descriptive, analytical, clinical study conducted from December 2012 to March 2013. The study was approved by the Research Ethics Committee of the Sapucaí Valley University (UNIVAS), Pouso Alegre, Minas Gerais, Brazil (approval no. 23339). Written informed consent was obtained from all patients prior to their inclusion in the study, and anonymity was ensured.

Fifty adult patients of both sexes with type 1 or 2 diabetes and foot ulcers, representing a nonprobability convenience sample, were consecutively recruited from a skilled nursing center and an outpatient wound care clinic affiliated with UNIVAS. Patients with ischemic DFUs, mixed ulcers, venous ulcers, arterial ulcers, and/or pressure ulcers were excluded from the study.

The instruments that were administered at inclusion included a questionnaire assessing demographic, clinical, and religious characteristics of patients; the Herth Hope Index (HHI); and the Spirituality Self-rating Scale (SSRS). An interview approach was used because the studied sample had a low education level, with more than half of the participants being illiterate. All interviews were administered by the authors of this article.

Hope was assessed using the cross-culturally validated Brazilian-Portuguese version of the HHI.\textsuperscript{22,23} The HHI is a 12-item measure of hope in adult patients rated on a 4-point Likert-type scale (strongly disagree, disagree, agree, strongly agree). The HHI scores range from 12 to 48, with higher values corresponding to higher levels of hope. Items 3 and 6 are inversely scored. The HHI surveys patient response to the following statements:\textsuperscript{22,23}

1. I have a positive outlook toward life.
2. I have short- and/or long-range goals.
3. I feel all alone.
4. I can see possibilities in the midst of difficulties.
5. I have a faith that gives me comfort.
6. I feel scared about my future.
7. I can recall happy/joyful times.
8. I have deep inner strength.
9. I am able to give and receive caring and love.
10. I have a sense of direction.
11. I believe that each day has potential.
12. I feel my life has value and worth.

This study used the cross-culturally validated Brazilian-Portuguese version of the SSRS, which has a good internal consistency (Cronbach $\alpha = .86$).\textsuperscript{23} The 6-item SSRS is a measure of spiritual orientation. The items are rated on a 5-point Likert scale, ranging from “strongly agree” (1) to “strongly disagree” (5), and reflect the individual’s perception of spirituality at the time of completion. The total score ranges from 6 to 30; lower scores indicate lower levels of spiritual orientation. The SSRS includes the following statements:

1. It is important for me to spend time in private spiritual thought and meditation.
2. I try hard to live my life according to my religious beliefs.
3. The prayers or spiritual thoughts that I say when I am alone are important to me as those said by me during services or spiritual gatherings.

4. I enjoy reading about my spirituality and/or my religion.

5. Spirituality helps to keep my life balanced and steady in the same ways as my citizenship, friendships, and other memberships do.

6. My whole approach to life is based on my spirituality.

Statistical analysis was performed using the Statistical Package for the Social Sciences 8.0 (SPSS Inc, Chicago, Illinois). The χ² test was used to compare the frequency distribution of categorical variables (sociodemographic variables and characteristics of the lesion) between groups. Comparisons of SSRS scores and HHI values for different characteristics of DFUs were carried out using the Kruskal-Wallis test. All statistical tests were performed at a significance level of .05 (P < .05).

RESULTS

Fifty patients with DFUs participated in the study. Thirty-six patients (72%) were women, and 28 (56%) were older than 60 years. Forty-one patients (82%) had ulcers associated with exudate and foul odor, 37 (74%) were smokers, 10 (20%) were abusing alcohol, and 20 (40%) had been living with the ulcer for 3 to 6 years.

On average, patients with DFUs had a low sense of hope for healing (mean HHI, 16.5) and low levels of spirituality (mean SSRS score, 12.6). Often, they had doubts about the divine intervention in their daily life and/or did not participate in religious activities, such as prayer, on a regular basis (Table 1).

Patients older than 60 years reported significantly lower SSRS scores (mean, 11.0) and higher HHI values (mean, 29.6), in contrast with older age, which was significantly associated with lower hope for healing (mean HHI, 16.5) compared with patients with venous leg ulcers (mean HHI, 27.5) (P = .001). Results of a study on spirituality and subjective well-being indicated that patients with DFUs (mean SSRS score, 12.85) and those with venous leg ulcers (mean SSRS score, 11.40) had low levels of spirituality, but no significant differences in spirituality were observed between groups (P = .168).

