

# Greek Versions of the Oswestry and Roland-Morris Disability Questionnaires

*Petros J. Boscainos, MD\*;* *George Sapkas, MD, DSc\*;*  
*Eugenia Stilianessi, MD\*;* *Konstantinos Prouskas, PhD\*\*;*  
*and Stamatios A. Papadakis, MD\**

Disability questionnaires are increasingly used for clinical assessment, outcome measurement of treatment and research methodology of low back pain. Their use in different countries and cultural groups must follow certain guidelines for translation and cross-cultural adaptation. The translation of such an instrument must be tested for its reliability and validity to be applied and to allow comparability of data. The Oswestry Disability Index and the Roland-Morris Disability Questionnaire are two disability questionnaires most commonly used as outcome measures in patients with low back pain. The two questionnaires were translated for use with the Greek population, were back translated and tested, and became available in a final version. The Greek versions of the Oswestry Disability Index and the Roland-Morris Disability Questionnaire were tested in 697 patients with low back pain. Internal consistency reliability for the Greek translation of the Oswestry Disability Index and the Roland-Morris Disability Questionnaire reached a Cronbach's alpha coefficient of 0.833 and 0.885 respectively. Face validity and content validity were ensured. Concurrent

validity was assessed using a six-point pain scale as a criterion. The correlation of both scales was significant. The Greek translation of these disability questionnaires provided reliable and valid instruments for the evaluation of Greek-speaking patients with low back pain.

Low back pain is a very common medical problem with a great impact on health and social services and a patient's quality of life.<sup>10,28,33,39</sup> Low back pain is considered an exponentially increasing cause for work absenteeism and one of the most frequent chronic health problems affecting the adult population.<sup>8,41</sup> Numerous therapies have been investigated and applied with questionable success regarding recurrence or persistence of low back symptoms.<sup>15,40</sup> These treatment setbacks have led to a broader perspective of low back pain etiology and risk factors, incorporating psychologic condition, job satisfaction, and socioeconomic status.<sup>11,20,29,32,43</sup> This result can be partially attributed to the impact of the gate-control theory described by Melzack and Wall.<sup>30</sup> Psychologic factors have been associated with chronic and acute low back pain and as many as one in six new episodes of low back pain in the general population is regarded as being related to a previous psychologic distress incidence.<sup>9,11,19</sup> Furthermore, the wide

From the \*1st Orthopaedic Department of Athens University, Medical School, Athens, Greece; and the \*\*Relax Palace Elderly Care Unit, Maroussi, Greece.

Reprint requests to Petros J. Boscainos, MD, 47, Aetorachis Str., GR-11141 Athens, Greece. Phone: 30-210-292-5056; Fax: 30-210-292-5056; E-mail: pbosc@panafonet.gr.

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variation of low back pain severity between patients with the same diagnosis, the difficulty in diagnosing a somatic cause of pain in most patients, and the discordance of symptoms with imaging findings has led to the assessment of subjective disability and objective assessment of physical impairment.<sup>7,44,45</sup> Various physical activities have been regarded as related to functional status and possible resulting disability.<sup>6</sup>

The need for a condition-specific health disability questionnaire for use in everyday clinical practice, for an outcome measurement of various treatment modalities and for research purposes, has been recognized by several authors.<sup>16,31,35,37</sup> Within this context, many psychologic tests, disability scaling systems, and pain drawings have been used for the evaluation of patients experiencing low back pain.<sup>10,13,24,34,36,42</sup> Psychometric factors related to symptoms and expressions of disability in each patient may exist within these tests. The isolation of such factors may lead to additional understanding of the assessment performed by such tests.

However, the use of outcome measures in different countries and cultural groups must follow certain guidelines for translation and cross-cultural adaptation.<sup>3</sup> The translation of such an instrument must be tested for its reliability and validity to be applied and to enable comparability of data.<sup>46</sup>

