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Abstract

The aim of the study was to test Turkish validity and reliability of Venous Insufficiency Epidemiological and Economic Study-Quality of Life/Symptoms (VEINES-QoL/Sym) in patients with chronic venous insufficiency (CVI). A total of 118 patients with CVI hospitalized in 3 different hospitals were enrolled in this study. VEINES-QoL/Sym, translated to Turkish with a standard methodology, was applied to the patients and was evaluated for acceptability, reliability, validity, and responsiveness. Cronbach α (including if item deleted) values were used for the reliability analysis. Construct and criterion validity approaches were used for validity analysis. Cronbach α values are .86 for the VEINES-QOL and .81 for the VEINES-Sym. No problematic items were observed for the scale. The VEINES-QoL/Sym was significantly sensitive to clinical, etiology, anatomy, and pathophysiology (CEAP) classification, indicating good criterion validity. Significant correlation was found between scores of SF-36 and VEINES-QoL ($r = .43-.66$). Turkish version of the VEINES-QOL/Sym was found reliable and valid for Turkish patients with CVI.

Keywords

venous insufficiency, validity, reliability, quality of life

Introduction

Chronic venous insufficiency (CVI) is a chronic disease seen with the symptoms of varicose veins, telangiectasia, cramps, pain, swelling, pruritus, and sense of heaviness in lower extremities.¹ The incidence of CVI is reported in Western countries as 25% to 33% in women,² 10% to 20% in men, and 20% to 25% in women, 10% to 15% in men from Turkey.³ Although CVI is common in general population, its incidence increases as the age advances and as a result the quality of life (QoL) is affected negatively. The cost of the disease varies with the presentation of symptoms and the effects on the QoL. Chronic venous insufficiency management is done by symptoms and findings within the framework of basic clinical evaluation and using various diagnostic methods. The only handicap in clinical evaluation is ignorance of the effects of it on QoL. Results declared by the patients associated with the disease play a key role in the evaluation of the treatment and care studies. General evaluation can be done by the general quality-of-life scales but these evaluations are insufficient for conditions specific for CVI. Quality-of-life scales prepared specifically for the disease are more effective in the evaluation of the treatment and care effects as well as in determination of the effects associated with the disease.^{4,5} SF-36 quality-of-life scale is commonly used in the assessment of CVI at different levels.⁶⁻⁸ In international

studies Nottingham Health Profile and European Quality of Life-EuroQoL have been used in the evaluation of the venous ulcers. Although these general measurement means are proven scales in terms of their psychometric features (validity, reliability, and answerability) scientifically, it does not give all specific effects of CVI and only a general evaluation can be done.⁶ In addition to this, general scales were used in prior studies and only the effects of the varicose veins and leg ulcers on the QoL were evaluated.⁹ All degrees of CVI and the effects of the disease on the QoL have not been discussed adequately.

Aberdeen Varicose Venous Questionnaire was developed by Garrat et al.^{10,11} Launois et al have done the validity of Quality of Life Questionnaire in Chronic Lower Limb Venous Insufficiency (CIVIQ) scale,¹² and The Venous Leg Ulcer

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Quality of Life (VLU-QoL) Questionnaire was developed by Hareendran et al.⁹

The assessment of QoL and the specifics of the disease are preferential features of disease scales. Because of this, to evaluate both the symptoms of the disease and the effects on the QoL, at least 3 scales or indexes must be used. The use of many scales leads to time loss and reduces the reliability of the obtained data. Besides, there are reports about inadequate determination of some disease-specific symptoms and measurement of QoL. As a result, a new scale is needed in order to discuss the symptoms of CVI further and to measure the effects of it on the QoL. In Turkey, only clinical, etiology, anatomy, and pathophysiology (CEAP) classification system is used for CVI.³ CEAP classification evaluates the patients with CVI in terms of clinical, etiological, anatomical, and pathological variations.^{3,13} There is no tool to measure the QoL in patients who have symptoms due to CVI.

In order to meet this requirement, our cross-sectional study is planned to determine the Turkish reliability, validity, and answerability of the Quality of life Scale in Chronic Venous Insufficiency (its original name is Venous Insufficiency Epidemiological and Economic Study-Quality of life/Symptoms [VEINES-QoL/Sym]) in patients with CVI. So the aim of this study is to develop the Turkish version of the already developed instrument VEINES into Turkish language and after that to:

1. probe the equivalence of the Turkish version of the VEINES-QoL/Sym with the original version; and
2. explore whether the Turkish version of the VEINES-QoL/Sym is a reliable and valid version to be used for the Turkish patients with venous insufficiency and for various clinical conditions and interventions.

