

Exploring Factors Affecting Quality of Life for Patients with Chronic Venous Leg Ulcers

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Abstract: Aim: This study aims to explore the factors affecting quality of life (QOL) for patients with chronic venous leg ulcers (VLU). **Methods:** A descriptive exploratory study was conducted at the surgical outpatients' clinics (general & vascular) of El- Demerdash Hospital, affiliated to Ain Shams University. **Sample:** A purposive sample of 90 adult patients from both sexes with venous leg ulcers were recruited for the conduction of this study from the above mentioned setting. **Tools:** (1) Patients' interviewing questionnaire sheet was used to assess the factors affecting quality of life for them: Physical, social, psychological and spiritual. (2) Patients medical record was used to identify past and present history, (3) Wounds assessment sheet. 4) Numerical rating pain scale. **Results :** Mean age of studied patients was 37.5 ± 17.7 . Nearly one third of them were illiterate and with no work. Majority of patients' wounds were with offensive odor and irregular edges. There were significant relations between the following items (Age, education, ulcers duration, income, pain and activities of daily living) and QOL among studied patients. **Conclusion:** There were many factors affecting quality of life for patients with chronic venous leg ulcers (VLUs) including: physical, psychological, social and spiritual. In addition, physical factors represent the highest negative effect on QOL, followed by spiritual factors, then psychological and social factors. In this study, levels of factors with negative effect on QOL were high, followed by moderate, then low. **Recommendations :** Further studies are needed to focus on other factors affecting on quality of life in patients with venous leg ulcers (VLUs). [Howyda A. Mohamed, Ferial Fouad, and Mohamed E. Seif. **Exploring Factors Affecting Quality of Life for Patients with Chronic Venous Leg Ulcers.** *Researcher* 2013;5(3):24-30]. (ISSN: 1553-9865). <http://www.sciencepub.net/researcher>. 4

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1. Introduction

Venous leg ulcers represent a considerable medical and social problem, whereas they increase with age and present major health and economic implications. In addition, they account for about 70-90% of chronic wounds and affect approximately 1% of the world's population, with an annual incidence of 2.5-5.5 millions. They can occur in both men and women (**Jankunas, et al., 2008 and Morley, 2010**). Venous ulcers (VU) are chronic skin and subcutaneous ulcerations that occur on the lower leg around the malleolus. Once a venous ulcer develops, venous hypertension and the ulcer itself must be treated together for optimal healing outcomes. Venous ulcers may develop as a result of any injury to the leg or conditions such as varicose vein, blood clot in the leg, multiple pregnancies, overweight and standing for long periods of time (**Mcphee, et al., 2010**). Patients with venous leg ulcers have persistently high pressure in their leg veins which caused by circulatory impairment. A venous ulcer occurs when venous valves are damaged thus producing venous reflux, pooling and increased venous pressure. The increased pressure causes fluid to leak into surrounding tissues and prevents local tissue oxygenation resulting in tissue necrosis and an open ulcer. Such wounds can be

heavily exudative, malodorous and painful (**Alves & Concicao, 2008 and Timby & Smith, 2008**).

Venous ulcers which occur secondary to chronic venous insufficiency (CVI), are a major cause of non healing lower extremity wounds. Residents are affected by venous ulcers at any given time. Treating a venous ulcer may cost as much as. Venous ulceration is the most common cause of lower limb ulceration. Chronic venous hypertension is thought to be the primary cause of 75% of leg ulcers and may be a significant contributory factor in a further 15%. Ulceration represents the end stage of a spectrum of venous disorders affecting the leg (**Nancy, et al., 2007 and Clarke-Moloney, et al., 2008**). Venous ulcers most commonly found on the lower leg in a triangle above the ankles, and may be associated with oedema of the lower legs, venous eczema, brown pigmentation from haemosiderin, which is derived from red blood cells that have extravasated through the capillary wall, varicose veins, but not invariably, lipodermatosclerosis (the combination of induration, reddish brown pigmentation and inflammation), fibrosing panniculitis of the subcutaneous tissue, or scarring white atro-phy with telangiectasia (atrophie blanche) (**Jones & Fennie, 2007 and Augustin, et al., 2012**).

