

# QUALITY OF LIFE AND PERCEPTION OF DISEASE IN PATIENTS WITH CHRONIC LEG ULCER

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**SUMMARY** – Chronic wounds on lower extremities most commonly result from chronic venous insufficiency. Chronic leg ulcer impacts the quality of life in a number of ways such as reduced mobility, pain, unpleasant odor, sleep disturbances, social isolation, etc. This study included 100 patients with chronic wounds/lower leg ulcer (59% of women and 41% of men, aged 31 to 89) treated locally with special wound dressings for moist wound healing. Study results showed no age and sex correlation with the quality of life, and all participants evaluated their quality of life and health satisfaction as neither good nor bad, but it was found that the disease mostly affected social relationships and to a lesser extent patient satisfaction with their physical and mental health, and the environment. Results on the disease perception showed that the participants considered their disease to have a significant effect on their life and would last for a relatively long time, but they also believed they had good control of their disease. Also, they considered the disease to have many symptoms affecting them; they were worried about their disease which they understood relatively well; they were aware that treatment could be very helpful; and that the disease had moderate effect on their emotional health. According to sex, the disease was found to have greater effect on women (especially on their emotional condition) and women had more faith in successful treatment, while correlation with age was nonsignificant. This study confirmed the importance of the patient psychological condition and the need of due care of their psychological reactions to and facing with the disease.

*Key words: Quality of life; Leg ulcer; Perception; Chronic disease*

## Introduction

Chronic lower leg wounds are most commonly the result of chronic venous insufficiency (70%-90%), but also of other factors, e.g., arterial disease (5%-10%), malignant disease (2%), neuropathy (0.5%), vasculitis (0.5%), etc.<sup>1-4</sup>. The prevalence of venous leg ulcer varies among different countries and studies (from 0.1%

to up to 0.6% of total population). Most studies report that 1% of the population fall ill of chronic leg ulcer at least once during lifetime, and the prevalence rises with age<sup>5</sup>. There are, hereby, different positions as to when the wound becomes chronic, so this definition varies, but mostly it is considered to be from two to four months<sup>4,5</sup>.

Just like psychological factors can influence the occurrence of skin disease, so does skin disease influence the patient's psyche, as demonstrated in a number of studies<sup>6</sup>. Therefore, chronic wound can influence the person's psyche and quality of life (QoL), which means a subjective experience of one's own life

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Received May 7, 2014, accepted July 3, 2015

determined by objective circumstances and by personality characteristics that have an impact on the perception of reality and specific life. On the other hand, there is a term 'health related quality of life' (HRQoL), which implies the absence of any kind of disease or pathological state of the body, and which is not used as a measure of general QoL<sup>7</sup>. According to investigations, there is a connection between QoL, external events and personality of each individual. The QoL of a person depends on different factors, such as sex, age, education, social support of family and community, physical health, physical mobility, pain, emotional limitations, social life, mental health, vitality/energy and general health condition<sup>8</sup>. Therefore, in patients with chronic leg ulcer, HRQoL is mostly affected because of several factors including reduced mobility, pain, unpleasant odors, sleeping disturbances, social isolation and frustration, and inability to perform everyday duties. On the other hand, individuals differ in accuracy and level of their perception of disease (defined as organized series of beliefs about impacts of the disease on our body, on our daily activities and experiences, is it treatable, etc.). It is considered that the way of perception is the key factor for the type and intensity of their psychological reactions to disease, and consequently for their later behavior and attitude towards disease<sup>8,9</sup>. Thereby, the patient's perception of his own disease includes his beliefs about disease identity, cause, duration, potential consequences and possibility of disease treatment/control, while the identity of the disease relates to the way how patients describe their disease and its symptoms. Our study was conducted to determine the influence of chronic leg ulcer on the patient's psyche and his/her life.

The aim of the study was to determine the QoL by assessing the following quality domains in patients with chronic leg ulcer: quality of living, satisfaction with one's own health condition, satisfaction with physical and mental health, satisfaction with social relations and environment (by age and sex); to determine the impact of patient's perception of the disease impact on his/her life, disease duration, disease control, help with treatment, symptoms of the disease, anxiety about the disease, understanding the disease, and impact on the patient's emotional condition (by age and sex).

The study hypothesis was that there would be age and sex differences in patient QoL and perception of the disease in patients with chronic wounds.

## Materials and Methods

This study was conducted at the Clinical Department of Dermatology and Venereology, Sestre milosrdnice University Hospital Centre, Referral Centre for Chronic Wounds of the Ministry of Health of the Republic of Croatia, from June 1, 2012 to July 29, 2012.