Materials and Methods

This study followed this widely accepted Standard cross-cultural validation methodology published elsewhere.¹⁴ This methodology briefly consisted of a number of subsequent steps such as:

1. forward translations (FW),
2. reconciliation of the FWs,
3. backward translation (BT),
4. comparison of the BT and the original version,
5. cognitive debriefing of the target (Turkish) language version,
6. filed trial of the target language version of the instrument, and
7. analysis of the field trial data:
 - a. descriptive measures
 - b. reliability analyses (item analysis, internal consistency)
 - c. validity analyses
 - i. criterion validity
 - ii. construct validity

1. convergent
2. known groups comparisons

The patients with CVI who have applied to the cardiovascular surgery units of 3 different hospitals between January 12 and February 12, 2010, formed the sample of this research (N = 118). SF-36 Quality of Life Scale and Turkish version of VEINES-QoL/Sym (see Appendix A) which was developed with standard translation methodology (FW, BT, forming reconciliation/consensus versions) were administered concurrently to the patients. In order to be used for the known groups and criterion validity testing, the demographic features of the patients and their CVI grades were also included in the “patient information form.”

Clinical, Etiology, Anatomy, and Pathophysiology Classification

There are 4 dimensions of CEAP classification: clinical, etiology, anatomy, and pathophysiology. Clinical components (C) of the CEAP classification categorized patients based on 7 grades of clinical signs: grade 0, no visible signs of venous disease; grade 1, telangiectasias or reticular veins; grade 2, varicose veins; grade 3, edema; grade 4, skin changes due to CVI; grade 5, skin changes with healed ulceration; and grade 6, skin changes with active ulceration.

Four categories are included in etiology (EC, P, S, and N) classification: congenital, primary, secondary, and none. While arteriovenous malformations represent an obvious congenital (C) etiology, it may also include uncommon conditions such as hereditary absence of venous valves. Secondary (S) designates any known cause of the venous abnormality (thrombosis, trauma, and prior surgical alteration). Primary (P) essentially refers to all others. Usually this indicates primary valvular reflux. A subscript designation of (N) is also appropriate for no evident etiology of CVI.

There are 2 options in anatomy (AS, P, D, and N) category—basic and advanced. Basic CEAP assigns a limb to one or more of the 3 commonly recognized anatomic venous systems in the limb—superficial, perforating, and deep veins. Pathophysiology (PR, O, R-O, and N) occurred from 2 major categories—reflux (R) and obstruction (O). They may occur alone or in combination (R-O).¹³

This study used clinical classification for clinical evaluation of patients with CVI.

The approval for this study was given by the Ethics Committee of the Celal Bayar University, Manisa, Turkey. Patients have been enrolled in the study after obtaining their informed consents.

Venous Insufficiency Epidemiological and Economic Study-Quality of life/Symptoms (VEINES-QoL/Sym)

The 26 items and 2 dimensions of VEINES-QoL/Sym measure the impact of CVI on symptoms and QoL from the patient's perspective. Of the 21 items, the first 10 cover symptoms

(fullness of lower extremities, pain, swelling, night cramps, heat/burning sensation, restless legs, itching, tingling/stinging sensation, and throbbing) in 5 different frequencies (always, a few times a week, once a week, once in a few weeks, and never). Limitations in daily activities (9 items), time of day of greatest intensity (1 item), and change over the past year (1 item), and psychological impact (5 items) are covered by the QOL scale with 2- to 7-point response scales of intensity, frequency, or agreement. Three items (Q3, Q6, Q7) are reversed scored so that for both the VEINES-QOL and VEINES-Sym scales, high scores indicate better outcomes. The time frame for questions about symptoms, daily limitations, and psychological impact is for the past 4 weeks. The VEINES-QOL/Sym is a self-rated questionnaire that is designed for self-completion.^{4,5}

“International Quality of Life Assessment Protocol for Linguistic Validation of QOL Questionnaires” was used for the method of this study.¹⁴ According to this protocol, translation of the scale to Turkish and back to English (FW-BT), cognitive debriefing (conceptual inquiry), application of the scale to the patients, and reliability and validity analysis were done. Permission was taken from Donna Lamping et al who developed VEINES-QoL/Sym scale to adapt it to Turkish.⁴

VEINES-QoL/Sym was translated to Turkish by 2 researchers. Then its BT (to English) was made by someone whose mother tongue languages were English and Turkish for control, and the translated text was compared by a neutral person and no problematic item was reported.