Quality of life is an important consideration in medical care and refers to the patient's ability to enjoy normal life activities. It affects individual physically, emotionally, socially and psychologically. As well as the individual's role in life and relationships. Quality of life in an individual with venous leg ulcers incorporates such variables as pain and suffering, financial healthcare costs, strain on personal resources and overall impact of the wound on life and activities of daily living (**Hareendran, et al., 2005 and Benbow, 2008**). There are numerous factors affecting quality of life for patients with venous leg ulcers that include, physical Factors : age, level of education, sleeplessness, odour, exudates, frequency and regularity of dressing changes difficulties and personal hygiene, limitation on activity of daily living,, fatigue, sleep disturbance, restricted mobility, pain, wound infections. Social factors: loss of job, social isolation, personal relationships, culture and social support. Psychological factors: suffering, self-esteem, body image and appearance and satisfaction. Spiritual factors: vision for the future and spiritual routine (**Palfreyman, 2008 and Green, 2010**).

Significance of the study:

Venous leg ulcer represent the major serious health problems and the leading causes of hospitalization. The quality of life for venous leg ulcers patients are affected in some way from the time of diagnosis and have many factors that affect patients social, psychological, physical and spiritual status. The concerns that such patients most often express are fear of recurrence, chronic and/or acute pain, physical problems, fatigue, and the resulting potential amputations which present significant costs to the health care system and reduce their quality of life, added to changes in general appearance, depression and sleep disturbance (**Woo, et al., 2009 and Morton & Price, 2012**).

Aim of the Study:

The present study aims to explore the factors affecting quality of life (QOL) for patients with chronic venous leg ulcers (VLUs).

Research question:

What are the factors affecting QOL for patients with chronic venous leg ulcers (VLUs)?

2. Subjects and methods :

Operational definitions :

- **Body mass index (BMI) :** It is a measurement of body weight and height. $BMI = \text{weight kg} / \text{height m}^2$, Normal of BMI = 18.5-25 kg/m² and value more than 25 kg/m² implies over weight.
- **Factors affecting QOL :** Factors that disturb or worsen QOL.

- **Chronic venous insufficiency (CVI) :** Results when the veins in the legs lose the ability to pump venous blood effectively.

Research Design:

A descriptive exploratory research design was used in the conduction of this study.

Setting:

The present study was conducted in the surgical outpatient clinics and inpatients departments (general and vascular) at EL-Demerdash surgical Hospital, affiliated to Ain Shams University.

Subjects:

A purposive sample composed of 90 adult patients, from both sexes with chronic VLUs. They were selected according to sensitive analysis in relation to their diagnosis. The subjects were selected according to the following:

Inclusion Criteria:

- Patients with chronic venous leg ulcers (LUs).
- Patients who agreed to participate in the study.
- Conscious Patients with no co-morbid conditions.
- All patients receiving the same treatment protocol.

Tools of data Collection :

1- Patients' interviewing questionnaire sheet:

A simple Arabic questionnaire was developed by the researchers to identify the factors affecting quality of life for patients with VLUs. It was filled in by the researcher after reviewing by the expertise utilizing the most recent and relevant literatures. It was developed based on QOL measurement tool (SF-36) it was a short form which translated into Arabic after modifications. It was covered 4 health dimensions (physical – psychological – social and spiritual well-being). It was guided by **Kane (2003) and Shukla, et al. (2008)** it included the following parts:

***Socio-demographic data :** It included age, gender, marital status, number of children, level of education, occupation, income, body weight, body length, habits (smoking, nutrition, and intake) and housing status.

* **Factors affecting quality of life:** It included the following:

Physical factors: Pain, discomfort, fatigue, activities of daily living, changes (sleeping, resting, eating, skin.), exercise, personal hygiene, waking, household duties, work, treatment, bandages compressor, wound size, duration, health condition, moving, and environment.

Social factors: Personal relationships, culture, social support, work effects, burden on the family, insufficient income, social isolation, handicap, independent and marital relations changes.

Psychological factors: Suffering, self-esteem, body image& appearance, satisfaction, family reaction, self-confidence, shame, embarrassment, sadness, sorrow, angry, nervous, fear and anxious.

