

# Care and Quality of Life Evaluation of People with Venous Ulcers in Primary Health Care

ORIGINAL

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## Abstract

**Background:** Identifying the sociodemographic characteristics and care of people with UV as their place of care and housing is a priority to allow us to plan and develop a holistic and individualized care, increasing the chances of adherence and positive results in the quality of life.

**Objective:** Care and quality of life evaluation of people with venous ulcers treated with the primary health care, according to the health district.

**Methods:** This is a cross-sectional study with 101 people in 42 mix and family health units, in Natal, Rio Grande do Norte, Brazil. The data were collected through an instrument to characterize the sociodemographic and service issues, and the Medical Outcomes Short-Form Health Survey (SF-36). Statistical analysis used descriptive statistics, Fisher's Exact test, Chi-Square test, and Mann-Whitney test, with p-value < 0.05.

**Results:** The study population was composed mostly of women, older, married or in a stable relationship, with low income and education level and prevalence of individuals with inadequate care. About the quality of life, there was a statistically significant difference for the social function domain comparing the locations ( $p = 0.035$ ).

**Conclusion:** Knowing profile differences that impact the quality of life of people with a venous ulcer in different locations can support health care according to specific needs.

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## Introduction

Venous ulcers (VU) is a major public health problem because it impacts multidimensional and psychosocially the affected population [1, 2]. It also usually requires long and complex therapy, causing pain and disability that consequently reflect in daily life activities, in work performance and it compromises the quality of life (QOL) [1, 2, 3].

The repercussions of these changes require a skilled and resolute assistance to restore health and prevent relapses with consequent improvement of this construct [1, 4, 5]. Its evaluation allows checking the socioeconomic, psychological and physical impact of the injury, highlighting the need for investment in optimizing the clinical characteristics through a qualified, multidisciplinary and continuous care that favors the various dimensions of QOL [4, 5], focused on the human and not only in healing the wound.

In the context of the multidisciplinary team, there is the nursing, responsible for a comprehensive and individualized care, through the evaluation of the individual and of the injury, the indication and execution of healing, referrals and educational activities aimed at promoting health [1]. It is up to nurses to provide efficient assistance to this population, in addition to supervising the actions of other members of the nursing team.

A study of nurses working in primary health care (PHC) of Minas Gerais (Brazil) [6], the need for continuous care, self-care and treatment protocols was identified to reduce the recurrence of VU and therapeutic inefficiency. Also, it was demonstrated that the proper guidance improves the effectiveness of self-care and adherence to treatment, reducing injury recurrence [6].

Research in Portugal aimed to verify the QOL perception of people with VU [7] by identifying intermediate values by applying the Cardiff Scheme for injuries. Among the most affected dimensions, there was the welfare and people living in urban areas with the higher final score and in three dimen-

sions: physical symptoms, daily life, and social life. [7] Comparative study that evaluated people with VU living in Brazil and Portugal found better QOL scores between those admitted to the health services of Évora, Portugal, showing that the geographic location of the individual and consequently the social services and health conditions of the locality influence many aspects of life and health. [8]

Therefore, identifying the sociodemographic and care characteristics of people with VU, according to their place of care and housing, allowed planning and developing a holistic and individualized care, increasing the chances of adherence and positive results. In this sense, considering the heterogeneity of this population and health care, this research aimed to evaluate care and quality of life of people with venous ulcers treated with the primary health care, according to health districts.

## Method

This is a cross-sectional, descriptive study, developed in the PHC of 42 health units. There were 37 Family Health Units (FHU) and five mixed units of Natal, Rio Grande do Norte (RN), Brazil. The service organization and planning of health actions in the municipality were according to the Health Districts (HD): North I, North II, South, East, and West [9]. The geographical division established by the Potengi River, dividing the districts, also guided the segregation of the population for this research into two groups: North I and II (Group I), East, West and South (Group II). Moreover, socioeconomic differences between the groups were also observed.

The population of the study was people with VU assisted in these units, totaling 101 individuals. Patients with over 18 years old with active VU at the time of data collection and verbal communication skills were included in the study. Those with arterial or mixed origin ulcer and residents in non-assisted areas by nursing or at risk of violence were excluded.

Data collection used two instruments: a structured form of interview and collection of bio-physiological measures, elaborated based on clinical guidelines [10]; and the Medical Outcomes Short-Form Health Survey (SF-36) [11], which evaluates the quality of life related to health (HRQOL).

