REVIEW ARTICLE

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Psychosocial factors of patients with venous leg ulcers and their association with healing

Factores psicosociales en los pacientes con úlceras venosas y su asociación con la cicatrización

Fatores psicossociais de pacientes com úlceras venosas e sua associação com a cicatrização

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ABSTRACT

Objectives: To identify psychosocial factors present in patients with venous leg ulcers and the association that these factors have in the healing of venous leg ulcers. **Methods:** An integrative review of the quantitative studies in MEDLINE, Scielo and Cochrane Library databases, between 2008 and 2019, using the keywords, psychosocial factors, venous ulcer, wound healing, anxiety and depression in English, Spanish and Portuguese. **Results:** sixteen studies were included. The psychosocial factors present in patients with venous ulcers were depression, anxiety, feelings of helplessness, subjective well-being, self-esteem, loneliness and spirituality. Stress, a negative perception of venous ulcer, living alone and severe experience of symptoms such as pain and depression have statistically significant associations with longer periods of healing. **Conclusions:** Depression is one of the most frequently measured factors and present in this population. The available evidence on the association of psychosocial factors with the healing of venous ulcers is low.

DESCRIPTORS: Varicose ulcer. Psychology. Emotions. Wound healing. Nursing. Enterostomal therapy.

RESUMEN

Objetivo: Identificar los factores psicosociales presentes en pacientes con úlceras venosas y la evidencia disponible sobre la asociación que estos factores tienen con la curación de este tipo de heridas. **Métodos:** Revisión integradora de la literatura de estudios cuantitativos en las bases de datos MEDLINE, Scielo y Cochrane Library entre los años 2008 y 2019, utilizando las palabras clave, factores psicosociales, úlcera venosa, cicatrización de heridas ansiedad y depresión en idioma inglés, español y portugués. **Resultados:** Dieciséis estudios fueron incluidos. Los factores psicosociales presentes en los pacientes con úlceras venosas fueron depresión, ansiedad, sentimientos de impotencia, bienestar subjetivo, autoestima, soledad y espiritualidad. El estrés, una percepción negativa de la úlcera venosa, vivir solo y la experiencia severa de síntomas como dolor y depresión tienen asociaciones estadísticamente significativas con periodos más prolongados de curación. **Conclusión:** La depresión es uno de los factores psicológicos medido y presente con mayor frecuencia en esta población. La evidencia disponible frente a la asociación de los factores psicosociales con la curación de úlceras venosas es escasa.

DESCRIPTORES: Úlcera varicosa. Psicología. Emociones. Cicatrización de heridas. Enfermería. Estomaterapia.

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RESUMO

Objetivo: Identificar os fatores psicossociais presentes em pacientes com úlceras venosas e as evidências disponíveis sobre a associação que esses fatores têm com a cicatrização desse tipo de ferida. **Métodos:** Revisão integrativa da literatura de estudos quantitativos nas bases de dados, MEDLINE, Scielo e Cochrane Library entre 2008 e 2019, utilizando as palavras-chave, fatores psicossociais, úlcera venosa, ansiedade e depressão em feridas em inglês, espanhol e português. **Resultados:** Dezesseis estudos foram incluídos. Os fatores psicossociais presentes nos pacientes com úlceras venosas foram depressão, ansiedade, sentimentos de desamparo, bem-estar subjetivo, autoestima, solidão e espiritualidade. O estresse, a percepção negativa da úlcera venosa, o fato de morar sozinho e a experiência severa de sintomas como dor e depressão têm associações estatisticamente significativas com períodos mais longos de cicatrização. **Conclusões:** A depressão é um dos fatores psicológicos medidos e mais frequentemente presentes nessa população. As evidências disponíveis sobre a associação de fatores psicossociais com a cicatrização de úlceras venosas são baixas.

DESCRITORES: Úlcera Varicosa. Psicologia. Emoções. Cicatrização. Enfermagem, Estomaterapia.

INTRODUCTION

Venous ulcers (VUs) constitute between 75 and 80% of all lower limb ulcers. They are the most advanced clinical manifestation of long-standing ambulatory venous hypertension, due to venous reflux caused by valve incompetence and venous obstruction[1]. It is estimated that VU affects between 1 to 3% of the world population, the prevalence in Spain is 0.5 to 0.8%, which increases with age, being 3–5% in those over 65 years of age and their incidence is 2 and 5 new cases per 1000 people/year[2,3]. Regarding the Latin American context, there are not enough epidemiological studies. However, a consensus of this region estimated a prevalence of venous ulcers between 3 and 6%[4].