The Oswestry Disability Index<sup>16</sup> and the Roland-Morris Disability Questionnaire<sup>37</sup> are two disability questionnaires most commonly used as outcome measures in patients with low back pain.<sup>5,14</sup> Both instruments were introduced in the early 1980s and since then they have been widely applied, modified, and translated.<sup>16,17,36,37</sup> As in most cases, these questionnaires were developed in English-speaking countries. Despite their context differences, Oswestry Disability Index and Roland-Morris Disability Questionnaire have been tested in their original versions for their reliability and validity and for their responsiveness.<sup>36</sup> Moreover, both scales are highly correlated with each other and have similar internal consisten-

cies.<sup>27,36</sup> However, they have shown different distributions of scores at various levels of disability and have shown different abilities in detecting change in the more seriously disabled patients.<sup>17</sup> These instruments do not emphasize social and psychologic aspects, whose roles in low back pain have been investigated, for this would additionally complicate the scoring of the scales.<sup>11,20,32</sup> They are both short and simple to complete (Oswestry Disability Index has 10 items and Roland-Morris Disability Questionnaire has 24 items) and also to score, and they do not allow interobserver variations. These reasons, in addition to the lack of a reliable and valid instrument in the Greek language, led us to prepare and test the Greek translations of the Oswestry Disability Index and Roland-Morris Disability Questionnaire.

## MATERIALS AND METHODS

### Preparing the Translation

Greek-speaking people in Greece are a homogeneous group with no significant variations in the use of words for the description of a meaning. However, regional variations exist,<sup>23</sup> and an effort was made to use standard Greek in the translation text, avoiding colloquialism and idiomatic phrasing. A careful methodology of the translations was followed, to avoid language and cultural infiltration in the translation of the questionnaires, that could produce a result with different psychometric properties. Two independent translators prepared the Greek translation of the English versions of the Oswestry Disability Index (Version 1.0) and Roland-Morris Disability Questionnaire. One of the translators was an orthopaedic surgeon and was informed of the concept of the questionnaire and the other was a professional translator who was uninformed of the project. The translators and one of the authors (GS) compared both translations and reached a consensus. A back translation then was done by two independent, bilingual (English and Greek) translators, who were unaware of the original English versions and application of the questionnaires. The final Greek versions were produced by the forward and back translators and by two of the authors (GS and KP).

## Testing the Translation

The Greek versions of the Oswestry Disability Index and Roland-Morris Disability Questionnaire were completed by 20 patients with low back pain who were examined in the outpatient clinic in the presence of a nurse who was informed of the project. Their comments on difficulty in completing the questionnaire or understanding the text were asked. The English to Greek translators and two of the authors (GS and KP) made minor revisions based on the patients' comments, primarily on the gender of adjectives, which exist in the Greek language.

## Patients

In a 5-year period, 697 patients with low back pain who were referred to the outpatient clinic of our institution, were asked to enroll in the study. Verbal and written consent was obtained. Each patient's information and history was filed with the completed Greek translations of the Oswestry Disability Index (Appendix 1) and Roland-Morris Disability Questionnaire (Appendix 2). Two physicians of the department, who had no contact with the patients in the study, scored their responses, and the results were analyzed statistically. To evaluate the impact of translation and cross-cultural adaptation of the Greek versions, validation of the translated questionnaires was done using a six-point pain rating scale as described by Roland and Morris.<sup>37</sup> The patients also completed this scale at the same visit. The average age of the patients was 45.9 years (range, 15–80 years) and 235 of the patients were males. Table 1 summarizes the demographic characteristics of the study population. Patients with low back pain (acute or chronic) who use Greek as a mother language were included in the study. Patients with a reported psychiatric history (hospitalization and medication) were excluded from the study.

## Reliability

The internal consistency reliability of each scale was calculated. The internal consistency reliability involves the relationship of the items in a test.<sup>25</sup> It is used in psychometrics to ensure that all test items measure the same variable. Internal consistency reliability is another way to estimate validity. According to classic psychometric theory, a test that measures what it is intended to measure has high internal consistency reliability. High reliability of a test however, does not ensure the test's validity.<sup>1</sup>

Internal consistency reliability is measured in Cronbach alpha coefficients that range from 0 to 1. The higher the coefficient value, the higher the reliability and the lower the standard error of measurement.<sup>25</sup>

## Validity

### *Face Validity*

Face validity is concerned with whether a measurement seems to be assessing the intended parameters. This is necessary in some cases because it increases the motivation of the patient.<sup>38</sup> In the current study, translation of the questionnaires seemed to be valid and the instruments were well accepted by the patients. The layout of the questionnaires and clear structure and clarity of the questions enhanced their face validity.

### *Content Validity*

A measurement is considered to have content validity when it samples all the aspects of what needs to be studied.<sup>2</sup> According to Kline,<sup>26</sup> this is the most desirable form of validity and it should be supported by predictive or concurrent validity. In the current study, translation of the instruments was evaluated by orthopaedic surgeons and a psychometrician and the instruments were found to contain the necessary elements for creation of an accurate impression of the degree of disability. Questions pertaining to pain, walking, lifting weights, personal care, and bed-rest were considered as such.