The SF-36 is a multidimensional questionnaire of 36 items, divided into eight domains (functional aspect, physical aspects, pain, general health, vitality, social function, emotional aspects, mental health) and two dimensions (physical health and mental health). The scale ranges from zero to 100 where the higher the score, the better the HRQOL [11].

Data collection was conducted from February to September 2014, by nurses and nursing students, trained in service centers or the homes of participants.

Data were organized in tables in Microsoft Excel® and exported to statistical software SPSS, version 20.0, doing the descriptive and inferential analysis. Sociodemographic, health and care characteristics were distributed according to the region of origin of the subjects in Group I and II.

For statistical analysis, the chi-square test and Fisher exact tests were used to assess the association between sociodemographic variables in both groups; care conditions and individual care evaluation of each group, and among every aspect of care conditions and individual care evaluation and SF-36 domains and dimensions. The comparison of the scale between the groups occurred through the Mann-Whitney test. Statistically significant p values <0.05 were considered.

The care quality rating was calculated by the variables (factors) showed as care conditions, so the value of one (1) was for each factor considered positive, and zero (0) for each negative factor. Thus, the positive final score is the sum of these factors, and the negative score is the subtraction of the negatives of one (1) (inadequate quality care = 1 - Σ positive factors). Up to six positive factors found, the evaluation of health care was considered inadequa-

te and, when the number of positive factors ranged from seven to 10, it was classified as adequate due presenting score above 70%.

As positive factors (variables) those who positively influence the health of people with VU were included as follows: adequacy of the material used for healing [6]; training of the responsible person for healing [6]; use of compressive therapy [1, 12]; presence of guidance on compression therapy [12], lifting the lower limbs (LL) [12], and regular physical exercise [13]; performance of Doppler examination [14]; annual frequency of consultations with angiologist (four or more) [3]; presence of reference and counter-reference system [10]; and record of the clinical findings in medical records [4]. The professional, family or patient was considered as the person who performs the dressing.

This research followed the Resolution 466/12 [15] and was approved by the Ethics in Research of the Federal University of Rio Grande do Norte Committee, Certificate Presentation of Findings Ethics number 07556312.0.0000.5537. The participants who agreed to participate signed the consent form to ensure secrecy of their identification.

## Results

Regarding the HDs, the sample was 60 (59.4%) in Group I and 41 (40.6%) in Group II. As for socio-demographic characteristics shown in **Table 1**, 67 (66.3%) were women, 61 (61.4%) were aged greater or equal to 60, 64 (63.4%) were married/stable relationship, 86 (85.1%) with elementary school, 76

**Table 1.** Socio-demographic characterization of people with venous ulcers treated with the primary health care..

Sociodemographic Characterization	Health Districts		Total	p value#
	Group I	Group II		
	n(%)	n(%)	n(%)	
Gender				
Male	21(20.8)	28(27.7)	34(33.7)	0.731
Female	39(38.6)	13(12.9)	67(66.3)	

Sociodemographic Characterization	Health Districts		Total	p value <sup>#</sup>
	Group I	Group II		
	n(%)	n(%)	n(%)	
Age group				
Up to 59	23(22.8)	25(24.8)	39(38.6)	0.944
≥ 60	37(36.6)	16(15.8)	62(61.4)	
Marital status				
Married/Stable relationship	42(41.6)	22(21.8)	64(63.4)	0.094
Single/Widow/Divorced	18(17.8)	19(18.8)	37(36.6)	
Education				
High School and Higher Education	09(8.9)	35(34.7)	15(14.9)	0.960
Elementary School	51(50.5)	06(5.9)	86(85.1)	
Profession/Occupation				
Present	14(13.9)	30(29.7)	25(24.8)	0.689
Absent	46(45.5)	11(10.9)	76(75.2)	
Income per capita				
> 01 MW*	12(11.9)	25(24.8)	28(27.7)	0.036
< 01 MW	48(47.5)	16(15.8)	73(72.3)	
Total	60(59.4)	41(40.6)	101(100.0)	

\*MW: minimum wage (R\$724.00 or USD 241.10), #: Chi-square

(75.2%) unemployed and 91 (72.3%) had less than one minimum wage per capita income. Only the income had a significant difference between the groups ( $p=0.036$ ), and 47.5% of the subjects with up to one minimum wage per capita income are in Group I.

The association between the care evaluation and care characteristics to the person with VU, according to the health districts, was presented in **Table 2**. Statistically, significant differences in most variables and groups were observed, except for guidance for lower limb lifting and regular physical exercise and medical records for both groups. The variables relating to the adequacy of materials, training of the responsible person for healing and reference and counter-reference did not have significant associations in Group II.