Approximately 50% of VUs are chronic, that is, they are wounds that do not follow an ordered repair process for the timely healing of the anatomical or functional injury, thus being present for more than six weeks or even years, of a cyclical nature, with periods of healing followed by recurrence[5]. On average, VUs remain active for 9 months, 93% heal in 12 months, and the remaining 7% remain uncured after 5 years, with a recurrence rate of up to 70% within three months of healing[6]. Aspects that make it a complex chronic condition that requires self-management, which is based on the Yale University Individual and Family Self-Management Nursing conceptual model, refers to the individuals' ability, together with family, community and health professionals, to manage symptoms, treatments, changes in lifestyle as well as the psychosocial, cultural and spiritual consequences of health conditions[7]. Thus, VUs, as any other chronic condition, demand prolonged nursing care, significant lifestyle changes, adherence to therapeutic regimens that include the use of compression therapy, maintenance and preventive strategies that promote VU healing and prevent its recurrence, such as leg elevation, weight control, physical activity, skin care, protection against injuries, emotion management, social support, among others[3,8].

Under this conceptual perspective, one should first identify those factors that may behave as facilitators and barriers in the self-management of a certain condition, in this case VU, as shown in Fig. 1. Within this group, there are psychosocial factors (psychological and social characteristics) understood as feelings, emotions, thoughts, attitudes and social aspects, such as social support, that influence both the proximal and distal results of self-management, which involve behavior, cognition, biomarkers, management of symptoms, quality of life, access to health services, a better psychosocial state, among others.

Within the postulates of this conceptual framework, it is pointed out that one may modify these results whether the factors that act as facilitators and barriers are modified. This will depend on the needs of patients. The self-management process can also be strengthened, thus activating psychological resources such as self-efficacy, coping, community, emotion processing, to name a few[7]. For example, in the case of VU, Finlayson[9] used this conceptual framework to identify those risk and protective factors that influence VU recurrence and found that age, a history of deep vein thrombosis, multiple previous VUs, and the total duration of VU were risk factors for recurrence of ulcers; while leg elevation, gait and self-efficacy were the protective factors that

