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Further Validation of the Peripheral Artery Questionnaire: Results from a Peripheral Vascular Surgery Survey in the Netherlands

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Abstract *Objectives:* Peripheral arterial disease (PAD) is associated with adverse cardiovascular events and can significantly impair patients' health status. Recently, marked methodological improvements in the measurement of PAD patients' health status have been made. The Peripheral Artery Questionnaire (PAQ) was specifically developed for this purpose. We validated a Dutch version of the PAQ in a large sample of PAD patients.
Design: Cross-sectional study.
Methods: The Dutch PAQ was completed by 465 PAD patients (70% men, mean age 65 ± 10 years) participating in the Euro Heart Survey Programme. Principal components analysis and reliability analyses were performed. Convergent validity was documented by comparing the PAQ with EQ-5D scales.
Results: Three factors were discerned; Physical Function, Perceived Disability, and Treatment Satisfaction (factor loadings between 0.50 and 0.90). Cronbach's α values were excellent (mean $\alpha = 0.94$). Shared variance of the PAQ domains with EQ-5D scales ranged from 3 to 50%.
Conclusions: The Dutch PAQ proved to have good measurement qualities; assessment of Physical Function, Perceived Disability, and Treatment Satisfaction facilitates the monitoring of patients' perceived health in clinical research and practice. Measuring disease-specific health status in a reliable way becomes essential in times were a wide array of treatment options are available for PAD patients.

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Introduction

Patients with peripheral arterial disease (PAD) constitute a high-risk group that needs stringent risk management and monitoring. Atherosclerotic processes underlying the disease affect different vascular beds simultaneously and predispose PAD patients to a variety of cardiovascular conditions such as claudication, myocardial infarction, and stroke.[1] Increasing awareness of PAD and its consequences is especially needed in lower-extremity PAD.[2,3] Apart from the disease burden itself,[4] patients are confronted with multiple challenges due to the chronic nature of their disease and the multifaceted risk management and treatment options that are available to them. PAD patients should be routinely offered stringent risk management treating associated conditions such as hypertension and hyperlipidemia and, where indicated, endovascular procedures and surgery may bring relief.[1] When it comes to the evaluation of medical therapy and existing revascularization procedures, quantifying PAD patients' health status becomes an important issue.[5] In fact, unlike the use of percutaneous revascularization in the setting of an acute myocardial infarction where treatment may improve survival, the primary goal of revascularization procedures in PAD is to improve patients' symptoms, function and quality of life. In order to monitor patients' health status in a reliable way, a sensitive disease-specific instrument is needed.

Recently, marked methodological improvements in the measurement of PAD patients' health status (their symptoms, function and quality of life) have been made. The psychometrically-sound Peripheral Artery Questionnaire (PAQ), a disease-specific measure, was developed for this purpose.[6] This instrument already proved to be useful to quantify improvement in health status after peripheral endovascular revascularization.[5] However, the PAQ is only available in an English-language version, and the dimensions it measures were created to represent a clinical framework for quantifying patients' health status and no empiric data supporting a patient-centered framework of the data has been performed. In order to make wider use of the PAQ possible, and to facilitate comparisons of PAD care and outcomes across different healthcare systems, we translated and validated a Dutch version of the PAQ in a large sample of Dutch PAD patients. More specifically, its validity and reliability was examined; convergent validity was tested against the EQ-5D, a standardized and widely used health outcome instrument.[7,8]

Methods

Participants and design

This study was part of a survey of clinical practice that was conducted between May and December 2004 in 11 hospitals across the Netherlands. The study was performed within the infrastructure of the Euro Heart Survey Programme, a project that evaluates the implementation of guidelines in daily clinical practice. Details of the participating centers and information about data collection are described elsewhere.[9] The study was approved by the local ethics committees of the participating centers and all patients provided informed consent. All consecutive patients included in this survey were seen at the participating vascular surgery departments and were undergoing noncardiac elective vascular repair (endovascular or open procedures). Endovascular procedures included aortic endograft procedures and peripheral angioplasties with and without stenting. Open procedures included: elective abdominal aortic surgery, carotid endarterectomy, or infrainguinal arterial reconstruction. Patients below the age of 18 years and patients undergoing thoracic or brain surgery were excluded. The study was approved by the local ethics committees of the participating centers and all patients provided informed consent. After three years, information on vital status was obtained from the Civil Registries. All survivors were contacted to complete health status questionnaires.