Spiritual factors: Vision for the future, spiritual routine, difficult coping, no goals in life, hopelessness on recovery, always complaint, depressed feeling, god punishing and miss satisfaction feeling.

The negative effect of the previous factors on patients' QOL was determined according to the following classifications:

- Low effect = 1 degree
- Moderate effect = 2 degrees
- High effect = 3 degrees

According to patients' responses, the following classifications were adapted.

Patients' grades were collected and recorded as follows:

- Physical factors 20-60
- Psychological factors 15-45
- Social factors 9-27
- Spiritual factors 9-27

So, the total score was ranged from 53 – 159, and then the total grades were as follows:

- Good QOL (Low – ve effect) = less than 50%.
- Average QOL (Moderate –ve effect) = 50 - less than 75%.
- Poor QOL (High –ve effect) = 75-100%.

2- Patient s medical record:

It was used to obtain patients' diagnosis, past; present and family history, signs and symptoms, complications, investigations, treatment, wound' type, recurrence, duration, amputation in lower limb, chronic diseases.

3- Wound assessment sheet:

- It was used to assess the following items: Wound's site, size, exudates, odour, infection, and pain, surrounding skin, edema, dressing frequency and healing condition. It was adapted from **Naylor & Grey (2006) and Seaman, et al. (2008)**. Wound condition was assessed according to the following categorizations: Good = 3 degrees. Average = 2 degrees. Poor = 1 degree

4 - Numerical rating pain scale:

It was used to determine patient's pain intensity before and after treatment sessions. The scale ranged from 0-10. According to patient's responses, the following classification was adopted: 0 (none), 1-3 (mild), 4-6 (moderate) and 7-10 (severe). It was adapted from **Krebs, et al. (2007) and Park, et al. (2008)**.

Content validity

It was ascertained by a group of experts from General and Vascular Surgery, Medical– Surgical Nursing and Community Health Nursing. Their opinions were elicited regarding to the tools format layout, consistency and scoring system. Contents of the tools were tested regarding to the knowledge accuracy, relevance and competence.

Ethical considerations :

In the planning stage approval was obtained from the directors of the above mentioned setting. All patients were informed about the study and their rights according to medical research ethics that they were free to decide whether or not they would participate in the study. Then a written informed consent was obtained from each patient who agreed to participate in the study.

Pilot study:

A pilot trial was carried out on 10% of the total study sample to test the clarity and practicability of the tools, in addition to subjects and settings. Pilot subjects were later included in the study as there were no radical modifications in the study tools.

Procedure:

- Sampling was started and completed within 6 months
- Purpose of the study was simply explained to patients who agree to participate in the study prior to any data collection.
- The researchers started to collect data from patients on the same day of diagnosis and during the time of Hospitalization, 2days/week at morning and afternoon shifts using the pre-constructed tools.
- The following study tools was filled in and completed by the researchers once :
 - * Questionnaire sheet was designed to identify the Factors affecting quality of life (physical, social, psychological and spiritual) for patients with chronic venous leg ulcers (VLU).
 - * Clinical data sheet was used to obtain patient's medical history.
 - * Wound assessment sheet was completed by the researchers during wound dressing * Pain numerical rating scale was filled in by the researchers.
- Filling in the tools was done according to the patients' understanding and health condition.

Statistical Design:

Data were presented in tables and a chart using numbers, percentages, means and standard deviations, Level of significance was threshold at 0.05

3. Results:

Table (1): Shows characteristics of patients under the study. As noticed mean age of the studied patients was (37.5 ±17.7). Concerning gender, results revealed that female were, representing (57.8%) and male (42.2%). As regards educational level, about one third (33.3%) of them were illiterate/ read & write. Moreover, more than half of them had excessive smoking, insufficient income and BMI = 25.0 kg/m² and more (53.3%, 55.6% and 61.1% respectively).