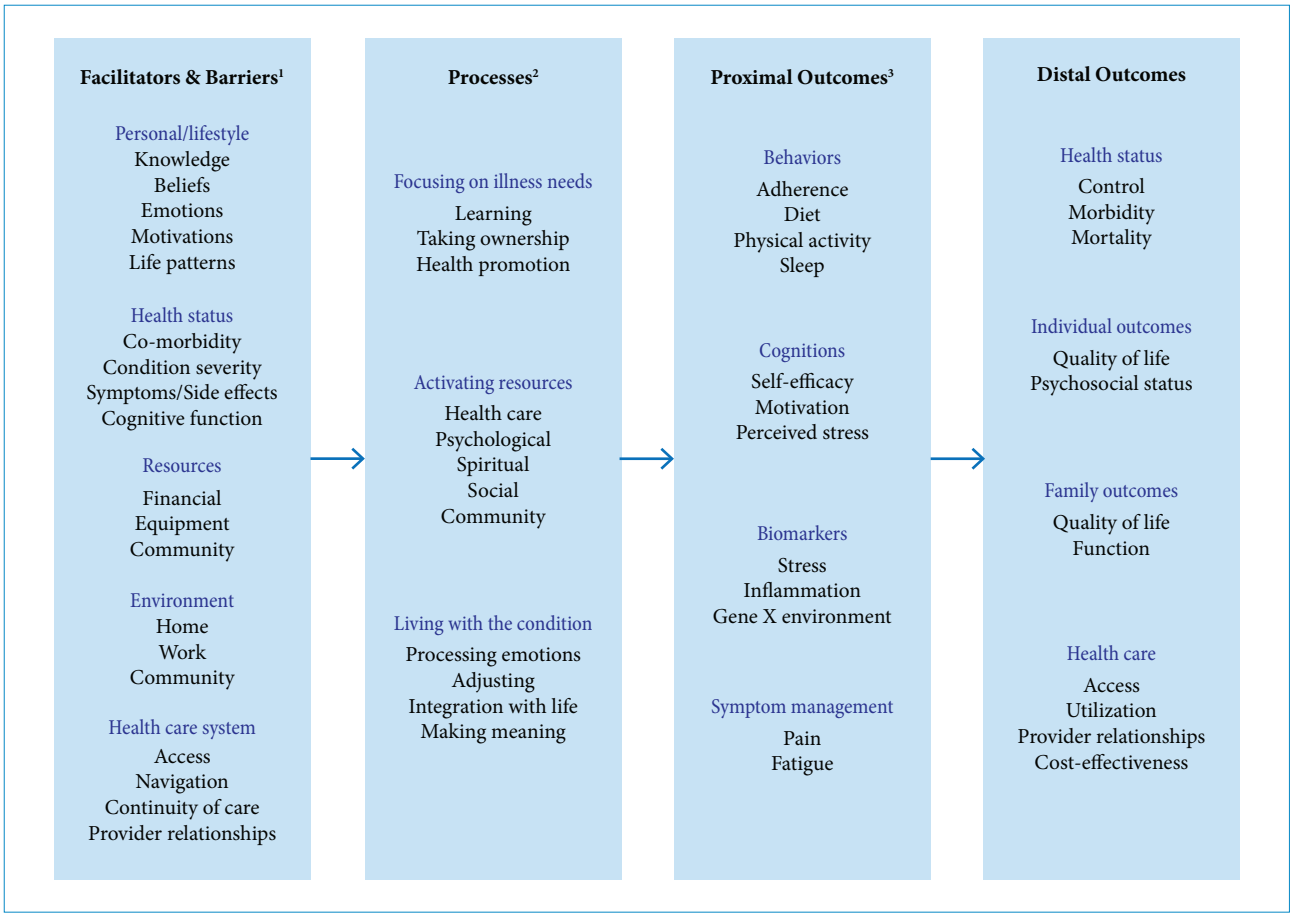

Figure 1. Conceptual framework of the Individual and Family Self-Management[7].

improved the probability of preventing their recurrence. Other studies have shown that patients with anxiety, depression and coronary heart disease as antecedent, increase healing times and have a higher risk of VU recurrence[10,11]. Specifying which psychosocial factors are present in VU patients is difficult, since they have recently been included both in the study of risk factors for developing VU and in the study of factors that influence its recurrence, as the pathophysiological component on the psychological and social aspects of people have prevailed. Nevertheless, anxiety and depression are the most common.

On the other hand, systematic reviews of the literature[12,13] on the impact that VUs have on the quality of life of patients and the synthesis of qualitative evidence on the experience of living with this condition have allowed researchers to grasp the psychological and social consequences that VU and its associated symptoms such as pain, exudate, edema, fatigue and sleep disorders might generate. Indeed, the so-called psychoneurological symptoms that include, pain, cognitive dysfunction, fatigue, depression and anxiety associated with chronic VU are recently taking hold because these symptoms can affect the mental and emotional processing of people, which are necessary for the self-management of their illness[14]. That is, these symptoms can generate new negative emotional states or exacerbate current ones.

Among the emotional consequences of VUs are: anxiety, depression, shame, low self-esteem, loss of control of their own bodies, impotence and hopelessness; among the social ones: living a restricted life, job loss, social isolation, social disconnection, loneliness and a less perceived social support[12,13,15]. Aspects that, in turn, can also have an impact on the healing processes of VU patients, since multiple studies have shown that stress and negative emotions such as anxiety and depression interrupt wound healing processes by mediating hypothalamic-pituitary-adrenal and sympathetic-adrenal medullary axes, prolonging the inflammatory stage and inhibiting the proliferation of fibroblasts and keratinocytes, thus preventing wounds from healing[16]. For example, Bosch et al.[17] and Doering et al.[18], investigated the association

between depressive symptoms and wound healing. The first, through standardized wounds made to the hard palates of 193 young adults, identified that higher depression scores and a high level of dysphoria were associated with late healing, larger wounds, and 3.5 more individuals likely to show off a slower than medium cure ratio. The second, in a sample of patients undergoing cardiac revascularization, found an association between depressive symptoms, deterioration in the healing of their operative wounds, infection, and low physical and emotional recovery. Cole-King and Harding[19] noted that late healing of patients with chronic lower limb ulcers was also associated with high levels of anxiety and depression. Other factors significantly associated with a delay in VU cure were low social class, the lack of central heating at homes, being single and having a low social support[20].

Taking into account that (a) the influence of some psychosocial factors on wound healing is currently recognized, (b) the quantitative investigation of assessment/detection of these factors in the VU population has increased in recent years, as well as the study of its possible impact on healing and (c) considering that only some consensus documents and international clinical practice guidelines for nursing care for VU patients briefly mention the assessment of these factors[1,21,22], which has implications for planned and provided nursing care for these patients.

Consequently, the objective of this review is to identify, based on quantitative studies, what the psychosocial factors present in VU patients are, as well as the association that these factors have in the healing of this type of wound.

METHODS

An integrative literature review was performed; this research method allows the search, critical appraisal and synthesis of the available evidence on a phenomenon of interest in order to glimpse the current state of knowledge in this regard. In this way, it was developed by following the steps proposed by Baldini Soares et al., thus identifying the topic and selecting the research question, establishing the search terms for the studies, setting forth inclusion and exclusion criteria, selecting the studies according to the established criteria, classifying the quality of the studies in relation to the level of evidence, extracting and synthesizing the information, in addition to discussing the findings[23].

Consequently, there were two questions that guided the present review: What are the psychosocial factors present in VU patients reported in the literature? And what is the available evidence on the association that these factors have in VU curing? Hence, a search strategy was developed by means of combinations of the following descriptors in English, Spanish and Portuguese: *venous leg ulcer, psychosocial factor, psychology, wound healing, emotions*, using the Boolean operators "AND" and "OR"; in the SciELO, MEDLINE and Cochrane Library databases. The inclusion criteria considered were: a) articles published between 2008 and 2019 in English, Portuguese and Spanish, b) studies whose sample included people with ulcers of venous etiology and c) quantitative studies whose objective was to identify or learn about a psychosocial factor present in this population and the association between these and the healing of these wounds specifically. Exclusion criteria were: a) literature reviews, opinion articles, publishers and gray literature and c) studies with animals. The search was electronically conducted during April and May 2019 and updated in December 2019.