Translation of the instrument

Forward and backward translation according to the World Health Organization translation method was applied.[10] Forward translations were made by two different translators whose native language was Dutch. These translations were combined for making a first agreed-upon forward translation. Two other members of the bilingual group then evaluated the quality of this first version regarding clarity and readability, and checked for further inconsistencies in the translation. Adaptations upon this evaluation were amended where appropriate. Next, monolingual individuals were asked to read the first forward translation version through and check for comprehensibility. These individuals were PAD patients recruited at the vascular outpatient clinic of a teaching hospital at the St.-Elisabeth Hospital, the Netherlands. Comments of the monolingual group that were compatible with the meaning of the original document were inserted in the first forward translation version. Subsequently, a back-translated version was obtained from a professional translator. Finally, the original and back-translated documents were set side-by-side by the bilingual expert group and were reviewed for accuracy and equivalence of the translation. The final version of the Dutch translation is presented in appendix A and information about the interpretation of scores is added in appendix B.

Measures

Demographic and clinical variables

Demographic variables included age and sex. Patients' medical history was documented by their hospital charts at the time of inclusion and included previous cardiovascular history (angina pectoris, myocardial infarction, heart failure, stroke/transient ischemic attack, arrhythmia, valvular disease, and previous revascularization), clinical risk factors (obesity, current smoking, hypertension, diabetes mellitus, renal insufficiency, and chronic obstructive pulmonary disease), and type of surgery (endovascular, open). Obesity was defined as having a Body Mass Index $\geq$30. Hypertension was recorded in patients presenting with a blood pressure of $\geq$140/90 mm Hg or who were treated for hypertension. Diabetes mellitus was recorded if patients had a fasting glucose level of $\geq$7.0 mmol/l, or if

they received treatment for diabetes. Renal insufficiency was recorded in patients with a serum creatinine level $\geq$2.0 mg/dl or in those who required dialysis.

Health status

Disease-specific health status was measured by the translated Dutch version of the PAQ; the instrument consists of 20 items with one item identifying the most symptomatic leg and the other items being answered along variable Likert response scales with equidistant gradations of response. Six domains were initially discerned in the PAQ: Physical Function, Symptoms, Symptom Stability, Social Limitation, Treatment Satisfaction, and Quality of Life.[6] Given that the response categories are different across items, standardized scoring algorithms are applied to obtain scale scores ranging from 0 to 100, with high scores indicating good health status.[6] Previously, the instrument proved to be internally reliable (Cronbach's α ranging from 0.80 to 0.94) and sensitive to clinical improvement in a study with patients undergoing elective percutaneous peripheral revascularization.[6] The convergent validity of the PAQ was established against existing health status questionnaires, including the Walking Impairment Questionnaire, the 36-item Short-Form Health Survey (SF-36), and an exercise treadmill test.[6]

To assess the convergent validity of the Dutch PAQ, the Dutch version of the EQ-5D was used, a standardized, generic instrument for describing and valuing health that was designed by the EuroQol Group (an international research network established in 1987).[11,12] The EQ-5D consists of a descriptive system that defines health along five dimensions and a visual analogue scale (EQ VAS). The five dimensions include: mobility, self care, usual activities, pain or discomfort, and anxiety or depression. Each dimension can be rated on three levels, ranging from no problems to extreme problems and this score can be dichotomized. The EQ VAS asks respondents to rate their perception of their overall health on a vertical visual analogue scale with the endpoints ranging from 0 to 100 (0 = 'worst imaginable health state' and 100 = 'best imaginable health state'). In this study, the EQ VAS, the EQ-5D index, and the dichotomous dimension scores (1 = no problems, 0 = some or extreme problems) were used in the analyses.[13] The EQ-5D index, a single summary index, calculated in this study was based on value sets derived from the Dutch population.[14,15]