All study patients were diagnosed with chronic wounds and were treated (by local therapy) with dressings for moist wound healing. All patients were evaluated with the use of the same psychometric instruments. The sample comprised subjects of both sexes and different ages (59 women and 41 men, aged 31-89 years). In all study patients, the diagnosis was established on the basis of medical documentation and clinical features. On admission, a physician or a nurse informed the patients about the purpose of the study and asked them for participation. Those who accepted signed an informed consent and were then administered a questionnaire to fill out. Patient data were collected from medical history documentation, which included basic medical history (diagnosis and treatment procedure).

The following questionnaires were used: 1) personal data questionnaire; 2) the World Health Organization (WHO) WHOQOL-BREF quality of life questionnaire; and 3) WHOQOL BREF-IPQ short questionnaire about perception of disease<sup>10,11</sup>.

1) Personal data questionnaire is a short questionnaire designed for this study; it consisted of questions regarding age, sex, diagnosis and local therapy;

2) WHOQOL-BREF quality of life questionnaire is a brief version of the WHO WHOQOL-100 questionnaire intended for QoL evaluation<sup>10</sup>. WHOQOL-BREF was constructed by using and analyzing pilot research data WHOQOL-100. Twenty-four queries from the original questionnaire were chosen, one from every of 24 facets which describe QoL and one query was chosen to evaluate QoL as a totality and one for general health, so the questionnaire consisted of 26 queries. Psychometric studies showed the WHO-

QOL-BREF to be a reliable and valid instrument, correlating highly with WHOQOL-100, i.e. about 0.89 (because of the lower number of queries and quicker filling out, priority was given to WHOQOL-100). The perception of QoL was scored in every of the 4 domains separately (physical health, psychological condition, social interaction, and environment), therefore this scale was moderately positive, which means that higher score represented higher QoL. The questionnaire consisted of 26 questions, and each question was scored on Likert's scale from 1 (worst) to 5 (best). After the score transformation, which was done in two steps, the scores for each domain were within the 0-100 scale. The Croatian verified version of the questionnaire was used in this study. Based on the equidistant structure of Likert's scale, this study took into consideration that participants with a score higher than 60% of the scale maximum (SM) in a particular domain had good QoL, and those with a score lower than 60% SM had poor QoL for that specific domain; and

3) Brief Illness Perception Questionnaire (BREF-IPQ) is a questionnaire for evaluation of cognitive components and one emotional component of illness perception, constructed in 2005 by Broadbent *et al.*<sup>10</sup>. The questionnaire consists of eight quantitative questions (to which participants answered on a 0-10 scale) and one qualitative question regarding the causes of the disease. Results were observed separately by each question. The questions address the components of illness perception: impact of the disease, duration, treatment, disease control, symptoms, and understanding the disease; and one question is related to the emotional component of illness perception.

On statistical analysis, we used the SPSS for Windows (version 17.0) software. Firstly, we determined

*Table 1. Demographic features of study patients with chronic leg ulcer (N=100)*

Age (yrs)	Range	M (SD)
	31-89	66.26 (12.188)
Sex	Male	Female
	41 (41%)	59 (59%)

whether the results justified the use of parametric tests; the normality of distribution was tested by K-S Lilliefors test and variance equation by Levene's test. Results were compared by use of t-test at the 5% level of significance. Correlation between particular indicators was calculated by use of Pearson correlation coefficient.

## Results

The study included 100 patients aged 31-89 (median 66.26; standard deviation, SD=12.188) and the results were processed and expressed using descriptive statistics (Table 1).

### *The relation between chronic wounds and quality of life in study patients*

Study patients evaluated QoL and illness impact by domains (on 1-5 scale) neither good nor bad (3.20); considering their satisfaction with health, they were neither satisfied nor unsatisfied (2.88). The highest disease impact was reported on social relations (3.60), followed by patient satisfaction with physical health (3.13), mental health (3.34) and satisfaction with environment (3.31) (Table 2). There was no statistically significant age and sex difference in any QoL domain.

*Table 2. Personal quality of life in study patients with chronic leg ulcer*

	N	Minimum	Maximum	M	SD
Quality of life(QL)	100	1	5	3.20	0.953
Satisfaction with health	100	1	5	2.88	0.935
Physical health	99	2.00	4.86	3.1328	0.52598
Mental health	100	2.17	4.67	3.3467	0.53217
Satisfaction with environment	100	2.13	4.88	3.3125	0.56867
Social relations*	100	1.33	5.00	3.6000*	0.79561

\* Highest disease impact on social relations.

Table 3. Sex impact on personal perception of disease in study patients with chronic leg ulcer

	Sex	n	Mean	SD
Impact	Male	41	6.4390	2.44999
	Female*	59	7.6610*	2.59715
Treatment	Male	41	5.2927	2.98533
	Female*	59	6.6949*	2.88429
Emotions	Male	41	4.5854	2.98308
	Female*	59	6.7119*	3.24861

\*The disease had greater impact on females, females had more faith in treatment, and the disease had greater impact on emotions in females.