Regarding the total score, the care evaluation was adequate for 23 (22.8%) subjects in the Group I and 15 individuals (36.7%) of Group II; and inadequate for 37 subjects (36.7%) of Group I and 26 indivi-

**Table 2.** Association between the care evaluation and the care characteristics categorized according to location.

Care	Category	Group I			Group II		
		Care Evaluation			Care Evaluation		
		I*	A**	p-value***	I*	A**	p-value***
		n (%)	n (%)		n (%)	n (%)	
Materials used	Inadequate	24 (40.0)	0.0 (0.0)	0.002	12 (29.3)	0.0 (0.0)	0.156
	Adequate	24 (40.0)	12 (20.0)		23 (56.1)	6,0 (14.6)	
Training of the responsible person for healing	Absent	37 (61.7)	06 (10.0)	0.063#	16 (39.0)	01 (2.4)	0.373
	Present	11 (18.3)	06 (10.0)		19 (46.3)	05 (12.2)	
annual frequency of consultations with angiologist	< 4	46 (76.7)	07 (11.7)	0.002	35 (85.4)	06 (14.6)	<0.001#
	≥ 4	02 (3.3)	05 (8.3)		35 (85.4)	06 (14.6)	
Doppler examination	Absent	38 (63.3)	04 (6.7)	0.004	28 (68.3)	01 (2.4)	0.005
	Present	10 (16.7)	08 (13.3)		07 (17.1)	05 (12.2)	
Guidance on compression therapy	Absent	28 (46.7)	0.0 (0.0)	<0.001	25 (61.0)	01 (2.4)	0.018
	Present	20 (33.3)	12 (20.0)		10 (24.4)	05 (12.2)	
Guidance of lifting the lower limbs (LL)	Absent	04 (6.7)	00 (0.0)	0.574	05 (12.2)	00 (0.0)	1.000
	Present	44 (73.3)	12 (20.0)		30 (73.2)	06 (14.6)	
Guidance for regular physical exercise	Absent	27 (45.0)	04 (6.7)	0.204	24 (58.5)	04 (9.8)	1.000
	Present	21 (35.0)	08 (13.3)		11 (26.8)	02 (4.9)	

Care	Category	Group I			Group II		
		Care Evaluation			Care Evaluation		
		I*	A**	p-value***	I*	A**	p-value***
		n (%)	n (%)		n (%)	n (%)	
Reference and counter-reference	Absent	38 (63.3)	04 (6.7)	0.004	28 (68.3)	03 (7.3)	0.143
	Present	10 (16.7)	08 (13.3)		07 (17.1)	03 (7.3)	
Record in the medical records	Absent	14 (23.3)	01 (1.7)	0.262	13 (31.7)	01 (2.4)	0.645
	Present	34 (56.7)	11 (18.3)		22 (53.7)	05 (12.2)	
Compressive therapy	No	47 (78.3)	08 (13.3)	0.004	32 (78.0)	01 (2.4)	<0.001
	Yes	01 (1.7)	04 (6.7)		03 (7.3)	05 (12.2)	

\*: Inadequate (I), \*\*: Adequate (A), \*\*\*: Fisher's exact test (association of data and frequency <5), #: Chi-Square Test, ##: Lower Limbs (LL)

duals (25.7%) in Group II. There was no statistically significant difference ( $p=1.000$ , chi-square test).

**Table 3** shows the average and standard deviations according to SF-36 domains and dimension. The areas with the highest averages, respectively for Group I and II were mental health (63.3 and 67.0) and vitality (64.3 and 59.6) and mental health dimension obtained the highest average for both groups. There was a statistically significant difference only for the social function domain ( $p=0.035$ ).

**Table 3.** Average of distribution, standard deviation and the value of the SF-36 obtained as the health districts.

SF-36	Health Districts		p-value**
	Group I	Group II	
	Average (SD*)	Average (SD*)	
Domains			
Mental health	63.3 (27.8)	67.0 (25.3)	0.603
Vitality	64.3 (29.3)	59.6 (23.5)	0.197
Emotional aspects	52.2 (47.3)	48.0 (44.8)	0.644
General health	48.4 (21.3)	49.7 (22.9)	0.683
Social function	41.8 (37.7)	56.2 (33.0)	0.035
Pain	41.7 (30.5)	47.5 (30.3)	0.311
Functional aspect	31.6 (28.6)	38.9 (27.9)	0.157
Physical aspect	11.7 (30.0)	16.5 (31.4)	0.196
Dimensions			
Mental health	54.0 (24.4)	56.1 (22.0)	0.761
Physical health	39.5 (19.9)	42.2 (19.2)	0.504

\*SD: standard deviation, \*\*: Mann-Whitney Test

## Discussion

The respondents were mostly female with age greater or equal to 60 years old (61.4%), similar to other studies [5, 16]. The elderly population is commonly affected by VU [17,18], with increased probability of development after 65 years old due to changes in vessels and natural aging tissues associated with chronic diseases [19].