Statistical analysis

Baseline characteristics were described for the total sample and differences between responders and non-responders regarding these variables were examined using Student's *t*-tests for continuous variables and chi-square tests for dichotomous variables to assess for potential selection biases among those who participated in the current study. Missing values were also checked on item-level for the PAQ. To assess the suitability of the data for factor analysis, Bartlett's test of sphericity and the Kaiser–Meyer–Olkin measure of sampling adequacy were checked. Principal components analysis (PCA) was applied to determine the number of factors present in the PAQ. Factors with an eigenvalue of 1.0 or more were retained for further investigation. Varimax rotation was used to interpret the pattern of loadings on the identified factors. Internal consistency of the factors was examined by performing reliability analyses. Cronbach's alpha coefficients were used as indicators of internal consistency. Convergent validity of the PAQ was evaluated by correlating the extracted PAQ subscales and Summary score with the dichotomized subscales of the EQ-5D (point-biserial correlations), the EQ VAS, and the EQ-5D index and by calculating the shared variance (r^2 in %) between the PAQ and the EQ domains. In addition, PAQ summary and domain scores were stratified by dichotomized EQ-5D subscales (Student's *t*-tests). All analyses were performed using SPSS for Windows, version 14.0.1 (SPSS Inc., Chicago, Illinois).

Results

The total study population consisted of 711 patients. Patient status could be determined in 701 (99%) of the original 711 respondents revealing that 149 (21%) of patients had died in the three year period since the original survey. All 552 survivors were contacted to complete health status questionnaires (EQ-5D and PAQ), 465 (84%) of whom responded and comprised the final study group. The current sample ($n = 465$) included 70% ($n = 323$) male patients and the mean age was 65 years (SD = 10 years). There were 245 (52.7%) of patients who underwent an endovascular procedure; 27 patients underwent an aortic endograft procedure, 216 peripheral angioplasties with or without stenting, and 2 others. A total of 220 (47.3%) patients underwent an open procedure; 22 patients underwent carotid endarterectomy, infrainguinal arterial reconstruction $n = 101$, abdominal aortic surgery $n = 88$ and 9 other open procedures. Information about associated risk factors and procedure information is presented in Table 1.

Responders did not differ from non-responders, except for current smoking (52.9% in non-responders vs. 35.5% in responders, $p = 0.002$) and the presence of arrhythmia (16.1% in non-responders vs. 6.5% in responders, $p = 0.002$). The total of missings on the PAQ items ranged from 2.8 to 14.2% (mean = 5.5%), with the questions concerning treatment satisfaction yielding the largest amount of missings.

Measurement qualities of the PAQ

Factor analyses were performed on all PAQ items (except for the first item that indicates the most symptomatic leg) for the total sample ($n = 465$). Three factors explained the most of the variance in the observed data (using the criterion of eigenvalues above 1.0) and therefore three factors were retained in the final model (Table 2). The first factor explained 58%, the second 10%, and the third 5%. A more than three factor solution did not significantly add to the interpretability of the data (explaining only residual variance between 4 and 0.4%). Items are presented and numbered according to the order of the original instrument. All PAQ items had factor loadings ranging from 0.50 to 0.90. Two out of three factors corresponded almost exactly with the original Physical Function domain (items 2a–f) and exactly with the Treatment Satisfaction scale (items 7–9). The new factor was a combination of the

Table 1 Characteristics of the total sample ($n = 465$)

Demographics	
Mean age ± SD, year	65 ± 10
Male sex, *n* (%)	323 (70)
Cardiovascular history, n (%)	
Angina pectoris	73 (16)
Myocardial infarction	67 (14)
Heart failure	18 (4)
Stroke or TIA	69 (15)
Arrhythmia	30 (7)
Valvular disease	23 (5)
Previous revacularization	77 (17)
Clinical risk factors, n (%)	
Obesity	57 (12)
Current smoker	165 (36)
Hypertension	177 (38)
Diabetes mellitus	96 (21)
Renal insufficiency	24 (5)
COPD	49 (11)
Surgical procedure, n (%)	
Endovascular	245 (53)
Open	220 (47)

TIA = transient ischemic attack; and COPD = chronic obstructive pulmonary disease.

original Symptom, Symptom Stability, Social Limitation, and Quality of Life domains (items 3-13c). This new domain was called 'Perceived Disability' because these items require patients to evaluate their disabilities. Items with double loadings (4, 11, 13a–c) were allocated according to their original domain in order to preserve the 'clinical' framework of the original instrument[6] (Table 2). The Summary score was computed by averaging the Physical Function and Perceived Disability scores.