### Perception of disease in patients with chronic wounds

The results of individual perception of the disease (on 1-10 scale) showed the patients to consider that the disease significantly affected their life (7.6), that it would last for a relatively long period (8.6), that they controlled their disease relatively well (6.32), that treatment could improve their condition (6.12), and that the disease had many symptoms affecting them (7.58). The patients were very concerned about their disease (7.23), they considered they understood it relatively well (7.64) and that the disease moderately affected their emotional condition (5.84).

The perception of disease showed sex difference in the extent of its impact on life (-2.36), on help with treatment (-2.35) and emotional condition (-3.32). Men and women differed in perceiving the extent to which the disease affected their lives, i.e. women perceived it to be higher in comparison to men. Women believed more in the efficiency of treatment and the disease had a higher effect on their emotional condition compared to men (Table 3).

Considering age and perception of disease, results yielded no correlation between age and the following parameters: effect of disease on life, disease duration, disease control, help with treatment, symptoms, concerns about disease, understanding the disease, and patient emotional condition.

In general, our results demonstrated that there were no age and sex differences in QoL. All study patients evaluated their QoL and satisfaction with health as being neither good nor bad, and they perceived the greatest effect of the disease to be on social relationship, and to a lesser extent on satisfaction with physical and mental health, as well as satisfaction with the environment.

### Discussion

Chronic leg ulcer is a huge public health, social and economic problem for individuals as well as for the society. It may be said that chronic leg ulcer often lowers QoL in patients and their families as well, especially because it significantly reduces patient mobility and leads to many other difficulties such as pain and chronic disease anemia. Neither can the social burden of treatment costs for such patients be ignored because according to some data from various countries, they account for 1%-3% of total health care budget. Expensive, long, exhaustive and commonly dubious treatments pose huge health, social and economic problems all over the world. Therefore, factors such as perception of disease and QoL in patients with chronic leg ulcer are important for the community. A number of studies have already researched the link between emotional stressors, psychiatric diseases, and dermatoses (e.g., psoriasis, atopic dermatitis, urticaria, human papilloma virus warts, herpes simplex, vitiligo, acnes, alopecia, prurigo, etc.), but there also are *vice versa* impacts<sup>6</sup>. In our study, we analyzed QoL and perception of their disease in patients with chronic leg ulcer. We took into consideration the model of balance or compatibility in subjective evaluation of QoL, and regarding this we found that people evaluated QoL with 60%-80% SM on average, this evaluation continuing for lifetime. Generally, the disease has multidimensional effects on QoL and manifests with physical symptoms (e.g., pain which can cause mobility reduction) and psychological symptoms (depression, feeling of worthlessness), which limit normal functioning<sup>7</sup>. There also are indirect effects such as limited working ability, potential social isolation, higher depen-

dence on the others, etc. In our study, we analyzed QoL domains by using the WHOQOL-BREF QoL questionnaire, while the subjective perception of disease was evaluated by the Brief Illness Perception Questionnaire-IPQ<sup>10,11</sup>. Our study results showed no statistically significant age and sex differences in QoL in patients with chronic leg ulcer. All study patients evaluated the quality of their own lives (on 1-5 scale) as neither good nor bad (3.20), and satisfaction with their health as neither satisfying nor unsatisfying (2.88). The greatest disease effect on QoL was recorded in social relationships, followed by satisfaction with physical (3.13) and mental health (3.34), as well as satisfaction with the environment (3.31). The analysis of QoL in patients with chronic leg ulcer revealed that the disease had the same adverse effect on all patients (irrespective of age and sex). Yet, considering other diseases, several studies showed that patients with chronic wound evaluated QoL worse in comparison to other chronic skin diseases. The results of previous studies on the effects of various dermatologic disorders on QoL demonstrated that chronic wounds, of all dermatologic diseases, had the most prominent effect on QoL<sup>12</sup>. Until now, several studies were carried out analyzing the effect of chronic wounds on QoL. According to some results, chronic wounds showed more effect on QoL in men than in women<sup>13</sup>. On the other hand, our study showed that the disease had more intensive effect on QoL in women than in men, especially regarding treatment and emotional condition.

According to our results, women perceive their disease and treatment more intensely, they are also emotionally more sensitive, and this can be explained by the fact that women are more concerned about their physical appearance, as well as how treatment limits their everyday activities (especially in housewives, working women, mothers, wives, and grandmothers as a more sensitive group of patients considering how their disease limits everyday activities and general QoL). Our results also showed the effect of the disease on QoL to decrease with duration of the disease, so it can be assumed that ill people learn to live with certain feeling of helplessness. Considering that those patients are most commonly elderly people, it is concluded that they try to adjust their lives to their limitations.