The income was the only sociodemographic variable with a significant difference between the groups. The grouping of districts was based on socioeconomic conditions, since the Group I has a population of scarce financial and social resources, so there is a tendency to contribute to inadequate results when compared to Group II. According to the Brazilian Institute of Geography and Statistics (IBGE), Natal is one of the Brazilian cities with the highest income inequality and based on this issue; it is classified in ninth position among the Brazilian capitals [20].

The low level of education and lack of employment are common sociodemographic characteristics in people with VU, and they were also found in this study. These factors may reflect lifestyle habits that favor the emergence of injury or inadequate access to health services, influencing the adherence to treatment [3] and, consequently, influencing the QOL.

Regarding care characteristics, most materials used in the healing of the subjects in this study were

considered adequate, explained by the existence of a protocol for treatment of wounds in Natal City Hall/RN [21]. However, it is noteworthy that in the individuals of Group I with greater social vulnerability, those who received inadequate materials had care classified as poor ( $p=0.002$ ). In a research in Goiana, the results also demonstrated the inappropriate use of covers for healing [1].

The option for the materials used for healing depends on several factors, such as the training of the health staff, medical imposition, the presence of protocols and guidelines, and economic factors [1]. This situation can be seen in the results for the training of the person responsible for the healing, which in Group I, most of them were not previously prepared, with statistically significant differences for prevalence of inadequate care, which can be aggravated by the socio-economic context in which these people they are inserted, represented by the deficiency of access to social and financial resources.

In both groups, most participants who were not subjected to compressive therapy had considered inadequate care. Regarding the therapeutic choices, compressive therapy is a better alternative for the treatment, for example, the Unna's Boot, bandages and prevention with compressive stockings [1]. The purpose of the compressive therapy is to improve venous return and, consequently, edema, providing scarring and clinical compensation [1].

In a systematic review evaluating the most effective method to improve venous return and the best topical treatment of ulcers, it was shown that compressive therapy increases the healing rate, and the different topical therapy options should be associated with compressive therapy [22].

Although people did not use compressive therapy, the Group I were told to use it, while in Group II, many had not received guidance. It should be noted that due to the tropical climate of the study area, many patients refused to use it because of the discomfort caused on days

with higher temperature despite the indication by the professional. However, for both groups, the absence of guidelines showed a significant difference in the inadequate care, which indicates the importance of this approach to improving care for people with VU, with impact on well-being. In an international systematic review, the results indicated that all treatments have a positive effect on QOL, and the type of bandage did not seem to influence [23].

Participants in both groups were instructed to maintain the elevation of the lower limbs, which seems to set up a common knowledge and widespread among people with venous insufficiency. On the other hand, the guidance of regular physical exercise was absent.

Health education is one of the nurse's roles and influences QOL by providing knowledge to the maintenance, restoration, health promotion and disease prevention. For people with VU, guidance on compressive therapy, lower limb lifting, and physical exercise are important to improve venous return and reduce the clinical signs and symptoms of venous insufficiency, also contributing to wound healing, promoting well-being.

The guidance provided by the professional staff is essential to the continuity and adherence to treatment. A Belgian research to explore the knowledge of people with VU about the disease stressed the need for clarification regarding their condition to promote understanding about the treatment and recognition of the importance of self-care. [24]

As opposed to patient records in both groups, the reference, and counter-reference system was absent. However, this variable was not significantly associated with inadequate care in Group I, referring to the most economical and social vulnerable HDs. The malfunction of this system causes the lack of coordination among the various health care levels, undermining the effectiveness and continuity of care.

This statement is reinforced by two other findings in both groups: absence of Doppler examination and a low number of annual consultations with angiologist, variables also significantly associated with inadequate care. This failure in the continuity of treatment of this population was a reality also found in research conducted in Goiás [1].