Cognitive Debriefing

All items of the scale were assessed in terms of spoken Turkish (comprehensibility of the scale items, whether they were clear, whether there were any questions that made the patient upset, whether there were any word or expression that was proposed by the patient, comprehensibility of the answering questions) using face-to-face interview method with 5 patients for the Turkish version of the scale. There was no word or expression that was proposed to be changed at the end of the interview.

Statistical Analysis

Descriptive properties (acceptability) of the VEINES-QoL/Sym are presented as mean SD values and some distribution measures such as floor and ceiling effects, skewness, and kurtosis (Table 3).

Reliability Analysis

Cronbach α coefficients were calculated for each of the subdimensions of the scale in the reliability analysis. Cronbach α coefficients show the internal consistency between the items of the scale. For both of the subdimensions of the scale, α values were calculated separately when each of the items were removed one by one.

Validity Analysis

Items of the scale representing CVI was determined with literature, specialist's, and patient's opinion (content validity).

Construct and criterion (measure of value) validity approaches were used in the validity analysis. Correlations between subdimensions (VEINES-QoL and VEINES-Sym) of the scale and also between the related SF-36 subdimensions and the VEINES-QoL/Sym were evaluated for testing the convergent (a type of construct validity) validity of the VEINES-QoL/Sym. The independent variables (age, gender, body mass index [BMI]) of the patients were evaluated for using known groups validity testing.

CEAP-CVI classification system and some clinical complaints were used to test the criterion validity and sensitivity analysis of the VEINES-QoL/Sym. Correlation, Student *t* test, Kruskal-Wallis analysis of variance (ANOVA) and Bonferroni post hoc comparisons were used in the statistical analysis.¹⁵

Results

In all, 55.1% of the patients were in the 25 to 44 age groups and the mean age was 44.37 ± 12.71 ; 74.6% of the patients were women, 42.4% were graduates of the primary school, 36.4% were housewives, and 39.0% were in overweight group according to BMI (Table 1). The complaints of the patients due to CVI were, respectively, pain in 73.7%, edema in 43.2%, cramp in 41.5%, discomfort because of its appearance in 33.9%, fullness in legs in 26.3%, and other complaints (pruritus, etc) in 7.6%.

The grades of the patients according to the CEAP classification were first degree in 21.2%, second in 43.2%, third in 22.0%, fourth in 12.7%, and fifth in 0.8%.

When VEINES-QoL distribution indicators were examined, the mean was 50.0 ± 10.0 , median 49.6, skewness -0.02 , stickiness (kurtosis) -0.66 , and floor-ceiling 26.82 to 68.66. The distribution indicators of VEINES-Sym were a mean of 50.0 ± 10.0 , median 48.8, skewness 0.14, stickiness 0.52, and floor-ceiling 27.29 to 73.80 (Table 2).

Reliability

Cronbach α coefficients were .86 for VEINES-QoL and .81 for VEINES-Sym in the analysis of scale reliability. The range of the “if item-deleted α values” was .860 to .870 for VEINES-Sym and .860 to .875 for VEINES-QoL. All of the α values were found to be smaller than the overall α value. So, no problematic item was identified based on the if item-deleted α values (Table 3).

Validity

It was determined that VEINES-QoL/Sym scores showed linear trend according to CEAP classification used for criterion validity, and there was a significant difference between the means of the scale according to CEAP (Table 4).