Table (1): Characteristics of patients under the study (n=90)

Items	NO	%
Age :		
18 - <40 yrs.	25	27.8
40 - <60 yrs.	50	55.5
60 yrs & more.	15	16.7
Mean ± SD = 37.5 ±17.7		
Gender :		
Male	38	42.2
Female	52	57.8
Marital status :		
Single	25	27.8
Married	65	72.2
Educational level :		
University	20	22.2
Primary/secondary	40	44.5
Illiterate/ read & write	30	33.3
BMI :		
Less than 18.5kg/m ²	35	38.9
25.0 kg/m ² & more.	55	61.1
Occupation :		
No work	27	30.0
Sedentary	22	24.4
Retired / Housewife	41	45.6
Income :		
Insufficient	50	55.6
Sufficient	40	44.4
Smoking :		
Current	23	25.6
Excessive	48	53.3
None	19	21.1

Table (2): Percentage distribution of physical factors affecting QOL among studied patients

Items	High	Moderate	Low
	%	%	%
Sleep disorders	63.6	36.0	0.4
Uncomfortable	85.3	13.0	1.7
ADLs (limited)	56.9	38.2	4.9
Appetite changes	52.9	44.4	2.7
Skin changes	60.9	36.9	2.2
Fatigue	68.9	30.0	1.1
Difficulties in physical activities	64.4	34.2	1.4
Lack of knowledge	80.0	17.8	2.2
Health conditions impairment	80.0	12.0	8.0
Presence of pain	85.3	13.3	1.4
Bandages compressor	55.0	40.0	5.0
Duration of ulcers	80.0	17.8	2.2
Wound size	79.1	17.8	3.1
Treatment	48.9	47.6	3.5
Hospitalization	64.4	34.0	1.6
Mean % ± SD	68.6 ± 12.7	28.3 ± 12.6	2.6 ± 1.6

Table (2): Presents distribution of physical factors affecting QOL among studied patients. As noticed, physical factors had a high negative effect on QOL with mean = 68.6 ± 12.7. Meanwhile, low negative effect had a mean of 2.6 ± 1.6.

Table (3): Reveals distribution of social factors affecting QOL among studied patients. As noticed social factors had a high negative effect on QOL with mean = 54.7 ± 20.7. Meanwhile, low negative effect had a mean of 15.1 ± 16.9.

Table (4): Clarifies distribution of psychological factors affecting QOL among studied patients. Results revealed that, psychological factors had a high negative effects on QOL with mean = 55.1 ± 4.9. Meanwhile, low negative effect had a mean of 4.5 ± 2.4.

Table (3): Percentage distribution of social factors affecting QOL among studied patients

Items	High	Moderate	Low
	%	%	%
Burden on the family	57.8	40.0	2.2
Handicap /independent	68.0	26.7	5.3
Marital relations changes	55.2	39.0	5.8
Difficult in traveling	56.0	38.7	5.3
Limited family reaction	10.0	40.0	50.0
loss of work/ change in work nature	64.2	21.7	14.1
Insufficient income	72.1	5.2	22.7
Social isolation	82.3	16.4	1.3
Mean % ± SD	54.7 ± 20.7	30.2 ± 13.2	15.1 ± 16.9

Table (4): Percentage distribution of psychological factors affecting QOL among studied patients

Items	High	Moderate	Low
	%	%	%
Shame and embarrassment	56.4	36.4	7.2
Fearful and anxious	58.7	40.0	1.3
Sadness and sorrow	60.4	35.6	4.0
Low self-esteem / confidence	51.1	42.2	6.7
Angry and nervous	48.9	47.6	3.5
Poor body image	68.0	28.6	3.4
Mean % ± SD	55.1 ± 4.9	40.4 ± 4.8	4.5 ± 2.4

Table (5): Reveals percentage distribution of spiritual factors affecting QOL among studied patients. As noticed spiritual factors had a high negative effects on QOL with mean = 70.1 ± 14.2. Meanwhile, low negative effect had a mean of 10.5 ± 9.0.

Table (6) : Shows wound Characteristics among studied patients. Majority of them had offensive wound odor and irregular wound edges (85.6% and 84.4% respectively). Moreover, mean of wound length/width was (39.0 ± 14.1) and level of peripheral tissue edema (24.0 ± 5.6).