Reliability was documented using Cronbach's α; Cronbach's α for the Physical Function domain was 0.95, for the Perceived Disability domain 0.93, and for the Treatment Satisfaction domain 0.91. The Cronbach's α for the Summary scale was 0.96. Mean inter-item correlation for the Physical Function domain was 0.76, for the Perceived Disability 0.58, for Treatment Satisfaction 0.78, and for the Summary score 0.71.

Convergent validity of the PAQ

Correlations between the PAQ subscales, PAQ Summary score, and the dichotomized subscales of the EQ-5D, the EQ VAS, and the EQ-5D index are presented in Table 3. Shared variance between the PAQ Physical Function domain and the EQ-5D scales ranged from 10 to 49%. The shared variance of the Perceived Disability domain scores of the PAQ and the EQ-5D scores ranged from 14 to 50%. The Treatment Satisfaction domain and the EQ-5D domains only shared 3–22% of variance. The shared variance between the Summary PAQ score and the EQ-5D scores ranged from 12 to 50%.

The intercorrelations of the PAQ are also presented in Table 3 (shared variance between 18 and 92%). The intercorrelations with the Treatment Satisfaction scale, were relatively smaller (0.43–0.60) as compared with the intercorrelations of the other domains and the Summary score (0.78–0.96).

Mean PAQ Summary scores and PAQ domain scores were significantly different ($p < 0.0001$) for high vs. low health status patients groups that were created by stratifying the total sample according to the five dichotomized subscales of the EQ-5D (Figure 1).

Discussion

In order to make wider use of the PAQ possible, the questionnaire was translated into Dutch and validated in a study of Dutch PAD patients that was performed within the infrastructure of the Euro Heart Survey Programme. It is the first translated version of the PAQ that was developed and the first study that evaluated its factorial structure within a relatively large study sample. A high response rate and the missing analysis on item-level showed that the PAQ was well accepted in the current sample of PAD patients. Unlike in the original instrument, three factors were discerned in the Dutch version of the PAQ, explaining most of the variance in the observed data. Two factors overlapped completely with the previously proposed Physical Function and Treatment Satisfaction scales of the original instrument. The other original domains (Symptom, Symptom Stability, Social Limitation, and Quality of Life) were combined in a new domain, which we labeled the Perceived Disability domain in our study. As we chose to stay close to the clinically interpretable domains that were defined in the original instrument, we accordingly allocated double-loaded items. Future studies therefore need to replicate our work in both American and European samples to get an internationally agreed-upon factor structure. The three domains identified in this study were internally reliable. The convergent validity was established using a well standardized generic health status questionnaire, the EQ-5D.[7] Convergent validity of the PAQ domains was documented by medium to large correlations with the EQ-5D and by comparisons of the mean scores of the PAQ scales with the stratified EQ-5D domains. Both the intercorrelations of the PAQ domains and the correlations of the Treatment Satisfaction domain with the EQ-5D scales pointed to the uniqueness of the Treatment Satisfaction domain. Intercorrelations of the PAQ domains Perceived Disability and Physical Function were all high, indicating that the domains were strongly related to the construct that the questionnaire purported to measure, namely disease-specific health status.