Quality of life represents individual experience of a person, which is at the same time the result of inheritance, personal development and influence of the environment in which this person lives. It can be stated, based on the results of this study, that patients with chronic wounds experience the burden of their illness equally irrespective of age and sex. The disease most commonly causes psychological changes in individuals (depression, anxiety, helplessness, lower self-confidence, feeling of one's losing control), which in turn result in lower QoL. Because of long and often not so successful treatment, patients start to fear that the wound would never heal, and they doubt about the physician and nursing staff competence and success of treatment. Because of almost constant pain and reduced mobility, these patients commonly have depressive disorders and they depend on the help of the others, pointing to the importance of the social and environmental influence<sup>14</sup>. A special problem is pain which, according to the research, is present in 64%-82% of patients with venous ulcers. Therefore, there are different subjective effects (e.g., body functioning is limited because of pain) and secondary effects (decreased working ability, patient isolation and dependence on the others), leading to patient feeling of futility and mental health changes, which leads to reduction of QoL.

Based on the results yielded by the disease perception questionnaire, patients with chronic leg ulcer had lower QoL because of their illness, they experienced many symptoms and considered to understand the disease well; they also considered that their disease affected their emotional life moderately and that treatment could significantly help them. Considering the perception of the disease according to sex, we found that the disease more intensively affected women than men, especially their treatment and emotional condition. Still, patients commonly refuse to talk about their beliefs regarding the disease, primarily because they are afraid of conflict with their doctor or they do not want to be considered as uninformed and uneducated. Undoubtedly, there is a relation between patients with chronic leg ulcer and their psychological problems, therefore dermatologic therapy of such patients should be combined with psychotherapy.

## Conclusion

During treatment of chronic diseases including chronic leg ulcer, QoL and individual perception of illness should never be underestimated. Knowing that this disease has multidimensional effects on QoL and patient individual perception, there is a need of multidisciplinary approach and team work of all those involved in treating patients with chronic leg ulcer. This is extremely important for patient physical health, wound healing and mental health. Future studies should find methods and interventions that will help the patients with chronic leg ulcer become aware of the possibilities of disease treatment. A well organized and systematic health education can improve the overall health and lead to appropriate health behavior of patients, which will contribute to successful treatment and increase the patient QoL.

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## Sažetak

### KVALITETA ŽIVOTA I PERCEPCIJA BOLESTI U BOLESNIKA S KRONIČNIM ULKUSOM POTKOLJENICE

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Kronične rane na donjim udovima najčešće su posljedica kronične venske insuficijencije. Kronična rana na potkoljenici bitno utječe na kvalitetu života zbog više čimbenika: smanjuje se mobilnost bolesnika, javlja se bol, neugodni mirisi, poremećaji spavanja te dolazi i do socijalne izolacije bolesnika i frustracija. Naše istraživanje je provedeno kod 100 bolesnika s kroničnom ranom na potkoljenicama (59% žena i 41% muškaraca, dobi od 31 do 89 godina) liječenih lokalnom terapijom, tj. oblogama za vlažno cijeljenje rana. Rezultati su pokazali da dob i spol ne utječu na kvalitetu života bolesnika i svi ispitanici procijenili su svoju kvalitetu življenja i zadovoljstvo zdravljem ni dobrim ni lošim, a uočili su najveći utjecaj bolesti na socijalne odnose te nešto manje na zadovoljstvo fizičkim i psihičkim zdravljem te zadovoljstvo okolinom. Rezultati percepcije bolesti su pokazali da ispitanici smatraju kako bolest značajno utječe na njihov život i da će relativno dugo trajati te da nad njom imaju relativno dobru kontrolu. Smatraju da bolest ima dosta simptoma koji utječu na njih, zabrinuti su zbog svoje bolesti koju relativno dobro razumiju i smatraju da im liječenje može dosta pomoći, a bolest ima umjeren utjecaj na emocionalno stanje ispitanika. Prema spolu se utvrdilo da bolest više utječe na percepciju bolesti u žena (osobito na emocionalno stanje) i da one više vjeruju u uspješnost liječenja, dok se utjecaj dobi nije pokazao značajnim. Ovo istraživanje dokazuje važnost psihološkog stanja bolesnika i potrebu da se uz samo zdravstveno stanje bolesnika vodi briga i o njihovim psihološkim reakcijama na bolest i suočavanju s njom.

**Ključne riječi:** *Kvaliteta života; Ulkus kruris; Percepcija; Kronična bolest*