Subsequently, two reviewers independently performed a critical reading of the selected studies according to the criteria proposed by Lobiondo and Haber[24], which evaluate the internal coherence (background of the problem, research question and objectives) and methodological coherence, reliability, internal-external validity, credibility and usefulness of the results for nursing practice.

Data extraction and synthesis

The data were extracted and organized in a table (Table 1) that included authors, year, country, objective(s), design, sample, instruments used to measure the psychological factors included, main findings and level of evidence. The classification according to their level of evidence was made according to the criteria proposed by the Joanna Briggs Institute (IJB)[25]. This stage of the process was carried out by two authors independently and reviewed by a third researcher with experience, when necessary. Next, a narrative synthesis

was carried out to analyze the extracted data and they are shown below together with the discussion.

RESULTS

In accordance with the objectives of this review, the results are synthesized in terms of search results, description of studies, psychosocial factors in VU patients, association of psychosocial factors with VU cure and implications for nursing practice.

Search results

The initial search yielded 335 articles, of which 132 were duplicated and 203 were retained. After reviewing and selecting the relevance of the titles and abstracts, the authors discarded 176 articles according to the described criteria. Most of them were excluded because the study population did not correspond to VU patients, did not treat any psychosocial factor, were not research studies and, within the variables considered to determine VU cure, no psychosocial aspects were included. Consequently, 16 articles met the inclusion criteria and were included in the present review, as shown in Fig. 2.

Study description

This review included 16 studies, seven of analytical observational and nine of cross-sectional descriptive approach. The level of evidence of the studies was predominantly IV according to the classification proposed by the IJB[25]. These studies were conducted in Brazil (50.00%; n = 8), England (12.50%; n = 2), Australia (18.75%; n = 3), the United States (6.25%; n = 1), France (6.25%; n = 1) and Greece (6.25; n = 1).

They were mostly carried out in outpatient services, community wound clinics, and hospitalization services. Four studies sought to identify the possible association between some psychosocial factors and late healing of venous ulcers[26–29], six studies measured the level of depression in these patients[24–29] and the remaining studies evaluated other factors such as spirituality, hope, impotence, subjective well-being, self-esteem and body image and their relationship with some sociodemographic characteristics. A total of 1738 patients participated in the 16 identified studies. Most of the participants were women and ages ranged from 20 to 70 years. In the period from 2013 to 2016, 62.5% (n = 10/16) of scientific production was concentrated on this topic. Table 1 summarizes the characteristics of the articles reviewed and their main findings.

Regarding the critical reading of the studies, all have shown coherence with the description of their problem areas, research question and objectives; yet, some studies did not report any validity tests of the instruments used to measure the psychosocial factors analyzed, which could limit the validity of their findings. The fact that most of the studies used samples conveniently limited the interpretation and generalization of the results.