Table (5): Percentage distribution of spiritual factors affecting QOL among studied patients

Items	High	Moderate	Low
	%	%	%
Hopelessness on recovery	47.6	22.2	30.2
No goals in life	82.7	11.1	6.2
Feeling sadness	56.0	40.0	4.0
Always Complaint	80.0	11.1	8.9
Difficult coping	79.9	9.0	11.1
Miss satisfaction feeling	80.7	10.3	9.0
Feeling sorrow and depression	64.0	31.6	4.4
Changes in religious / spiritual routine	70.2	25.8	4.0
Mean % ± SD	70.1±14.2	19.3 ±12.3	10.5 ± 9.0

Table (6): Wound Characteristics among studied patients

Items	No	%
Length / width:		
• Small 5-10 cm	29	32.3
• Medium 11-20 cm	49	54.4
• large ≥20	12	13.3
$\bar{X} \pm SD = 39.0 \pm 14.1$		
Peripheral tissue edema :		
• Mild	20	22.2
• Modreate	28	31.1
• Severe	42	46.7
$\bar{X} \pm SD = 24.0 \pm 5.6$		
Depth:		
• Superfical	21	23.3
• Deep	69	76.7
Odor :		
• Nil	13	14.4
• Offensive	77	85.6
Edges of wound:		
• Normal/ intact	14	15.6
• Irregular	76	84.4
Exudates color and appearance:		
• Pink(epithelialising)	6	6.7
• Red(granulating)	23	25.5
• Yellow(slough)	6	6.7
• Green(slough/infection)	47	52.2
• Black(necrotic)	8	8.9

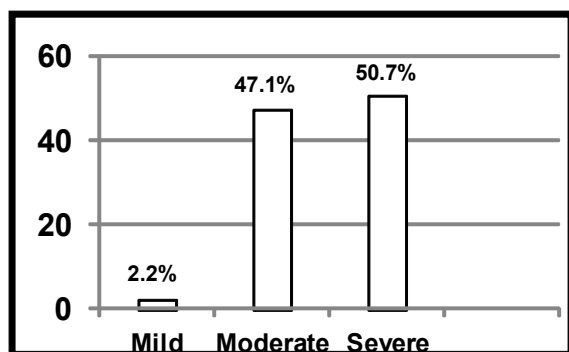


Figure (1): Presentation of pain severity among studied patients

Figure (1) presents pain severity among studied patients. As observed more than half of studied patients (50.7%) had severe pain and minority of them (2.2%) had mild pain, followed by (47.1%) with moderate pain.

Discussion:

Venous leg ulcers (VLUs) lead to major medical, social and economic consequences for patients and their families. Moreover, they suffer from pain, poor sleep, difficulties in bathing, limitation of daily living activities, leakage, impaired mobility, odor, and slippage of the dressing or bandage, decreased QOL, skin changes, infection and bad odor (Smeltzer & Bare, 2006 and Nicol, 2010). The current study aimed to assess the factors affecting quality of life for patients with venous leg ulcers (VLUs).

In the present study, as regards patients' characteristics results revealed that, mean age of them was (37.5 ±17.7).This finding was supported by El-Nahas, et al. (2009). In the same context, results pointed out that females slightly exceeded males to develop venous leg ulcers. This result comes in agreement with Hareendran et al. (2005) who reported that, the incidence of venous leg ulcers among women is higher than men with a ratio of 2:1. According to Skula, et al. (2008), the incidence of venous leg ulcers among men is higher than women. In relation to educational level, about one third of the studied patients were illiterate/ read & write. This finding could be explained that patients were not responding easily to the knowledge given to them. so they were not coping with their disease or its treatment. The previous result was supported by Alves and Concicao (2008) who mentioned that educated patients had more knowledge and better quality of life, while, illiterate patients had poor quality of life.

In the same line, regarding body mass index, majority of the studied patients their body mass index were more than 25kg/m. This result comes in accordance with Jones and Fennie (2007) who found that majority of patients were obese with body mass index more than 27kg. In relation to smoking, more than half of patients had excessive smoking. This result comes in agreement with El-Nahas, et al. (2009) who found that, majority of patients in their study were heavy smoker. As regards work status after the disease occurrence, the present study result revealed that about one third of the studied patients become unemployed. These findings were supported by Benbow (2008) who mentioned that the VLUs lead to, loss of work, limitations that require a reduced work hours or a complete change in the work. Concerning patient's monthly income, the present study results revealed that more than half of the studied patients had Insufficient income. This result

means that income wasn't enough to meet costs of the treatment and family needs, so feeling of inability to perform family role would certainly have had negative effect on the quality of life. This finding was supported by **Green (2010)** who mentioned in their study that less than one third of the study patients became unemployed and less than one fifth change the work.