### *Concurrent Validity*

This is the case when a measurement correlates highly with a criterion test or with an assessment of a specialist in the field.<sup>18,21,26</sup> To measure concurrent validity all patients were asked to complete a six-point pain rating scale as described by Roland and Morris.<sup>37</sup> The results on this scale were used as a criterion to be correlated to Oswestry Disability Index and Roland-Morris Disability Questionnaire results.

## RESULTS

The demographic data of the study population are shown in Table 1. No difficulty in doing the questionnaires and the six-point pain rating scale was recorded. Table 1 also includes the mean scores of the Oswestry Disability Index,

**TABLE 1. Demographic and Clinical Characteristics of Study Population**

Demographic and Clinical Characteristics	Patients (n = 697)
Gender (female/male)	462/235
Age (years)*	43.2 ( $\pm$ 14.2) range, 15–80
ODI score*	16.9 ( $\pm$ 9.9)
RDQ score*	9.8 ( $\pm$ 5.9)
Six-point pain scale score*	3.9 ( $\pm$ 1.6)

\*Mean  $\pm$  standard deviation

ODI = Oswestry Disability Index; RDQ = Roland-Morris Disability Questionnaire

Roland-Morris Disability Questionnaire, and six-point pain scale. The mean score of the Oswestry Disability Index was 16.9 (standard deviation,  $\pm$  9.9), the Roland-Morris Disability Questionnaire was 9.8 (standard deviation,  $\pm$  5.9), and the six-point pain scale was 3.9 (standard deviation,  $\pm$  1.6).

Internal consistency reliability for the Greek translation of the Oswestry Disability Index reached a Cronbach's alpha coefficient of 0.833 ranging from 0.803 (Questions 9 and 10) to 0.872 (Question 3). Internal consistency reliability for the Greek translation of the Roland-Morris Disability Questionnaire reached a Cronbach's alpha coefficient of 0.885 ranging from 0.877 (Questions 1, 9, and 23) to 0.886 (Question 5). Both values are high indicating that the standard error of measurement is low. Cronbach's alpha coefficient for the Oswestry Disability Index and Roland-Morris Disability Questionnaire are shown in Tables 2 and 3, respectively. These tables also include the alpha values of each item, for when the item is deleted to compare them with the overall Cronbach's alpha coefficient of each scale.

Concurrent validity of the Oswestry Disability Index and Roland-Morris Disability Questionnaire Greek translations was assessed with their correlation to the six-point pain scale. The results are shown in Table 4. The correlation of the Oswestry Disability Index with the six-point pain rating scale produced a Spearman's rho value of 0.835 ( $n = 697$ ;  $p < 0.0005$ ).

**TABLE 2. Internal Consistency Reliability Testing for the Greek Translation of the Oswestry Disability Index**

Overall ODI* Alpha Coefficient = 0.833	Alpha Coefficient if Question Removed
Question 1	0.826
Question 2	0.811
Question 3	0.872
Question 4	0.807
Question 5	0.816
Question 6	0.813
Question 7	0.825
Question 8	0.806
Question 9	0.803
Question 10	0.803

\*ODI = Oswestry Disability Index

**TABLE 3. Internal Consistency Reliability Testing for the Greek Translation of the Roland-Morris Disability Questionnaire**

Overall RDQ* Alpha Coefficient = 0.885	Alpha Coefficient if Question Removed
Question 1	0.877
Question 2	0.884
Question 3	0.878
Question 4	0.879
Question 5	0.886
Question 6	0.879
Question 7	0.883
Question 8	0.879
Question 9	0.877
Question 10	0.880
Question 11	0.881
Question 12	0.882
Question 13	0.881
Question 14	0.882
Question 15	0.884
Question 16	0.880
Question 17	0.881
Question 18	0.882
Question 19	0.883
Question 20	0.878
Question 21	0.880
Question 22	0.881
Question 23	0.877
Question 24	0.878

\*RDQ = Roland-Morris Disability Questionnaire

**TABLE 4. Correlation of Scores Obtained from the Greek Translations of the Oswestry Disability Index, the Roland-Morris Disability Questionnaire, and the Six-Point Pain Rating Scale (Spearman's rho Correlation Coefficient Values)**