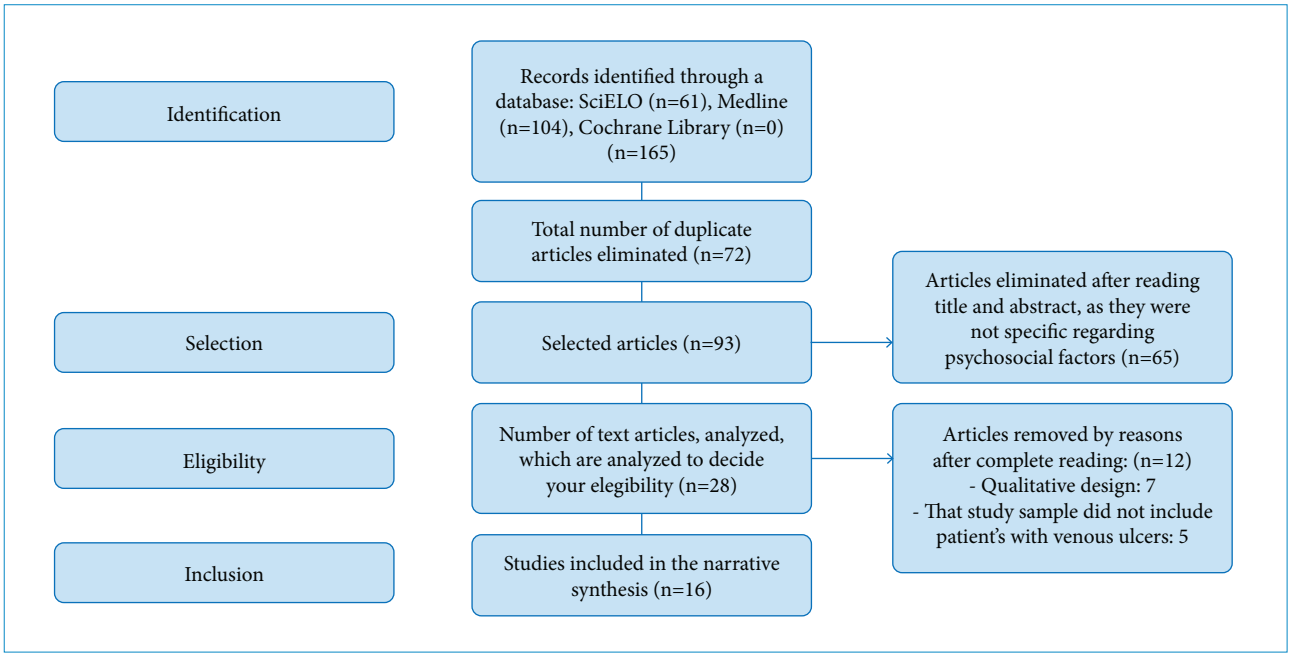

Figure 2. Flowchart of the article search and selection process.

Table 1. Psychosocial factors in patients with venous ulcers, description of the studies.

Authors, year, country and level of evidence	Objective(s)	Design and sample	Instruments	Key findings
Moffat et al[30]. (2009) England III	Identifying deficiencies in the psychological health of patients with venous ulcers compared to a sample from the general population of the same age and gender.	Cases and controls study 95 patients	– *Nottingham Health Profil (caliad de vida)* – *Hospital Anxiety and Depression Scale* – *The Medical Outcomes Study Social Support Survey* *The COPE scale*	Depression levels were significantly higher in the group of cases (average ratio of 5.3 vs. 3.6, p < 0.001). Social support was significantly lower in cases than in controls (p ≤ 0.008) and cases also used significantly fewer coping strategies than controls. The cases showed a significantly poorer quality of life in all areas compared to controls (p ≤ 0.001).
Souza et al[31]. (2009) Brazil IV	Appraising the presence of anxiety and depression in patients with venous ulcers and investigating their possible associations with sociodemographic variables.	Prospective and randomized cross-sectional study. 30 patients	*Hospital Anxiety and Depression Scale*	Anxiety was identified in 30% of patients and depression in 40%. There is no statistically significant association between anxiety and depression and sociodemographic variables.
Faria et al[32]. (2011) Brazil IV	Appraising the quality of life, self-esteem and functional status of patients with chronic venous ulcers.	Descriptive study with a comparative group. 80 patients with venous ulcers and 80 patients without venous ulcers.	– *The Medical Outcomes Study 36-Item Short Form Health Survery questionnaire (SF–36)* – *The Rosenberg Self-Esteem scale* – *Standford Health Assessment Questionnaire (HAQ-20), short version.*	There were significant differences between groups regarding the quality of life in terms of physical functioning, role, body pain, social functioning, emotional role, vitality and general health status (p = < 0.005). At the hub, there are significant differences regarding self-esteem within the participants. Also, significant differences in terms of functional status in all categories have been found (p = 0.001), except in the food category.
Salomé et al[33]. (2012) Brazil IV	Appraising the level of depressive symptoms presented by venous ulcer patients.	Cross-sectional descriptive study. 60 patients	*Beck Depression Inventoy*	91.6% of the participants have shown some level of depression. The five most frequent symptoms were: sadness, distortion of the body image, dissolution of the libido, social isolation and self-depreciation.
Salomé et al[34]. (2013) Brazil IV	Appraise the subjective well-being and spirituality in patients with venous ulcers or diabetic foot ulcers.	Descriptive, prospective and analytical study. 40 patients with venous ulcers and 40 patients with diabetic signs	– *The Subjective Wellbeing Scale* – *Spirituality Self-Rating Scale*	The majority of patients considered ulcers as a punishment and showed a low spirituality. The mean scores on the components of positive affect, negative affect and life satisfaction of the Subjective Well-Being Scale were 2.55, 1.55 and 1.50, respectively, for patients with venous ulcers.

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Table 1. Continuation...