Measuring disease-specific health status in a reliable way becomes essential in times were a wide array of treatment options are available for PAD patients. Recent technological advances have also resulted in a shift from open surgical procedures toward lower-morbidity catheter-based interventional therapies.[16,17] Although the use of these catheter-based interventions has increased significantly, the results regarding long-term patency rates of these interventions are mixed.[18] Due to the variety in treatment options and their variable success rates, PAD management has become a complex and challenging task. Treatment should therefore be tailored to the individual patient and should take into account the patients' perspective. To facilitate such discussions with patients, patient-based

Table 2 Sample pattern matrices of PAQ scale items as indicated by principal component analyses[a]

	Total ($n = 465$)		
	Factor I physical function	Factor II perceived disability	Factor III treatment satisfaction
Physical function			
2a-Walking around your home	**0.70**	0.34	0.19
2b-Walking 1—2 blocks on level ground	**0.85**	0.30	0.16
2c-Walking 1—2 blocks up a hill	**0.88**	0.22	0.19
2d-Walking 3—4 blocks on level ground	**0.88**	0.24	0.15
2e-Hurrying or jogging	**0.87**	0.15	0.20
2f-Vigorous work or exercise	**0.87**	0.19	0.19
Perceived disability			
3-Symptoms of PAD have changed	0.29	**0.66**	0.01
4-How often PAD symptoms	0.54	**0.54**	0.31
5-How much has PAD bothered you	0.55	**0.63**	0.31
6-Awakened with PAD symptoms	0.26	**0.56**	0.28
10-Limited enjoyment of life	0.42	**0.63**	0.42
11-Spend rest of life with PAD like it is now	0.41	**0.50**	0.50
12-Felt discouraged or down in the dumps	0.38	**0.62**	0.40
13a-Limited participation in hobbies, recreation	0.59	**0.57**	0.32
13b-Limited participation in visiting family, friends	0.56	**0.59**	0.18
13c-Limited participation in working or doing household chores	0.62	**0.56**	0.23
Treatment satisfaction			
7-Satisfied that everything possible is being done	0.19	0.21	**0.85**
8-Satisfied with explanations	0.14	0.10	**0.90**
9-Satisfied with current treatment	0.19	0.21	**0.85**

[a] Varimax rotation; loadings of items assigned to a factor are presented in bold face.

outcomes also need to be included in randomized trials evaluating revascularization procedures and medication use in PAD patients. Generic health status instruments are not sensitive enough to provide clinicians and researchers with useful information that makes adequate evaluation of PAD treatments possible.[6,19,20] Several disease-specific health status measures are developed for this purpose, with the PAQ being an excellent example of a valid and sensitive instrument that could be used both in clinical practice and as a treatment outcome in clinical PAD trials.[5,6]

The term 'health status' was chosen to refer to the construct that the PAQ intends to measure. However, the items that are contained in the PAQ do not all fully correspond with the definition of health status: ''physical, mental, and social functioning assessment, but without the subjective evaluation of the patient''.[21] The questionnaire

Table 3 Correlation matrix of the PAQ scales and EQ-5D scales ($n = 465$)

	Correlation matrix[a]			
	PAQ physical function	PAQ perceived disability	PAQ treatment satisfaction	PAQ summary score
PAQ				
Physical function	—			
Perceived disability	0.78	—		
Treatment satisfaction	0.43	0.60	—	
Summary score	0.96	0.93	0.54	—
EQ-5D				
Mobility	0.66	0.59	0.36	0.64
Daily activities	0.67	0.65	0.35	0.66
Self care	0.40	0.38	0.18	0.38
Pain	0.61	0.61	0.42	0.62
Anxiety/depression	0.32	0.38	0.17	0.35
EQ-5D Index	0.65	0.67	0.38	0.66
EQ-VAS	0.70	0.71	0.47	0.71

PAQ = peripheral artery questionnaire; EQ-5D = EuroQol, and VAS = visual analogue scale.
[a] All correlations were significant at the 0.01 level.