Scale	ODI Score	RDQ Score	6-Point Pain Rating Scale Score
ODI score	1.000	0.729*	0.865*
RDQ score	0.729*	1.000	0.835*
6-point pain rating scale score	0.865*	0.835*	1.000

\*Correlation is significant ( $p < 0.0005$ )

ODI = Oswestry Disability Index; RDQ = Roland-Morris Disability Index

The correlation of the Oswestry Disability Index with the six-point pain rating scale produced a Spearman's rho value of 0.865 ( $n = 697$ ;  $p < 0.0005$ ). The correlation of the Oswestry Disability Index and Roland-Morris Disability Questionnaire produced a Spearman's rho value of 0.729 ( $n = 697$ ;  $p < 0.0005$ ).

## DISCUSSION

Condition specific instruments capable of assessing disability and measuring the outcome of applied treatment are a necessity in patients with low back pain. Two of the most widely used questionnaires are the Oswestry Disability Index and Roland-Morris Disability Questionnaire. Both questionnaires are short, easily comprehended, and simple to complete. The low back pain studies in Greece lacked reliable and valid assessment instruments. The process for translation and testing of Oswestry Disability Index and Roland-Morris Disability Questionnaire is discussed.

Independent forward and back translators prepared the Greek questionnaires and a committee consisting of the translators and two authors produced the final versions. Initially, 20 Greek-speaking patients with low back pain completed the translated versions. Their remarks on comprehension and ease to complete were used for minor revisions on the questionnaires. In this way, face and content validity of the translated instruments was regarded as satisfactory for the patient population with low back pain. More sophisticated methods of assessing face and content validity of the original (English) versions of the Oswestry

Disability Index and Roland-Morris Disability Questionnaire were done and although certain authors have published contradictory results, they could be used to further address face and content validity of the Greek versions.<sup>36</sup> Even as such, the Greek translations appear to sample important aspects of disability in patients with low back pain.

Although the authors who developed the original (English) versions reported on test-retest correlation, test-retest reliability was not investigated in our study. More specifically, Fairbank et al<sup>16</sup> reported a 24-hour interval and Roland and Morris<sup>37</sup> mentioned an even shorter period. In a recent article, Roland and Fairbank said such a small interval may include a memory effect and decreased correlation of score as the time interval lengthens.<sup>36</sup> There is difficulty in interpreting test-retest correlations in long periods as low back pain symptoms may be altered and influence such an assessment.<sup>17</sup> Roland and Fairbank<sup>36</sup> clarified this issue stating that "the concept of test-retest reliability is somewhat doubtful for an instrument that has been designed to pick up short-term changes in a condition that is itself notoriously changeable".

The standardized mean values of the Roland-Morris Disability Questionnaire scores were higher than those of the Oswestry Disability Index scores (Table 1). This was reported by other authors and has been attributed to the higher sensitivity of the Roland-Morris Disability Questionnaire in detecting changes in patients with minor disabilities.<sup>4</sup>

To ensure the reliability of the Greek versions of the Oswestry Disability Index and Roland-Morris Disability Questionnaire, the

internal consistency reliability was calculated from the questionnaires of 697 patients with low back pain. Internal consistency reliability was measured in Cronbach's alpha coefficients. The scores measured in the Oswestry Disability Index and Roland-Morris Disability Questionnaire (0.833 and 0.885, respectively) show that the translated versions are reliable with a low standard error of measurement. This is an indication that both scales measure the intended attributes.<sup>25</sup> The Oswestry Disability Index's internal consistency reliability is similar to those reported by other authors who used the original (English) version.<sup>17</sup> As far as the Roland-Morris Disability Questionnaire is concerned, Roland and Fairbank<sup>36</sup> recommended a range of 0.7 to 0.9 and the Greek version of the Roland-Morris Disability Questionnaire has an internal consistency within this range and similar to those reported by other authors. As shown in Tables 2 and 3, Cronbach's alpha coefficient values, in the case of a question being deleted, are comparable to the overall Cronbach's alpha coefficient of each of the two scales. This shows that the structure of both translated instruments is solid and closely focused on expressions of disability in patients with low back pain.