Significant correlation was found between scores of SF-36 and VEINES-QoL ($r = .43-.66$). There was low correlation

Table 1. Descriptive Characteristics of the Patients With CVI

Sociodemographic Characteristics	n	%
Age		
25-44 years	65	55.1
45-64 years	43	36.4
65-84 years	10	8.5
(mean of age = 44.37 ± 12.71)		
Gender		
Female	88	74.6
Male	30	25.4
Educational status		
Illiterate	15	12.7
Primary–secondary school	50	42.4
High school	24	20.3
University	29	24.6
Occupation		
White collar (officer)	32	27.1
Blue collar (worker)	14	11.9
Retired	13	11.0
Housewife	43	36.4
Other	16	13.6
BMI		
18.5-24.9 (normal)	40	33.9
25.0-29.9 (overweight)	46	39.0
30.0 and over (obese)	32	27.1
Complaints of CVI		
Pain	87	73.7
Swelling	51	43.2
Cramp	49	41.5
Appearance	40	33.9
Sense of fullness	31	26.3
Other (itching, etc)	9	7.6
Grade of CVI^a		
Grade 1	25	21.2
Grade 2	51	43.2
Grade 3	26	22.0
Grade 4	15	12.7
Grade 5	1	0.8

Abbreviations: BMI, body mass index; CEAP, clinical, etiology, anatomy, and pathophysiology; CVI, chronic venous insufficiency. CEAP.

Table 2. Distribution Indicators of the VEINES-QoL/Sym Scale

Distribution Indicators of the Scale	Mean ± SD	Median	Skewness	Kurtosis	% at Floor	% at Ceiling
VEINES-Sym	50.0 ± 10.0	48.8	0.14	0.52	27.29	73.80
VEINES-QoL	50.0 ± 10.0	49.6	-0.02	-0.066	26.82	68.66

Abbreviations: VEINES-QoL/Sym, Venous Insufficiency Epidemiological and Economic Study-Quality of Life/Symptoms.

between scores of SF-36 and VEINES-Sym ($r = .19-0.52$; divergent validity; Table 5).

When it was evaluated in terms of known group, it was seen that as BMI increases, VEINES-QoL and VEINES-Sym scores decrease; and there was significant difference between VEINES-QoL and BMI ($P < .05$; Table 6).

Table 3. Internal Consistency of the VEINES QoL/Sym

Dimension	Item No	Item-Scale Correlation ^a	α (If Item Deleted)	α (Overall)
VEINES-Sym	Heavy legs	.352	.867	.81
	Aching legs	.623	.860	
	Swelling	.458	.864	
	Night cramps	.522	.862	
	Heat or burning sensation	.380	.866	
	Restless legs	.538	.861	
	Throbbing	.534	.861	
	Itching	.273	.870	
	Tingling sensation	.530	.861	
	VEINES-QoL	Compared to 1 year ago, how would you rate your leg problem	.471	
Daily activities at work		.432	.866	
Daily activities at home		.544	.864	
Standing for long periods		.566	.863	
Sitting for long periods		.534	.864	
Cut down the time spent on work		.457	.867	
Accomplished less		.490	.866	
Limited in kind of work		.593	.865	
Difficulty performing work		.535	.866	
Interference with normal social activities		.542	.862	
	Intensity of leg pain	.593	.861	
	Concerned about its appearance in leg/legs	.394	.867	
	Felt irritable	.569	.860	
	Felt a burden	.373	.866	
	Worried about bumping into things	.494	.863	

Abbreviations: VEINES-QoL/Sym, Venous Insufficiency Epidemiological and Economic Study-Quality of Life/Symptoms.

^a Spearman Rho

Table 4. Criterion Validity (Sensitivity) of the VEINES-QoL/Sym Scale According to CEAP Classification

CEAP Classification	n	Mean ± SD	P^a
VEINES-Sym			
Grade 1	25	53.27 ± 9.13	.008
Grade 2	51	51.76 ± 8.95 ^b	
Grade 3	26	46.88 ± 8.95 ^b	
Grade 4-5	16	44.30 ± 11.63	
Total	118	50.00 ± 10.00	
VEINES-QoL			
Grade 1	25	56.04 ± 8.11 ^b	.0001
Grade 2	51	50.69 ± 8.81 ^b	
Grade 3	26	47.19 ± 10.17 ^b	
Grade 4-5	16	42.90 ± 10.63	
Total	118	50.00 ± 10.00	

Abbreviations: ANOVA, analysis of variance; CEAP, clinical, etiology, anatomy, and pathophysiology; VEINES-QoL/Sym, Venous Insufficiency Epidemiological and Economic Study-Quality of Life/Symptoms.

^a Kruskal-Wallis ANOVA.

^b Bonferroni post hoc comparisons (discrete groups).