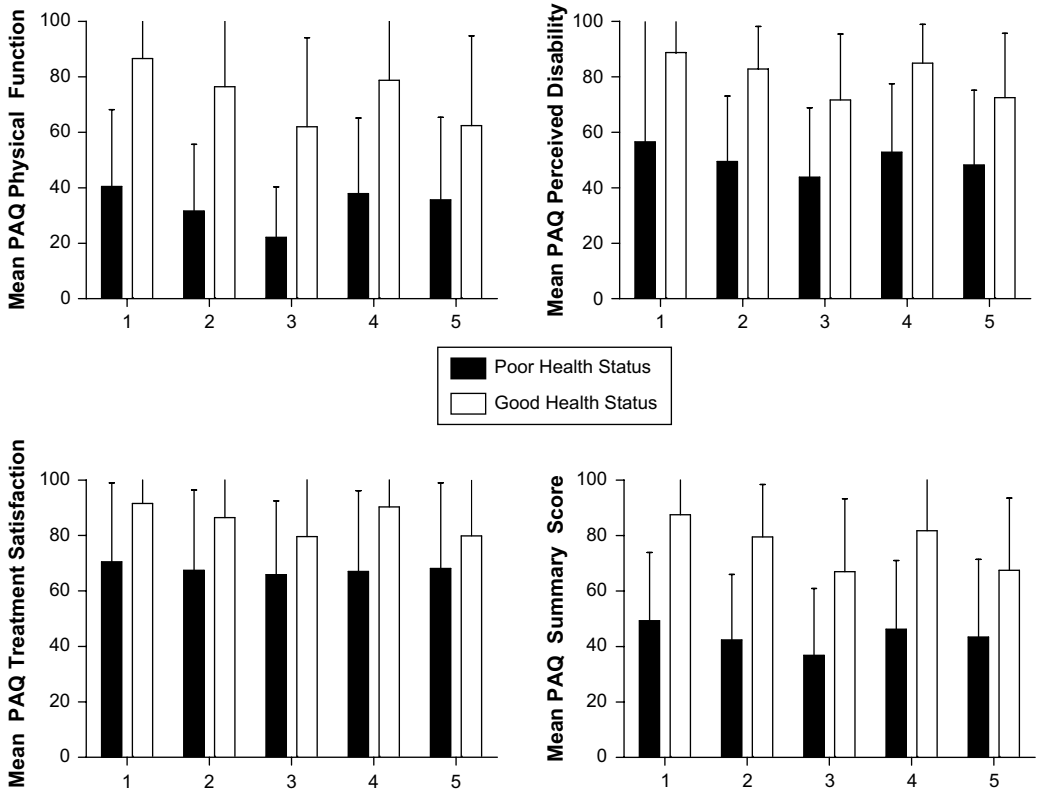

Figure 1 Mean PAQ domain and Summary scores and standard deviations stratified by dichotomized EQ-5D subscales ($n = 465$). All differences were significant at the $p < 0.0001$ level. (1) Mobility, (2) Daily Activities, (3) Self Care, (4) Pain, (5) Anxiety/Depression.

is actually a mixture of items that deal with patients' health status and items that assess quality of life, with quality of life referring to patients' personal evaluation of their functioning, disease, and treatment.[22,23]

The Physical Function domain of the PAQ is an example of a scale measuring health status; it indicates whether PAD caused limitations and classifies the levels of such limitations.[22] In the second domain, called Perceived Disability in our study, a more subjective and evaluative character is attributed to items 10—13c (*e.g., If you had to spend the rest of your life with your PAD the way it is right now, how would you feel about this?*). The third domain in our study also refers to the personal *evaluation* of the treatment that the patient received and is therefore more related to the genuine quality of life concept.[23] For clinical decision making, both health status or the registration of limitations, and quality of life, the extent to which these limitations actually hamper the patient, need to be considered and in this respect, the PAQ may offer insight in both. Other disease-specific outcome measures that are available suffer from predominantly focussing on the registration of limitations and do not stress the subjective experience of the disease and its limitations. The Walking Impairment Questionnaire, for example, only assesses the degree of physical limitation that the PAD patient experiences[24] and although the developers of the Intermittent Claudication Questionnaire claim to measure quality of life, thirteen out of sixteen items only register limitations with physical, mental and social functioning and do not evaluate the degree of dissatisfaction with these limitations.[25] The Vascular Quality of Life Questionnaire, on the other hand, contains items that tap both the patients' health status and quality of life, but the instrument contains both questions for PAD patients with intermittent claudication and critical leg ischemia, making this instrument more generic.[26]

This study has some limitations that should be considered when interpreting our results. The most important limitation is the cross-sectional nature of this study. We only assessed patients' health status with the PAQ on a single point of time and issues regarding reproducibility and sensitivity to change were not examined. On the other hand, previous studies with the PAQ convincingly showed that the instrument had a good test—retest reliability and that the instrument was sensitive to clinical improvement.[5,6] Another limitation is that our study population only consisted of PAD patients that underwent vascular surgery, which may limit the generalizability of scores to PAD patients that received conservative treatment. In spite of these limitations, potential strengths of our study were the large sample size and the fact that our study population consisted of patients of different hospitals across the Netherlands. Furthermore, this study was the first to extensively document on the factorial validity of the PAQ and was able to reduce the number of factors from 6 to 3, further facilitating its use in clinical practice.