Concurrent validity was assessed with the use of a six-point pain rating scale, described by Roland and Morris.<sup>37</sup> The score on this scale was used as a criterion of validation of both translated instruments.<sup>26</sup> Table 4 shows the correlation done for this purpose. The translated Oswestry Disability Index and Roland-Morris Disability Questionnaire are highly correlated with the six-point pain rating scale. Moderate to relatively high correlations of both instruments with various pain scales have been reported by other authors.<sup>4,22</sup>

The correlation of the Oswestry Disability Index and Roland-Morris Disability Questionnaire with various other tests has been assessed as a measure of construct validity. Construct validity means that an instrument relates to other tests or measures in a way one would expect.<sup>5</sup> Construct validity is based on the logical relationships among variables and never is complete but it is cumulative over the number

of studies that take place.<sup>2,12,38</sup> Construct validity is a more general notion than other forms of validity and, accordingly, there are more ways of assessing it. In fact, all the previously mentioned forms of validity may contribute to construct validity.

The Greek translations of the Oswestry Disability Index and Roland-Morris Disability Questionnaire are highly correlated with similar internal consistencies as the English versions.<sup>36</sup> Therefore, both scales measure overall functional disability regardless of spine disease and level of severity. More studies with the Greek translations of the Oswestry Disability Index and Roland-Morris Disability Questionnaire need to focus on their sensitivity with specific spinal conditions and the instruments' ability to discriminate changes of functional status at different levels of severity as has been reported for the original (English) versions. Moreover, the factorial structure of these instruments to assess underlying parameters of disability infiltrating both scales needs to be investigated. We currently are in the process of determining such parameters that can be used to evaluate severity of symptoms and disability in patients with low back pain, to control the construct validity of translations and, finally, to lead to a possible isolation of universal functional disability indices, despite language and cultural diversity, when compared with relevant parameters in other translations.

The Greek translations of the Oswestry Disability Index and Roland-Morris Disability Questionnaire provide reliable and valid instruments for evaluation of Greek-speaking patients with low back pain. The psychometric properties of the original versions are expected to infiltrate the Greek versions. Additional studies of the Oswestry Disability Index's and Roland-Morris Disability Questionnaire's possible relationship with other scaling systems on specific patient populations and comparison of the findings of different language versions of the Oswestry Disability Index and Roland-Morris Disability Questionnaire will contribute to better understanding of these instruments and will enhance their construct validity.

Ερώτηση 1<sup>η</sup>: Σχετικά με την ένταση του πόνου

Μπορώ να αντέξω τον πόνο που έχω, χωρίς να παίρνω παυσίπονα.

Ο πόνος είναι ισχυρός, αλλά τον αντιμετωπίζω χωρίς να παίρνω παυσίπονα.

Τα παυσίπονα με ανακουφίζουν τελείως από τον πόνο.

Τα παυσίπονα με ανακουφίζουν μερικώς από τον πόνο.

Τα παυσίπονα με ανακουφίζουν ελάχιστα από τον πόνο.

Τα παυσίπονα δεν έχουν επίδραση στον πόνο και δεν τα χρησιμοποιώ.

Ερώτηση 2<sup>η</sup>: Σχετικά με την προσωπική φροντίδα (πλύσιμο ή ντύσιμο κλπ.)

Μπορώ να περιποιηθώ τον εαυτό μου χωρίς να προκαλείται περισσότερος πόνος.

Μπορώ να περιποιηθώ τον εαυτό μου, αλλά αυτό προκαλεί περισσότερο πόνο.

Η περιποίηση του εαυτού μου είναι επώδυνη και είμαι αργός(-ή) και προσεκτικός(-ή).

Χρειάζομαι κάποια βοήθεια αλλά καταφέρνω τα περισσότερα σχετικά με την περιποίηση του εαυτού μου.

Χρειάζομαι βοήθεια κάθε μέρα στα περισσότερα θέματα σχετικά με την περιποίηση του εαυτού μου.

Δεν ντύνομαι, πλένομαι με δυσκολία και μένω στο κρεβάτι.

Appendix 1. Greek version of the Oswestry Disability Index (*continues*)

Ερώτηση 3<sup>η</sup>: Σχετικά με την άρση βάρους

Μπορώ να σηκώσω βαριά αντικείμενα χωρίς περισσότερο πόνο.

Μπορώ να σηκώσω βαριά αντικείμενα αλλά αυτό προκαλεί περισσότερο πόνο.

Δεν μπορώ να σηκώσω βαριά αντικείμενα από το πάτωμα, αλλά μπορώ από το τραπέζι.