When VEINES-QoL/Sym and SF-36 physical and mental scores were evaluated according to clinical complaints of the patients in the research; it was found that VEINES-QoL/Sym and SF-36 physical and mental scores change in the same

Table 5. Correlations Between SF-36 and Subdimensions of VEINES-QoL/Sym (Convergent–Divergent Validity)

	Physical Domains of SF-36				Psychological Domains of SF-36			
	Physical Function	Role Difficulties (Physical)	Pain Health	General Function	Vitality	Social	Role Difficulties (Emotional)	Mental Health
VEINES-Sym	.446 ^b	.217 ^a	.517 ^b	.285 ^b	.349 ^b	.316 ^b	.198 ^a	.200 ^a
VEINES-QoL	.664 ^b	.575 ^b	.602 ^b	.484 ^b	.479 ^b	.561 ^b	.506 ^b	.433 ^b

Abbreviations: VEINES-QoL/Sym, Venous Insufficiency Epidemiological and Economic Study-Quality of Life/Symptoms.

^a $P < .05$.

^b $P < .01$.

Table 6. The Distribution of the Mean Scores of the VEINES-QoL/Sym Scores According to Some Sociodemographic Characteristics^a

Sociodemographic Characteristics	VEINES-QoL	VEINES-Sym
Age ^b		
25-44 years	49.74 ± 9.28	49.53 ± 9.62
45-64 years	51.77 ± 10.84	51.14 ± 11.22
65-84 years	44.06 ± 9.02	48.09 ± 6.48
Gender ^b		
Female	50.34 ± 9.35	50.42 ± 9.73
Male	48.98 ± 11.80	48.74 ± 10.81
BMI ^b		
18.5-24.9 (normal)	52.93 ± 9.66 ^c	52.33 ± 9.91
25-29.9 (overweight)	49.42 ± 9.86	48.88 ± 9.94
30 and over (obese)	47.16 ± 9.93 ^c	48.68 ± 9.73

Abbreviations: ANOVA, analysis of variance; BMI, body mass index; VEINES-QoL/Sym, Venous Insufficiency Epidemiological and Economic Study-Quality of Life/Symptoms.

^a For VEINES-QoL and BMI is $P < .05$, in other variables no difference ($P > .05$).

^b Kruskal-Wallis ANOVA.

^c Bonferroni post hoc comparisons (discrete groups).

direction. Significant differences were determined between VEINES-QoL/Sym scores especially according to pain, edema, and cramps (Table 7). This result shows that VEINES-QoL/Sym scale measures the QoL according to the clinical condition of the patients better than SF-36.

Discussion

Although it was known that with CVI, the QoL is affected negatively, practically this subject can be ignored. In advanced stage of CVI, psychological and social problems are at considerable levels as well as the physical problems. Andreozzi et al¹⁶ have reported that the QoL values of CVI in third grade are at the same level of diabetes mellitus and carcinoma; in fourth grade, worse than carcinoma and chronic obstructive pulmonary disease; and the QoL values of CVI in fifth and sixth grades are similar to that of heart failure. Therefore, to evaluate the results of CVI, a scale adapted to Turkish is needed. The findings in this study conducted to meet this requirement showed that VEINES-QoL/Sym in Turkish is reliable and valid for patients with CVI in Turkey. VEINES-QoL/Sym was translated into 4 languages; it is an easy scale and can be filled rapidly. Also, it can be applied

Table 7. Criterion Validity (Sensitivity) of the VEINES-QoL/Sym and SF-36 According To Some Expected Clinical Complaints of CVI

Clinical Complaints	Present	Absent	P
Pain			
VEINES-QoL	48.15 ± 9.26	55.18 ± 10.29	.000
VEINES-Sym	47.67 ± 8.84	56.52 ± 10.30	.001
SF 36 Physics	66.37 ± 25.54	75.64 ± 22.01	.078
SF 36 Mental	58.89 ± 20.92	60.51 ± 18.92	.109
Edema			
VEINES-QoL	46.56 ± 9.89	52.61 ± 9.32	.001
VEINES-Sym	47.29 ± 9.36	52.05 ± 10.04	.009
SF 36 Physics	62.15 ± 25.79	73.88 ± 23.15	.001
SF 36 Mental	57.49 ± 18.84	60.71 ± 21.46	.266
Cramps			
VEINES-QoL	47.36 ± 10.04	51.87 ± 9.6	.015
VEINES-Sym	48.24 ± 10.39	51.24 ± 9.58	.108
SF 36 Physics	61.22 ± 22.25	74.20 ± 25.44	.001
SF 36 Mental	56.32 ± 23.70	61.44 ± 17.40	.253
Heaviness			
VEINES-QoL	47.78 ± 7.95	50.79 ± 10.56	.231
VEINES-Sym	48.14 ± 8.54	50.66 ± 10.43	.151
SF 36 Physics	67.09 ± 25.35	69.42 ± 25.35	.522
SF 36 Mental	54.06 ± 16.90	61.19 ± 21.21	.038
Appearance			
VEINES-QoL	50.60 ± 10.19	49.68 ± 9.94	.039
VEINES-Sym	51.32 ± 9.94	49.31 ± 9.94	.303
SF 36 Physics	71.12 ± 25.63	67.62 ± 24.62	.389
SF 36 Mental	58.90 ± 21.16	59.53 ± 20.65	.936