In addition to the factors mentioned above, it is important that other bodies work from the perspective of holistic care, such as QOL for a care considered effective. A comprehensive approach to health care for people with VU is essential for good results [25], as the improvement of this construct. Among the recommendations for this approach, a systematic review [26] points out the effective assessment and treatment of pain; the adoption of individualized strategies for the management of exudate and odor; the provision of educational material; and a multi-professional assistance providing effective care at all levels of complexity.

All the factors evaluated in this study can affect QOL. Thus, all domains and dimensions, except for the vitality and emotional aspect, were more committed in Group I, which is the least favored population regarding the distribution of income and access to services.

Overall, the average obtained with the implementation of the SF-36 were compromised. The clinical changes resulting from venous insufficiency and VU impact functional capacity of the individual, limiting their activities, including self-care [1, 2, 3]. In this research, the physical aspect domain had the lowest average, followed by the functional aspect, in both groups, with lower scores for the subjects in Group I. Similarly, the dimension of the physical health showed lower average than the mental health.

The vitality domain was more affected by Group II. It corresponds to tranquility, energy and mood to perform daily tasks [27], and in this sense, individuals of this group were less willing to do their activities, probably because of the limitations resulting from the injury.

An Australian clinical trial that evaluated the influence of different compressive therapies on QOL showed greater impairment of physical health dimension to the mental health of the participants. [12] Another study conducted in Salvador, Brazil, also for chronic injuries affecting individuals, found as a nursing diagnosis, impaired physical mobility to self-care and hygiene and activities of daily life and work, due to injury [28]. Thus, many of them end up giving up their activities, including those who like to run, due to VU [29]. In a qualitative study, people with chronic venous insufficiency perceived QOL as the ability to perform daily activities. [30]

The presence of VU makes the daily activities to be complex, while increases dependency and discourages autonomy, with impact on their social relationships [26, 31], since physical changes often lead to social isolation and removal of labor activities [1] identified in this research by the prevalence of participants without profession/occupation.

The Group I was again highlighted with higher frequency of individuals without occupation and with the worst averages for social function, single domain with a significant association between the groups, which may represent the sociodemographic differences between the housing places that possibly offer multiple social interactions and access to services, which are limited to Group I. The SF-36 assesses how health, physical or emotional problems affect social relationships with the family, friends, and communities [27]. Thus, it is noted that for the subjects inherent in Group I, there were more difficulties in social relationships, which favors social isolation.

Besides the undeniable socioeconomic impact, the lack of a labor activity makes them more likely individuals direct their attention to the pain and live it with greater intensity [18], which may explain the low averages in the pain domain. This is a common symptom caused by chronic injury and one of the clinical manifestations of venous insufficiency

[1] that has a negative impact on QOL, affecting sleep, mobility and emotional though being little explored in research [18, 25].

The World Health Organization states that the presence of pain can produce negative results on wound healing, with consequent influence on QOL [32]. A good and effective relationship between the health professional and the patient and educational actions to control and pain relief are strategies that possibly improve clinical outcomes [25].

The impact of wound mobility and functional capacity added to the aesthetic changes influence negatively on social interactions, and possible isolation [34]. Such changes may affect mood [27], and from this perspective, the emotional aspect domain proved to be committed in Group II, which shows the influence of emotional health in regular activities. [27]

Living with a chronic wound leads to psychological problems such as anxiety and it negatively affects mental health, which added to the physical impacts result in a worse general health status [29]. This can be seen in the results of this investigation, especially in Group I, consisting of people living with higher socioeconomic vulnerability. On the other hand, mental health (dimension and domain) had an average above 50 points, and the domain was greater for subjects in Group I, with significant differences indicating better QOL.

Therefore, care for people with VU represent a challenge for the multidisciplinary team, since they impact on various aspects of life [31], and strongly associated with the region of residence determine, in a way, access to structures and general services. Moreover, despite being a local study, the results can be considered for larger populations living in scenarios and similar socioeconomic realities, since the population evaluated presented a demographic profile commonly found among people with VU, with statistical significance for income less than a minimum wage per capita.

This study contributes to the comparison of care

and quality of life of people with VU, according to the place where they are assisted and may be the basis for further studies with a more scientific evidence to deepen work the issue of territoriality.

## Conclusion

The results show that low-income and socially vulnerable people with VU according to the area of housing and location of health services can affect QOL. The multidisciplinary team, especially nurses, need to promote a comprehensive care to reduce sociodemographic health differences of individuals, with emphasis on the training of this professional and the guidance to patients and their families and caregivers. The cross-sectional approach is a limitation of the study. For future research, it is suggested longitudinal cut and studies of major scientific evidence as an intervention to improve QOL over time.

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