Δεν μπορώ να σηκώσω βαριά αντικείμενα, αλλά μπορώ ελαφρά ή μέτρια βάρη.

Μπορώ να σηκώσω μόνο ελαφρά βάρη.

Δεν μπορώ να σηκώσω ή να μεταφέρω τίποτα απολύτως.

Ερώτηση 4<sup>η</sup>: Σχετικά με τη βάρδιση

Ο πόνος δεν με εμποδίζει να βαδίσω οποιαδήποτε απόσταση.

Ο πόνος με εμποδίζει από το να περπατήσω περισσότερο από 2 χιλιόμετρα περίπου.

Ο πόνος με εμποδίζει από το να περπατήσω περισσότερο από ένα χιλιόμετρο.

Ο πόνος με εμποδίζει από το να περπατήσω περισσότερο από μισό χιλιόμετρο.

Μπορώ να περπατήσω μόνο χρησιμοποιώντας μπαστούνι ή πατερίτσες.

Είμαι στο κρεβάτι τον περισσότερο χρόνο και πρέπει να συρθώ για να πάω στην τουαλέτα.

Appendix 1. Greek version of the Oswestry Disability Index (*continues*)



Ερώτηση 5<sup>η</sup>: Σχετικά με το κάθισμα

Μπορώ να καθίσω σε οποιαδήποτε καρέκλα για όση ώρα θέλω.

Μπορώ να καθίσω στην αγαπημένη μου καρέκλα για όση ώρα θέλω.

Ο πόνος με εμποδίζει από το να κάθομαι περισσότερο από μία ώρα.

Ο πόνος με εμποδίζει από το να κάθομαι περισσότερο από 30 λεπτά.

Ο πόνος με εμποδίζει από το να κάθομαι περισσότερο από 10 λεπτά.

Ο πόνος με εμποδίζει εντελώς από το να κάθομαι.

Ερώτηση 6<sup>η</sup>: Σχετικά με την όρθια στάση

Μπορώ να κάθομαι όρθιος(-α) όση ώρα θέλω χωρίς περισσότερο πόνο.

Μπορώ να κάθομαι όρθιος(-α) όση ώρα θέλω αλλά έχω περισσότερο πόνο.

Ο πόνος με εμποδίζει από το να στέκομαι όρθιος(-α) περισσότερο από μία  
ώρα.

Ο πόνος με εμποδίζει από το να στέκομαι όρθιος(-α) περισσότερο από 30  
λεπτά.

Ο πόνος με εμποδίζει από το να στέκομαι όρθιος(-α) περισσότερο από 10  
λεπτά.

Ο πόνος με εμποδίζει εντελώς από το να στέκομαι όρθιος(-α).

Appendix 1. Greek version of the Oswestry Disability Index (*continues*)

Ερώτηση 7<sup>η</sup>: Σχετικά με τον ύπνο

Ο πόνος δεν με εμποδίζει από το να κοιμηθώ καλά.

Μπορώ να κοιμηθώ καλά μόνο παίρνοντας φάρμακα.

Ακόμα και αν πάρω φάρμακα, έχω λιγότερες από έξι ώρες ύπνου.

Ακόμα και αν πάρω φάρμακα, έχω λιγότερες από τέσσερις ώρες ύπνου.

Ακόμα και αν πάρω φάρμακα, έχω λιγότερες από δύο ώρες ύπνου.

Ο πόνος με εμποδίζει εντελώς από το να κοιμηθώ.

Ερώτηση 8<sup>η</sup>: Σχετικά με τη σεξουαλική ζωή

Η σεξουαλική μου ζωή είναι φυσιολογική και δεν μου προκαλεί περισσότερο πόνο.

Η σεξουαλική μου ζωή είναι φυσιολογική αλλά μου προκαλεί κάποιο περισσότερο πόνο.

Η σεξουαλική μου ζωή είναι σχεδόν φυσιολογική αλλά μου προκαλεί πολύ πόνο.

Η σεξουαλική μου ζωή είναι σοβαρά περιορισμένη λόγω του πόνου.

Η σεξουαλική μου ζωή είναι σχεδόν ανύπαρκτη λόγω του πόνου.

Ο πόνος εμποδίζει εντελώς τη σεξουαλική ζωή.

Appendix 1. Greek version of the Oswestry Disability Index (*continues*)

Ερώτηση 9<sup>η</sup>: Σχετικά με την κοινωνική ζωή

Η κοινωνική μου ζωή είναι φυσιολογική και δεν μου προκαλεί περισσότερο πόνο.