Abbreviations: CVI, chronic venous insufficiency; VEINES-QoL/Sym, Venous Insufficiency Epidemiological and Economic Study-Quality of Life/Symptoms.

easily in epidemiological studies associated with the patients having CVI, in the evaluation of the results of the care and treatment applications, and in new drug trials; it is a good evaluation means with patient declaration.^{4,5}

The complaints due to CVI affect the house and work lives of the patients negatively, particularly in patients with advanced CVI, results such as job losses and not doing house works properly lead to psychological problems.¹⁷⁻¹⁹ General QoL measurement means were used in some studies where QoL was evaluated in CVI. General scales cannot measure the effects of CVI on QoL and changes occurred in time strictly, because they were not designed specific for the disease.²⁰ Therefore, development of QoL scales specific for the disease has been predicted. In literature there are scales with patient declaration

designed for the assessment of QoL of the patients with CVI.¹⁰⁻¹² But there is no study to measure life quality associated with CVI in Turkey. Only, CEAP classification system is used widely in clinical evaluation of CVI, but CEAP evaluation fails to give feedback about QoL.³⁻¹⁹ This deficiency can be supplied by introducing QoL scale specific for CVI. According to result of the study, VEINES-QoL/Sym scale measures the QoL of the patient due to clinical condition better than SF-36 (Table 7).

VEINES-QoL/Sym is an important evaluation means because it measures both the symptoms and QoL of the CVI. Also, VEINES-QoL/Sym has features that can be used easily in researches and in routine patient follow-up. VEINES-QoL/Sym is more sensitive in the course of CVI than SF-36, and it was reported that to give more detailed information in conditions where general scales are less sensitive in evaluating the results of new treatment in CVI. Besides these, in measurement of the results of clinical studies, it will give more scientific and

trustable information about given treatment and care from the perspective of patients. When this information is combined with the clinical results and the costs, it will provide more extensive information. VEINES-QoL/Sym provides valid measurements about findings and QoL associated with CVI and also offers flexibility.^{4,5}

VEINES-QoL/Sym allows to evaluate the effects of CVI on QoL, the treatment and interventions applied in CVI, and it also provides a chance to make comparisons between different treatment and interventions, changes seen from first grade to sixth grade of CVI.^{4,5}

The sample of this study was cross-sectional. These discussions have taken place within the framework sample of the study. Implementing VEINES-QoL/Sym in other study groups is strongly suggested.

These findings show that VEINES-QoL/Sym is valid and reliable in Turkish patients with CVI and can be used reliably.

Appendix A The Turkish Version of VEINES-QOL/Sym

Venöz Yetmezliğin Epidemiyolojik ve Ekonomik Çalışması-Yaşam Kalitesi/Belirtiler

Yönerge

Sorular Nasıl Cevaplanmalı.

Her soruyu cevabı gösterildiği gibi işaretleyerek yanıtlayınız. Eğer bir soruya nasıl cevap vereceğinizden emin değilseniz lütfen en uygun cevabı veriniz. Bu sorular, bacak/bacaklarınızdaki sorunlarla ilgilidir.