Authors, year, country and level of evidence	Objective(s)	Design and sample	Instruments	Key findings
Chaby et al[26]. (2013) France III	Identify the clinical characteristics, among which are known as possible prognostic factors for the healing of venous ulcers, and which sociodemographic and psychological factors associated with venous ulcers, are associated with a complete cure at week 24.	Prospective, multicenter, cohort study. 104 venous ulcers from 104 patients	– *Beck Depression Inventory* – *Coopersmith Self-Esteem Inventory*	Almost half of the patients were depressed and one third had low self-esteem. Nonetheless, no evidence of association was found between these psychological factors and the complete healing of the venous ulcer at week 24. At week 24, 41 of 94 venous ulcers were cured. The complete healing of venous ulcers was significantly associated with superficial vein surgery (p = 0.001), adherence to compression therapy at week 4 (p = 0.03) and at week 24 (p = 0.01), ankylosis of the joint of the ankle (p = 0.01) and the mean percentage reduction of venous ulcer area at week 4 (p = 0.04).
Salomé et al[35]. (2013) Brazil IV	Assess feelings of helplessness in patients with venous ulcers.	Exploratory, descriptive, analytical cross-sectional study. 60 patients	*Powerlessness Assessment Tool*	52% of the patients reported total impotence scores ranging from 51 to 60, and 32% of them reported total scores from 41 to 50, indicating that these patients had strong to very strong feelings of helplessness and lack of control when coping with difficulties in their daily lives and those related to their treatment. The presence of exudate and odor from the wound had a significant impact on feelings of helplessness (p = 0.004) in the studied population.
Pereira et al[36]. (2014) Brazil IV	Assess subjective well-being and depression in elderly patients with venous ulcers.	Descriptive, analytical and multicenter study. 55 elderly patients	– *Yesevage's reduced version of the GDS-15* – *The Subjective Wellness Scale*	41.82% of the patients had mild to moderate levels of depression, while 47.28% showed severe depression. On the subjective well-being scale, most participants feel unhappy and dissatisfied with life.
Edwards et al[37]. (2014) Australia IV	Identify the prevalence and severity of common symptoms and the appearance of groups of symptoms in patients with venous ulcers.	Secondary analysis of data obtained from four observational, prospective longitudinal studies. 318 patients	– *Pain: The Medical Outcomes Study Pain Measures* – *The Geriatric Depression Scale of Yesavage.* – *The Cardiff Wound Impact Schedule* – *Health-related quality life: Short Form-12 Health Survey Questionnaire (SF-12)* – *Fatigue: energy subscale within the SF- 12.*	The most frequent symptoms were sleep disorders (80%), pain (74%) and swelling of the lower extremities (67%). 60% of patients reported three or more symptoms at a moderate to severe intensity level. Two groups of symptoms were identified: (1) pain, depression, sleep disturbances, and fatigue; (2) swelling, inflammation, oozing, and fatigue.

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Table 1. Continuation...

Authors, year, country and level of evidence	Objective(s)	Design and sample	Instruments	Key findings
Salomé et al[38]. (2015) Brazil IV	Assess the association of sociodemographic factors with the hope to cure levels of religiosity and spirituality in patients with venous ulcers.	Descriptive, prospective, analytical, clinical study, not randomized. 50 patients.	– *Spirituality Self-rating Scale orientation.scale.* *Herth Hope Index*	The patients have shown low levels of spirituality (MD: 10.20, SD: 4.35) and moderate hope of healing (MD: 25.5, SD: 8.40) regarding their venous ulcers. Lower values of hope against healing were found in patients whose ulcers had exudate and odor, between 20 and 39 years of age, and those who had a wound for less than one year. No associations were identified between the variables studied.
Zhou y Jia[39]. (2016) USA IV	Investigate the prevalence of depressive symptoms in wounded patients and explore the relationship between depression and sociodemographic characteristics, as well as characteristics of their wounds.	Descriptive study 222 patients.	– *The Patient Health Questionnaire 9-item (PHQ-9), (tool for clinicians to the Primary Care Evaluation of Mental Disorders as depression.)*	The ratio of patients with minimal to severe depressive symptoms was 80.8% in patients with venous ulcers. 26.6% of the patients had a positive detection for depression. No significant differences were found in the probabilities of having a positive detection of depression and having a venous ulcer and/or of any etiology.
Salomé et al[40]. (2016) Brazil IV	Assess self-esteem and body image in patients with venous ulcers.	Multicenter, prospective, descriptive, analytical and clinical study. 59 patients	– *Body Investment Scale* – *The Rosenberg Self-esteem*	The mean self-esteem score was 22.66 (SD: 4.1), indicating low self-esteem. The average total score of the Body Investment Scale was 27.49 (SD: 3.8), and the scores on the body image and body touch subscales were also low, indicating negative feelings about the body. There is an association between these variables (p = 0.002).
Parker et al[27]. (2016) Australia IV	Identify the risk factors associated with late healing in participants with venous ulcers and whether psychosocial factors play a role in this process.	Secondary analysis study of seven previous longitudinal prospective studies. 247 patients with 318 venous ulcers	– *The Short Form 12-item health survey* – *The Geriatric Depression Scale of Yesavage.*	Four early predictors were independently and significantly associated with healing failure at 24 weeks. The participants (1) were living alone (OR 2.3, 95% CI [1.13–4.61], p = 0.03); (2) had a reduction of less than 25% in the ulcer area within two weeks of treatment (OR 10.07, 95% CI [4.60–22.19], p <0.001); (3) had higher ulcer severity scores (OR 5.1, 95% CI [2.33–11.88], p = 0.001) and (4) were not treated with high-level compression therapy (i.e., > 30 mmHg) at the time of the initial evaluation (OR 4.18, 95% CI [1.95–8.97], p = 0.002).