In the present study, most patients were women, older than 60 years, illiterate, and/or smokers, which is consistent with the profile of patients with DFUs in previous studies. Patients with diabetes experience a gradual and progressive loss of functional capacity with aging, which may result in poor self-care behaviors and foot complications when associated with disease-related factors and low education level. Education on foot care is of fundamental importance for patients with diabetes. Low education level is a risk factor for foot ulcers, amputations, ulcer recurrence, and other complications, as these patients have more difficulty with treatment instructions.

Levels of spirituality were significantly lower among women. Younger age was significantly associated with lower levels of spirituality (mean SSRS scores, 11.0) and higher hope for healing (mean HHI, 29.6), in contrast with older age, which was significantly associated with lower hope for cure (mean HHI, 12.5). Study authors also found that levels of spirituality and hope for healing were significantly lower among patients living with an ulcer for more than 2 years compared with those who had an ulcer for a shorter period.

DISCUSSION

Lower-limb ulcerations are a major cause of morbidity and mortality, especially when associated with systemic factors, resulting in chronicity, frequent recurrence of the lesion, and amputation. They lead to pain, physical limitations, and withdrawal from activities. Diabetic foot ulcers are usually hard-to-heal wounds. They are considered a public health problem, have a great socioeconomic impact on patients, and involve changes in lifestyle, distress, and withdrawal from social and recreational activities, probably affecting levels of spirituality and hope for healing in this population.

On average, patients with DFUs had low level of spirituality (mean SSRS score, 12.6) and low hope for healing (mean HHI, 16.5), which reinforces findings from other studies. A study on feelings of powerlessness and hope found that patients with DFUs had stronger feelings of powerlessness regarding their condition (P = .001) and significantly lower hope for healing (mean HHI, 16.5) compared with patients with venous leg ulcers (mean HHI, 27.5) (P = .001). Results of a study on spirituality and subjective well-being indicated that patients with DFUs (mean SSRS score, 12.85) and those with venous leg ulcers (mean SSRS score, 11.40) had low levels of spirituality, but no significant differences in spirituality were observed between groups (P = .168).

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<table>
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<tr>
<th>SSRS AND HHI SCORES FOR PATIENTS WITH DIABETIC FOOT ULCERS</th>
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<td><strong>SSRS Scores (n = 50)</strong></td>
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<td>Mean</td>
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Abbreviations: HHI, Herth Hope Index; SSRS, Spirituality Self-rating Scale.
Patients with diabetes who develop foot ulcers may feel helpless, especially those who have had invasive treatment for a long period. This may affect their mood and self-esteem, resulting in frustration, anxiety, and depression, as well as difficulty in performing activities of daily living, worries regarding the treatment, fear of developing complications, and poor wound healing. These factors may lead to a lack of hope and low spirituality. The study authors’ experience in the care of patients with DFUs has shown that, at the beginning of the treatment, patients believe that the wound will heal rapidly; however, after a long treatment period associated with pain, wound exudate, and odor, patients start to have doubts about divine intervention in healing and about their religious practices.

Clinical work is supported and driven by hope, and treating patients with feelings of hopelessness may have serious therapeutic consequences. Hope is related to a positive outlook on the future and is an effective strategy for coping with disease. For many patients, religiosity and spirituality are milestones for hope, especially because beliefs and religious or spiritual practices have a strong impact on coping skills and even interpersonal relationships. Therefore, when assessing hope and spirituality in patients with DFUs, it is necessary to consider their values.

Table 2.

<table>
<thead>
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<th>Variables</th>
<th>SSRS Scores (n = 50)</th>
<th>HHI Scores (n = 50)</th>
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<tr>
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Table 3.

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</table>

Abbreviations: HHI, Herth Hope Index; SSRS, Spirituality Self-rating Scale.
Kruskal-Wallis test.
*Statistically significant (P < .05).
opinions, and expectations about psychological changes in their family and social life.30,31

Further studies are necessary to compare levels of spirituality and hope for cure between patients with and without foot ulcers. The absence of a true control group (ie, a group of patients with diabetes but without foot ulcers) and lack of power and sample size calculations are limitations of the study.

CONCLUSIONS

Diabetic foot ulcers negatively affect patients’ subjective well-being and spirituality. This study indicated that, on average, patients with DFUs had less hope for healing and low levels of spirituality. Female gender and younger age were significantly associated with lower hope for healing. Ulcer duration had also a significant effect on study concepts. Other sociodemographic variables and ulcer characteristics had no significant effect on spirituality and hope in patients with DFUs.

Religion and spirituality are a source of comfort, support, and strength for many patients dealing with illness. Promoting spirituality and religiosity in patient care may lead to a stronger feeling of hope in these patients, improved adherence to treatment and patient outcomes, and increased patient satisfaction.

REFERENCES