Son 4 hafta, boyunca aşağıdaki bacak(lar ile ilgili) sorunlarınızdan herhangi biri ne sıklıkla oldu?
(Her satırda bir kutuyu işaretleyiniz)

	Hergün	Haftada Birkaç Kez	Haftada Bir Kez	Birkaç Haftada Bir	Hiç
1. Bacaklarda dolgunluk	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
2. Bacaklarda ağrı	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
3. Şişlik(şişme)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
4. Gece krampları	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
5. Sıcaklık ya da yanma hissi	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
6. Bacaklarda huzursuzluk	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
7. Zonklama	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
8. Kaşıntı	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
9. Karıncalanma/batma hissi (Örn: Toplu iğne ve iğne)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5

2. Bacak sorunlarınız günün hangi zamanında en şiddetlidir/yoğundur? (birini işaretleyiniz)

- 1 Uyandıgımda
 2 Öğleyin
 3 Günün sonunda
 4 Gece boyunca
 5 Günün herhangi bir zamanında
 6 Hiçbir zaman

3. Bir yıl öncesi ile karşılaştırıldığında, genel olarak şu andaki bacak sorunlarınızın düzeyi nasıldır? (birini işaretleyiniz)

- 1 Bir yıl öncesinden çok daha iyi
 2 Bir yıl öncesinden biraz daha iyi
 3 Bir yıl öncesi ile aynı
 4 Bir yıl öncesinden biraz daha kötü
 5 Bir yıl öncesinden çok daha kötü
 6 Geçen yıl herhangi bir bacak sorunun yoktu

4. Aşağıdaki maddeler gün içinde yapabildiğiniz faaliyetler hakkındadır/ile ilgilidir. Bacak sorunlarınız şu an bu faaliyetlerinizi sınırlıyor mu? Sınırlıyorsa ne kadar? (her satırdan bir kutuyu işaretleyiniz)

	İş yapmıyorum (çalışmıyorum)	Evet, çok sınırlıyor	Evet, biraz sınırlıyor	Hayır, hiç sınırlamıyor
a. İş yerindeki/işteki günlük faaliyetler	<input type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3
b. Evdeki günlük faaliyetler (örn.ev işi, ütü, tamir işleri, vb.)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 3
c. Uzun süre ayakta kaldığınız sosyal ya da boş zaman faaliyetleri (örn: partiler, düğünler, toplu taşıtlara binme, alışveriş vb.)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 3
d. Uzun süre oturarak yapılan sosyal ya da boş zaman faaliyetleri (sinema ve tiyatroya gitme, seyahat etme vb.)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 3

5. Son 4 hafta boyunca, bacak sorunlarınız nedeniyle iş ya da diğer normal günlük faaliyetlerinizde aşağıdaki sorunlardan herhangi biri oldu mu?(her satırdan bir kutuyu işaretleyiniz)

	Evet	Hayır
a. İş ya da diğer faaliyetler için harcanan zamanda azalma	<input type="checkbox"/> 1	<input type="checkbox"/> 2
b. İstediginizden daha azını başarma	<input type="checkbox"/> 1	<input type="checkbox"/> 2
c. İş veya diğer faaliyetlerin çeşidi sınırlandı mı?	<input type="checkbox"/> 1	<input type="checkbox"/> 2
d. İş veya diğer faaliyetleri yapmada zorlanma oldu mu? (örn: özel çaba harcama)	<input type="checkbox"/> 1	<input type="checkbox"/> 2

6. Son 4 hafta boyunca, bacak sorunlarınız aile, arkadaşlar, komşular veya diğer gruplarla normal sosyal faaliyetlere katılmanızı ne derece etkiledi?(birini işaretleyiniz)

- 1 Hiç
 2 Biraz
 3 Orta
 4 Oldukça
 5 Aşırı

7. Son 4 hafta boyunca ne kadar bacak ağrınız oldu? (birini işaretleyiniz)

- 1 Hiç
 2 Çok hafif
 3 Hafif
 4 Orta
 5 Şiddetli
 6 Çok şiddetli

8. Bu sorular, son 4 hafta boyunca bacağınızdaki soruna bağlı olarak kendinizi nasıl hissettiğiniz ve ne düşündüğünüz ile ilgilidir. Her bir soru için, lütfen hissettiklerinize en yakın cevabı verin.

Son 4 hafta boyunca

(her satırdan bir kutuyu işaretleyiniz)	Her zaman	Çoğu zaman	Oldukça	Bazen	Nadiren	Hiçbir zaman
a. Bacağınızın görünüşü ile ilgili endişelendiniz mi?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
b. Gergin hissettiniz mi?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
c. Aile ya da arkadaşlarınıza yük olduğunuzu hissettiniz mi?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
d. Bacağınızdaki yamru yumru görüntüler/şeyler hakkında endişelendiniz mi?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
e. Bacağınızın görüntüsü giysi seçiminizi etkiledi mi?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6

Yardımlarınız için teşekkür ederiz . . .