Η κοινωνική μου ζωή είναι φυσιολογική αλλά αυξάνει το βαθμό του πόνου.

Δεν μπορώ να συμμετέχω σε πιο ενεργητικές δραστηριότητες όπως π.χ. το τένις.

Ο πόνος περιορίζει την κοινωνική μου ζωή και δεν βγαίνω έξω τόσο συχνά.

Ο πόνος περιορίζει την κοινωνική μου ζωή στο σπίτι.

Δεν έχω κοινωνική ζωή λόγω του πόνου.

Ερώτηση 10<sup>η</sup>: Σχετικά με τα ταξίδια

Μπορώ να ταξιδεύω οπουδήποτε χωρίς πόνο.

Μπορώ να ταξιδεύω οπουδήποτε αλλά αυτό μου προκαλεί περισσότερο πόνο.

Ο πόνος είναι ισχυρός αλλά τα καταφέρνω να ταξιδεύω περισσότερο από δύο ώρες.

Ο πόνος με περιορίζει στο να κάνω ταξίδια μικρότερα της μίας ώρας.

Ο πόνος με περιορίζει σε μικρά απαραίτητα ταξίδια μικρότερα των 30 λεπτών.

Ο πόνος με εμποδίζει από το να ταξιδεύω (εκτός από το να πηγαίνω στο γιατρό μου).

*(continued)* Appendix 1. Greek version of the Oswestry Disability Index

1. Μένω στο σπίτι τον περισσότερο χρόνο λόγω της μέσης μου.
2. Αλλάζω συχνά θέσεις προσπαθώντας να βρω πιο άνετη θέση για τη μέση μου.
3. Περιπατώ πιο αργά από ότι συνήθως λόγω της μέσης μου.
4. Λόγω της μέσης δεν κάνω καμία από τις εργασίες που κάνω συνήθως στο σπίτι.
5. Λόγω της μέσης μου χρησιμοποιώ την κουπαστή της σκάλας για να ανέβω τη σκάλα.
6. Λόγω της μέσης μου ξαπλώνω για ξεκουραστή περισσότερο συχνά.
7. Λόγω της μέσης μου πρέπει να στηριχτώ σε κάτι για να σηκωθώ από μία αναπαυτική καρέκλα.
8. Λόγω της μέσης προσπαθώ να βάζω άλλους ανθρώπους να κάνουν πράγματα για μένα.
9. Ντύνομαι περισσότερο αργά από ότι συνήθως λόγω της μέσης μου.
10. Στέκομαι όρθιος για μικρά χρονικά διαστήματα λόγω της μέσης μου.
11. Λόγω της μέσης προσπαθώ να μη σκύβω ή να μη γονατίζω.
12. Το βρίσκω δύσκολο να σηκωθώ από μία καρέκλα λόγω της μέσης μου.
13. Η μέση πονάει σχεδόν την περισσότερη ώρα.
14. Το βρίσκω δύσκολο να γυρίσω πλευρό στο κρεβάτι λόγω της μέσης μου.
15. Η όρεξή μου δεν είναι πολύ καλή λόγω του πόνου της μέσης μου.
16. Έχω πρόβλημα να φορέσω τις κάλτσες μου λόγω του πόνου στη μέση μου.
17. Περιπατώ μόνο μικρές αποστάσεις λόγω του πόνου της μέσης μου.

Appendix 2. Greek version of the Roland-Morris Disability Questionnaire (*continues*)

18. Κοιμάμαι λιγότερο καλά λόγω του πόνου της μέσης μου.
19. Λόγω του πόνου της μέσης μου ντύνομαι με βοήθεια από κάποιον άλλο.
20. Κάθομαι τη περισσότερη διάρκεια της ημέρας λόγω της μέσης μου.
21. Αποφεύγω δουλειές στο σπίτι λόγω του πόνου της μέσης μου.
22. Λόγω του πόνου της μέσης μου είμαι περισσότερο ευερέθιστος και κακοδιάθετος με τους ανθρώπους από ότι συνήθως.
23. Λόγω της μέσης ανεβαίνω και κατεβαίνω σκάλες περισσότερο αργά από ότι συνήθως.
24. Μένω στο κρεβάτι την περισσότερη ώρα, λόγω της μέσης μου.

(continued) Appendix 2. Greek version of the Roland-Morris Disability Questionnaire

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