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Table 1. Continuation...

Authors, year, country and level of evidence	Objective(s)	Design and sample	Instruments	Key findings
Kouris et al[41]. (2016) Greece III	Assess quality of life, anxiety, depression, self-esteem and loneliness in patients with leg ulcers.	Cases and controls study 102 patients with leg ulcers Controls: 102 healthy volunteers, matched by gender and age.	*– Dermatology Life Quality IndexHospital -Anxiety and Depression Scale, – Rosenberg's Self-esteem Scale* *– The UCLA Loneliness Scale*	Patients with leg ulcers had statistically higher scores compared to healthy volunteers with respect to the total score of the anxiety and depression scale and the score of the anxiety subscale (p = 0·031 and p = 0·015, respectively). There was a significant difference compared to the loneliness scores, being greater in the cases than in the controls (p = 0·029). Female patients have shown a higher score of anxiety (p = 0·027) and social insulation (p = 0.48048), and worse quality of life (p = 0.018) than male patients with ulcers.
Walburn et al[28]. (2017) England III	Investigate the impact of stress, disease perceptions, and behaviors on the healing of venous ulcers.	Prospective observational study for 24 weeks. 63 patients	*– The Perceived Stress Scale* *– Hospital Anxiety and Depression Scale* *– Revised Illness Perception Questionnaire* *– Health behavior of Adapted Summary of Diabetes Self-Care Activities* *– Adherence Questionnaire* *– Short-Form Health Survey (SF-12) for quality life.*	A slower healing rate in the ulcer area was predicted by increased stress (standardized β = −0.61, p = 0.008), depression (standardized β = −0.51, p = 0.039), and maintaining negative perceptions or beliefs about the ulcer (standardized β = −1.4, p = 0.045). A more negative emotional response to the ulcer at baseline (emotional representation of the ulcer) was associated with a greater number of weeks to heal (hazard ratio [HR] = 0.63, 95% confidence interval [CI] = 0.41-0.95, p = 0 .028).
Finlayson et al[29]. (2017) Australia IV	Identify subgroups of patients based on their experience with a set of symptoms (pain-depression-fatigue-sleep disorder) and identify differences in patient characteristics, as well as healing of venous ulcers and quality of life between groups.	Secondary analysis study of longitudinal studies. 247 patients.	*– Pain was measured using the Medical Outcomes* *– Study Pain Measure* *– The Geriatric Depression Scale* *– Fatigue was measured with the SF-12 Vitality Subscale* *– Sleep disturbance was measured with the Cardiff Wound Impact Schedule Disturbed Sleep items.* *– QOL index for Quality Life*	67% of the patients were in a subgroup of mild symptoms (that is, they did not experience or mildly experienced pain, depressive symptoms, fatigue, or sleep disturbances). 33% of the patients were classified in the severe symptoms subgroup and have shown poorer quality of life scores (t = 8.06, p < 0.001) and had 1.5 times fewer (95% CI 1.02–2.08) probabilities of being healed in the following 24 weeks (p = 0.037).

DISCUSSION

Seven were the psychosocial factors identified in this population group from the reviewed literature. Depression, anxiety, feelings of helplessness, subjective well-being, self-esteem, loneliness and spirituality/hope for a cure.

Depression was the most common factor present in this population group[30,31,33,36,37,39,41] Moffat et al.[30] identified in their case-control study that the VU patients had significantly higher levels of depression, fewer support networks and less perceived social support than the controls; moreover, the quality of life of the former was significantly lower in all areas taken into consideration, such as body pain, sleep, social isolation, emotional response, energy and mobility. The origin of certain negative emotional states could be explained by the fact that it implies living with a VU, and they generate pain, limited mobility, exudate and often an unpleasant odor, which inevitably affects people's well-being.

In fact, odor, exudate, and pain are aspects associated in various studies not only with states of depression and anxiety, but also with feelings of helplessness, low subjective well-being, and low spirituality.[34,38,40,42]. In this matter, Aguiar et al.[43] indicate that VU patients are victims of prejudice, discrimination and social shame for showing something in their bodies that makes them different from other people. People with VU are perceived as restricted because they believe they can make other people uncomfortable, a feeling of segregation that hinders social interaction and affects social isolation and low self-esteem. Hopkins[44], in his turn, described that VU patients show a biographical disruption, that is, there is fragmentation in the course of life before and after VU.