Tarih: . . . / . . . /

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References

- Staffa R. Chronic venous insufficiency. *Epidemiology. Bratisl Lek Listy.* 2002;103(4-5):166-168.

- Jantet G. Chronic venous insufficiency: worldwide results of the RELIEF Study. *Angiology.* 2002;53(3):245-256.
- Sayın ÖA, Dayıoğlu E. Kronik venöz yetersizlikte klinik ve CEAP sınıflaması. In: Bozkurt K, Yıldırım M, eds. *Kronik Venöz Yetersizlik.* 2007:39-46.
- Lamping DL, Schroter S, Xavier Kurz X, Kahn SR, Abenhaim L. Evaluation of outcomes in chronic venous disorders of the leg: development of a scientifically rigorous, patient-reported measure of symptoms and quality of life. *J Vasc Surg.* 2003;37(2):410-419.
- Kahn SR, M'lan CE, Lamping DL, Kurz X, Berard A, Abenhaim LA. Relationship between clinical classification of chronic venous disease and patient-reported quality of life: results from an international cohort study. *J Vasc Surg.* 2004;39(4):823-828.

6. Kurz X, Lamping DL, Kahn SR, et al. Do varicose veins affect quality of life? Results of an international population-based study. *J Vasc Surg.* 2001;34(4):641-648.
7. Blomgren L, Johansson G, Bergqvist D. Quality of life after surgery for varicose veins and the impact of preoperative duplex: results based on a randomized trial. *Ann Vasc Surg.* 2006;20(1):30-34.
8. Kaplan RM, Criqui MH, Denenberg JO, Bergen J, Fronck A. Quality of life in patients with chronic venous disease: San Diego population study. *J Vasc Surg.* 2003;37(5):1047-1053.
9. Hareendran A, Doll H, Wild DJ, et al. The venous leg ulcer quality of life (VLU-QoL) questionnaire: development and psychometric validation. *Wound Repair Regen.* 2007;15(4):465-473.
10. Garratt AM, Ruta DA, Abdalla MI, Russell IT. Responsiveness of the SF-36 and a condition specific measure of health outcome for patients with varicose veins. *Qual Life Res.* 1996;5(2):1-12.
11. Smith JJ, Garratt AM, Guest M, Greenhalgh RM, Davies AH. Evaluating and improving health-related quality of life in patients with varicose veins. *J Vasc Surg.* 1999;30(4):710-719.
12. Launois R, Reboul-Marty J, Henry B. Construction and validation of a quality of life questionnaire in chronic lower limb venous insufficiency (CIVIQ). *Qual Life Res.* 1996;5(6):539-554.
13. Padberg FT. CEAP classification for chronic venous disease. *Dis Mon.* 2005;51(2-3):176-182.
14. Cull A, Sprangers M, Bjordal K, Aaronson N, West K, Bottomley A. *EORTC Quality Of Life Group Translation Procedure.* 2nd ed. Brussels: EORTC; 2002:3-24.
15. Kirkwood BR, Sterne JAC. *Essential Medical Statistics.* 2nd ed. Oxford: Blackwell Publishing Company; 2003:33-87; 364-476.
16. Andreozzi GM, Cordova R, Scomparin MA, Martini R, D'eri A, Andreozzi F. Quality of life in chronic venous insufficiency: an Italian pilot study of Triveneto Region. *Int Angiol.* 2005;24(3):272-277.
17. Bradbury A, Evans C, Allan P, Lee A, Ruckley CU, Fowkes FGR. What are the symptoms of varicose veins? Edinburgh vein study cross sectional population survey. *BMJ.* 1999;318(7180):353-356.
18. Campbell WB, Decaluwe H, Boecxstaens V, et al. The symptoms of varicose veins: difficult to determine and difficult to study. *Eur J Vasc Endovasc Surg.* 2007;34(6):741-744.
19. Perrin M. The impact on quality of life of symptoms related to chronic venous disorders. *Medicographia.* 2006;28(2):146-151.
20. Sam RC, MacKenzie RK, Paisley AM, Ruckley CV, Bradbury AW. The effect of superficial venous surgery on generic health related quality of life. *Eur J Vasc Endovasc Surg.* 2004;28(3):253-256.