Considering physical factors and QOL among studied patients. Results revealed that more than half of them had a high negative effect on QOL as regards ADLs : Transferring, movement, walking, carrying and shopping. This finding was supported by **Palfreyman (2008)** who reported that patients with venous leg ulcers had Impaired mobility, difficulties in dressing and personal hygiene. In the same line, results showed that more than two thirds of the studied patients had sleep disorders and were uncomfortable. These results were in consistent with **Shukla, et al.(2008)** who reported that, impact of sleep changes on patients with VLUs was, depression, powerlessness, fatigue, loss of energy and anxiety. As regards wound Characteristics, majority of studied patients had offensive odor and irregular wound edges. These findings were supported by **Woo, et al. (2009)** who reported that more than half of studied patients had offensive odor and edema. In the same context. Concerning pain severity, the study revealed that majority of patients had pain during wound dressing. These findings were supported by **Park, et al. (2008)** who reported that, wound pain is a serious problem for patients' with venous leg ulcers wounds and they suffer from severe pain during and after wound dressing changes. **Seaman, et al. (2008)** stated that there are severe pain among patients in their study affecting on physical domain in QOL. In addition, pain had an impact on physical and psychological domain in QOL.

Food is an important factor which has an effect on wound healing. Venous ulcer patients should take adequate 5 nutrition groups especially high protein content such as meat, egg bean, milk, vegetables & fruits which has high content of vitamin A and C including minerals. According to studies, venous ulcer patients had low levels of protein, vitamin A and C, and various minerals especially Zinc **Morley (2010)** and **Larson-Meyer (2013)**. Therefore, in malnourished patients, deficiencies of vitamins A and C, Zinc, and albumin may minimize the ability to heal. Vitamin C plays a role in collagen synthesis, and vitamin A affects collagen cross-linkage, supports epithelial proliferation and migration and enhances the immune system. Having a high content of the above mentioned nutrients can promote faster and better healing. Patients should strictly take the medicines as prescribed since most of the medicines for venous ulcer patients are antibiotic to

reduce inflammation of the ulcer and oral phlebotropic drug to reduce venous capacitance distensibility, and stasis (**Morton and Price, 2012**).

Concerning social factors and QOL, results showed that social isolation, negative family reaction, marital relations changes, travelling difficulties and work changes had a high negative effect. These findings were supported by **Jankunas, et al.(2008)** who stated that social isolation, reduced visits and poor relationship with family had a high effect on patient's QOL. As regards to the psychological factors and QOL, results indicated that affected self confidence, appearance, difficult coping with wounds had a high negative effect, These findings were supported by **Clarke-Moloney, et al.(2008)** who stated that ulcers result in low self confidence, appearance changes, fearful and anxious, unhappy, shame and embarrassment. In relation to spiritual factors and QOL, the study results revealed that complaints, difficult to cope, unsatisfaction with life and changes in religious/spiritual routine, sorrow, depression and hopelessness on recovery had a high negative effect. These results were in agreement with **Augustin, et al. (2012)** who reported that venous leg ulcers affect negatively on spiritual routine.

Conclusion:

Based on findings of the present study, it can be concluded that:

There were many factors affecting quality of life for patients with chronic venous leg ulcers (VLUs) including: physical, psychological, social and spiritual. In addition, physical factors represent the highest negative effect on QOL, followed by spiritual factors, then psychological and social factors. In this study, **levels** of factors with negative effect on QOL were high, followed by moderate, and then low.

Recommendations:

- Educational programs should be held periodically for such groups of patients.
- Patients are in need to a simplified illustrated and comprehensive Arabic booklet including information about venous leg ulcers and its therapeutic regimen.
- Longitudinal studies are needed for such groups of patients.
- Further studies are needed to focus on studying other factors affecting on quality of life in patients with venous leg ulcers.

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