On the other hand, depressive symptoms are reported to be common in patients with VU ≥ 90 days and an associated pain. Zhou and Jia[39] reported that the odds of a positive test for depression in patients with wounds > 90 days from the initial examination was 3.20 (95% CI [1.49, 6.87]) and 2.53 (95 CI). % [1.26, 5.08]) in those with ulcer-related pain. Indeed, depression was among the most frequent group of symptoms experienced in Australian VU patients, along with pain, sleep disorders, and fatigue. The increase in the severity of these systems was associated with the female gender, a history of rheumatoid arthritis, a longer duration of the ulcer and a decrease in quality of life[37]. Regarding anxiety, it has been associated with the presence of odor, pain and exudate[42,45]; based on the qualitative evidence, patients associate anxiety with the fear of falling or suffering an injury that could lead to the development of additional VU rays, as well as making the wound worse or infected[46]. In turn, feelings of helplessness become relevant due to the lack of perceived control over VU, patients have described this as an "eternal healing process"[47]. In older adults, limited mobility, decreased functional capacity, and self-imposed isolation from the situation are conditions that can exacerbate these kinds of feelings that further impair well-being and quality of life[48].

Subjective wellness[34,36], self-esteem[32,40], solitude[41] and spirituality[34,38] were other factors found, but to a lesser extent. Findings that probably reveal two aspects: the first that, in the literature, the study of negative emotions or states has had greater relevance than positive emotions (well-being, hope, optimism, self-esteem, resilience, etc.); and second, studies about other chronic conditions have shown the protective effect that positive emotions have on health behaviors and on the clinical results of patients. For example, in type 2 diabetes, positive psychological states, such as well-being, are prospectively associated with lower HbA1c, fewer complications from diabetes, decreased heart events and mortality[49].

Association of psychosocial factors with VU curing

High levels of stress, depression and a negative perception towards the wound were associated with a significantly slower rate of change in the VU area, regardless of the sociodemographic characteristics, comorbidities and ulcer characteristics[28]. Parker et al.[27] explained that participants who lived alone were twice as likely to delay healing compared to those who did not live alone. Finlayson et al.[29], on the other hand, showed that the patients classified in the severe symptoms experience group (pain, depression, sleep disorder and fatigue) had a significantly longer healing time. These patients took, on average, 24 weeks to heal after study initiation, compared to 16 weeks for those who had been classified in the mild symptoms group. Additionally, it was determined that these patients were significantly less likely to heal after controlling for evidence-based treatment, that is, compression therapy and ulcer severity. This same group at the onset of the study were 1.5 times

less likely to be healed in the following 24 weeks (CI: 95%, 1.02–2.08; p = 0.037)[29].

There is evidence that shows how stress and negative emotions, depression and anxiety, in addition to having a negative effect on the rate of wound healing, negatively regulates the systemic pro-inflammatory response[50]. The negative correlation between perceived stress, emotional distress, wound healing and cortisol production has been verified, whose levels increase as wounds take longer to heal[51]. Glaser and his employees have established that high scores of perceived stress evidenced significantly low levels of interleukin 1 and 8, necessary items to regulate the production, release and activation of metalloproteinases, which are important in the reconstruction and remodeling of wounds[52]. As the positive effect of interventions that seek to reduce psychological stress in wound healing has also been verified, meta-analyzes and systematic reviews of the literature indicate that interventions such as physical exercise, expressive writing, hypnosis, social support, relaxation, yoga, have produced a positive effect on aspects such as depression, anxiety, scarring rates and factors of the immune response[53,54].

In fact, nursing through experimental studies in the area has shown that patients receiving care under a community care model that promotes social interaction, participation, empathy, peer support and empowerment of their condition have shown shorter healing times, having improved their quality of life, perceived social support, self-esteem, and decreased their pain[55,56]. Furthermore, nursing interventions that promote healthy lifestyles, self-care, physical activity and exercise have also shown positive results in VU healing rates among other psychosocial variables[57–59].

Among the limitations of this review there is the generalization of the findings, due to the limited number of studies specifically identified with VU patients, most of them carried out in Brazil; and the behavior that these factors might have in other cultures is unknown. The level of evidence is still descriptive. Most of the samples were small and provided for convenience.

Implications for nursing practice

Revising suggests an urgent need to improve the available evidence regarding the psychosocial factors present in VU patients and their association in the healing processes. The assessment of negative and positive emotional aspects should be introduced as a central and main component in nursing assessment. The proposal and development of nursing interventions, with multidisciplinary participation in outpatient units, and community centers should be a priority. Such interventions, in addition to promoting healthy lifestyles, must promote the well-being of people, potentiate other psychosocial factors such as resilience, hope, spirituality, gratitude, among others, since these could contribute to adoption, modification and/or execution of certain healthy behaviors that, in turn, would help in the management of VU symptoms and even in its healing process.

CONCLUSIONS

This integrative review shows that depression is one of the most frequently measured psychological factors in this population. The available evidence regarding the measurement of different psychological and social aspects present in VU patients and their association with healing is scarce. The judicious development of comparative, cohort, retrospective, prospective, longitudinal, and intervention studies is required to better understand this phenomenon of interest to nursing in order to provide care that responds to patients' real needs. The exploration of positive psychological states such as optimism, resilience, hope, among others, based on the qualitative and quantitative research paradigms, constitutes a current challenge for nursing.

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AUTHOR'S CONTRIBUTION

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