In sum, the Dutch version of the PAQ was found to be a reliable and valid instrument to assess the health status of PAD patients. In contrast with the six domains of the original instrument, a three factor solution was sufficient to explain most of the variance in the health status scores of the present

study. The next step is to perform additional research to establish the validity of the PAQ with relevant clinical indices, such as walking performance and standardized disease-specific risk classifications, and to monitor the performance of the questionnaire in evaluating the benefit of PAD treatments, as perceived by the individual patient. These efforts should all contribute to the tailor-made management of PAD patients, in this era of multifaceted risk management and treatment options that are available to them.

Appendix A
The Dutch version of the Peripheral Artery Questionnaire

Appendix A. The Dutch version of the Peripheral Artery Questionnaire

De volgende vragen hebben betrekking op verstoppingen in de bloedvaten in uw lichaam, in het bijzonder de benen, en hoe dat uw leven zou kunnen beïnvloeden. Wilt u a.u.b. de volgende vragen lezen en beantwoorden. Er zijn geen juiste of foute antwoorden. Duidt u a.u.b. het antwoord aan dat het beste op u van toepassing is.

1. Verstoppingen in de bloedvaten, vaak **perifeer vaatlijden** genoemd, treft verschillende mensen op verschillende manieren. Sommigen voelen krampen of pijn terwijl anderen vermoeidheid voelen. Welk been (of bil) veroorzaakt voor u het meest ernstige **ongemak, vermoeidheid, pijn, zeurende pijn of krampen**?

het **rechter**been (of bil)	het **linker**been (of bil)	**beide** zijn gelijk	geen van beide
□	□	□	□

2. Bekijkt u a.u.b. onderstaande lijst en geef aan in welke mate u beperkt was door uw **perifeer vaatlijden** (ongemak, vermoeidheid, pijn, zeurende pijn of krampen in uw kuiten (of billen) in de afgelopen 4 weken.

Plaatst u a.u.b. een X in één hokje op elke lijn.

Activiteit	Ernstig beperkt	Nogal beperkt	Matig beperkt	Licht beperkt	Helemaal niet beperkt	Beperkt door andere redenen of heb de activiteit niet uitgevoerd
a. Rondlopen in huis	□	□	□	□	□	□
b. 100 à 200 meter lopen op een **vlakke ondergrond**	□	□	□	□	□	□
c. 100 à 200 meter **bergop** lopen	□	□	□	□	□	□
d. 300 à 400 meter op een vlakke ondergrond lopen	□	□	□	□	□	□
e. Haasten of joggen (alsof u de bus moet halen)	□	□	□	□	□	□
f. Zwaar werk of lichamelijke inspanning	□	□	□	□	□	□

3. Vergeleken met 4 weken geleden, zijn uw klachten die te maken hebben met uw **perifeer vaatlijden** (ongemak, vermoeidheid, pijn, zeurende pijn of krampen in uw kuiten (of billen) veranderd?

Mijn klachten zijn...

Veel verergerd	Een beetje verergerd	Onveranderd gebleven	Een beetje verbeterd	Veel verbeterd	Ik heb geen klachten gehad in de afgelopen 4 weken
□	□	□	□	□	□

4. In de afgelopen 4 weken, hoeveel keer had u **ongemak, vermoeidheid, pijn, zeurende pijn of krampen in uw kuiten (of billen)**?

Altijd	Meerdere keren per dag	Minimaal 1 keer per dag	3 of meer keer per week, maar niet elke dag	1 à 2 keer per week	Minder dan 1 keer per week	Geen enkele keer in de afgelopen 4 weken
□	□	□	□	□	□	□

5. In de afgelopen 4 weken, hoeveel hinder heeft uw **ongemak, vermoeidheid, pijn, zeurende pijn of krampen in uw kuiten (of billen)** u bezorgd?

Het bezorgde me...

Ernstige hinder	**Matige** hinder	**Enigszins** hinder	**Lichte** hinder	**Helemaal geen** hinder	Ik heb **geen ongemak in mijn benen** gehad
□	□	□	□	□	□

6. In de afgelopen 4 weken, hoe vaak bent u wakker geworden met **pijn, zeurende pijn of krampen in uw benen of voeten**?

Elke nacht	3 of meer keer per week, maar niet elke nacht	1 à 2 keer per week	Minder dan 1 keer per week	Nooit in de afgelopen 4 weken
□	□	□	□	□

7. Hoe tevreden bent u dat al het mogelijke voor u wordt gedaan om uw **perifeer vaatlijden** te behandelen?

Helemaal niet tevreden	Grotendeels ontevreden	Een beetje tevreden	Grotendeels tevreden	Helemaal tevreden
□	□	□	□	□

8. Hoe tevreden bent u met de uitleg die uw dokter u heeft gegeven over uw **perifeer vaatlijden?**

Helemaal niet tevreden	Grotendeels ontevreden	Een beetje tevreden	Grotendeels tevreden	Helemaal tevreden
□	□	□	□	□

9. Over het algemeen, hoe tevreden bent u over de huidige behandeling van uw **perifeer vaatlijden?**

Helemaal niet tevreden	Grotendeels ontevreden	Een beetje tevreden	Grotendeels tevreden	Helemaal tevreden
□	□	□	□	□

10. In de afgelopen 4 weken, hoeveel heeft uw **perifeer vaatlijden** u beperkt in uw levensvreugde?

Het heeft mijn levensvreugde **heel veel** beperkt	Het heeft mijn levensvreugde **veel** beperkt	Het heeft mijn levensvreugde **matig** beperkt	Het heeft mijn levensvreugde **een beetje** beperkt	Het heeft mijn levensvreugde **niet** beperkt
□	□	□	□	□

11. Als u de rest van uw leven verder moest leven met uw **perifeer vaatlijden** zoals het op **dit ogenblik** is, hoe zou u zich hierover voelen?

Helemaal niet tevreden	Grotendeels ontevreden	Een beetje tevreden	Grotendeels tevreden	Helemaal tevreden
□	□	□	□	□

12. In de afgelopen 4 weken, hoe vaak heeft u zich ontmoedigd gevoeld of in de put gezeten vanwege uw **perifeer vaatlijden?**

Ik voelde me zo **heel de tijd**	Ik voelde me zo **meestal**	Ik voelde me **soms** zo	Ik voelde me **zelden** zo	Ik voelde me **nooit** zo
□	□	□	□	□

13. In hoeverre beïnvloedt uw **perifeer vaatlijden** uw levensstijl? Geef aan hoe uw **ongemak, vermoeidheid, pijn, zeurende pijn of krampen in uw kuiten (of billen)** u van deelname aan de volgende activiteiten hebben beperkt in de afgelopen 4 weken.

Plaatst u a.u.b. een X in één hokje op elke lijn.

Activiteit	**Ernstig** beperkt	**Nogal** beperkt	**Matig** beperkt	**Licht** beperkt	**Helemaal niet** beperkt	Niet van toepassing of nam niet deel door andere redenen
a. Hobby's, ontspannende activiteiten	□	□	□	□	□	□
b. Familie of vrienden gaan bezoeken	□	□	□	□	□	□
c. Werken of huishoudelijke taken verrichten	□	□	□	□	□	□

Appendix B

Interpretation of raw scores — patients undergoing vascular surgery in the Netherlands ($n = 465$)

The following table can be used for the interpretation of raw scores on the PAQ scales.

	Mean (SD)	33 Percentile cut-off scores to indicate poor health status
Physical function	56.4 (33.5)	≤33
Perceived disability	67.2 (25.9)	≤57
Treatment satisfaction	77.4 (27.5)	≤75
Summary score	62.0 (28.2)	≤47

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