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Translation, cross-cultural adaptation, reliability and validity of the Turkish version of the Western Ontario Meniscal Evaluation Tool (WOMET)

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Abstract
Purpose The Western Ontario Meniscal Evaluation Tool (WOMET) is a questionnaire designed to evaluate quality of life related to the health (HRQOL) of patients with meniscus pathology. The purpose of this study was to translate and culturally adapt the WOMET into Turkish, and thereby to determine the reliability and validity of the translated version.
Methods The WOMET was translated into Turkish in accordance with the stages recommended by Guillemin. Ninety-six patients [35 male, 61 female; mean age: 43.6 ± 11.7 (23–71) years] with meniscal pathology were included in the study. The WOMET was completed twice at 3–7-day intervals. The inter-rater correlation coefficient was used for reliability, and Cronbach's α was used for internal consistency. Patients were asked to answer the Lysholm knee scale and the short form-36 (SF-36) for the validity of the estimation. The distribution of ceiling and floor effects was determined.
Results Mean and standard deviation of the first and second evaluations of the total WOMET were 1,048.9 ± 271.6 and 1,000.4 ± 255.2 ($p = 0.03$), respectively. The test–retest reliability of the total score, physical function, sports/work/lifestyle and emotion domains were 0.88, 0.78, 0.80 and 0.85, respectively. Cronbach's α was 0.89. WOMET was most strongly related to the physical function scale and the physical component score (ρ 0.54, ρ 0.60, respectively; $p < 0.001$). The weakest correlations between the WOMET and the SF-36 were for the mental component score and the emotional role functioning (ρ 0.11, ρ 0.03, respectively). We observed no ceiling and floor effects of the overall WOMET score, but 36.5 % of the patients showed floor effect in the question of "numbness", and 40.6 % of the patients showed ceiling effect in the question of "consciousness".
Conclusion The Turkish version of the WOMET is valid and reliable. It can therefore be used for HRQOL of patients with meniscal pathology.
Level of evidence II.

Keywords Meniscus pathology · Knee outcomes · Reliability · Validity

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Introduction

The meniscus injuries are the second most common injury to the knee, with an incidence of 12–14 %—a prevalence of 61 cases per 100,000 persons [16, 25]. Knee disorders are frequently associated with pain with various levels of activity limitations and participation restrictions. Meniscal injuries are described in two major categories: traumatic and degenerative [18, 21]. Traumatic lesions normally occur in younger sports-active individuals, with or without

associated cruciate ligament injury [7]. Meniscal tears can be treated conservatively or surgically. Surgical treatment can be partial–total meniscectomy or surgical suture [8].

Many patient-reported outcome instruments have been developed for assessment of knee injuries such as the Lysholm Knee Scale, Cincinnati Knee Rating Scale, IKDC Subjective Knee Form and the Knee Injury and Osteoarthritis Outcome Score (KOOS) [1, 10, 23, 27]. There is, however, no consensus as to which is the best instrument to measure the patient-reported outcome for individuals with a variety of knee injuries/conditions. In general, the patient-reported outcome measures are classified into two groups: general health and disease or joint specific. Before using an outcome measurement in a society in which the outcome measure was developed, the outcome measure should be translated and culturally adapted. This is because the majority of these scores show the characteristics of the language and social culture of the society in which they were established.

The Western Ontario Meniscal Evaluation Tool (WOMET) is a disease-specific measurement tool designed to evaluate health-related quality of life (HRQOL) in patients with meniscal pathology [13]. Only the Lysholm Knee Scale and the IKDC Subjective Knee Form have been specifically validated for patients with meniscal injury [2, 3]. However, the WOMET is the first meniscal pathology-specific HRQOL instrument to measure the symptoms most relevant to patients with meniscal tear [12]. The WOMET has only been translated into Finnish.

Because of the language problems and lack of validated translations, the use of patient-reported outcome measures that are developed in English are limited to English-speaking countries. To expand the use of a patient-reported outcome measure, it needs to be translated into other languages, and culturally adapted to the countries where it will be used. Additionally, the psychometric properties of the translated version of the patient-reported outcome need to be compared with the psychometric properties of the original version of the outcome measure. Some of the patient-reported outcome measures for the knee have been translated into Turkish and psychometrically tested [4, 6, 14, 20, 28], but none of these have been specifically developed to evaluate HRQOL in patients with meniscal pathology. Taner et al. [26] found that the WOMET is the best outcome measure of the 11 knee-specific instruments used for evaluating meniscal tears.

The purpose of this study was to translate the English version of WOMET into Turkish and investigate the reliability and validity of the translated version.

Materials and methods

Translation and cultural adaptation

The WOMET was translated into Turkish and culturally adapted in accordance with stages recommended by Guillemin [9]. Two Turkish individuals, with a good savant of English were responsible for the literary and conceptual translation of the WOMET. The informed translator was a medical doctor, and the uninformed translator was a teacher. Both translators' mother tongue was Turkish; however, they were fluent in English. The translations were completed independently. Both translations were compared and reviewed by a bilingual person who highlighted any conceptual errors or inconsistencies in the translations, in order to establish the first Turkish translation. Once the first Turkish translation was determined, two native English speakers with a good command of Turkish separately translated the finalised Turkish translation back into English. Both translators were unaware of the purpose of the study and had no access to the original score. The back-translated version of the WOMET was compared with the initial English version of the WOMET by a committee consisting of four translators and the original author. The committee approved the Turkish version of the WOMET. Once approved, the pilot test was conducted on 20 patients to determine comprehension of the Turkish version.

Subjects and procedures for assessment of reliability and validity

Ninety-six patients suffering from a variety of knee complaints were recruited from the Bezmialem Vakif University, Department of Orthopaedics and Traumatology and Bayındır Hospital, Department of Orthopaedics and Traumatology between March 2011 and March 2012. The inclusion criteria were as follows:

1. 16 years of age or older
2. The presence of a meniscal tears, meniscal repair or meniscal resection
3. The patients who have the retest assessment.

The exclusion criteria were as follows:

1. Anterior, posterior cruciate ligament or other ligament injuries
2. The presence of articular cartilage damage causing instability
3. Inability to complete the form due to cognitive impairment

4. Illiteracy or lack of understanding of Turkish
5. Other medical comorbidities such as cancer, serious infectious or neurological or musculoskeletal disorders other than the knee condition.

Patients were examined clinically by two experienced knee surgeons (MD, ME). When necessary, radiographs and magnetic resonance imaging (MRI) were performed.

Patient-reported outcome measures

The WOMET is a disease-specific tool designed to evaluate HRQOL in patients with meniscal pathology. The WOMET has 16 items, representing three domains. The physical symptom domain has nine items; the combined domain of sports, recreation, work, and lifestyle has four items; and the emotions domain has three items. The best or least symptomatic score is 0, and the highest and most symptomatic score possible is 1,600. The score may be reported as a total overall score, a total score of each domain, or as a percentage of normal by subtracting the total score from 1,600, dividing by 1,600 and multiplying by 100 [12].

The Lysholm Knee Scale is an 8-item questionnaire originally designed to evaluate patients after anterior cruciate ligament injury. It is scored on a 100-point scale, 0–100, worst to best, with 25 points attributed to pain, 15 to locking, 25 points instability, 10 each to swelling and stair climbing and 5 each for a limp, use of a support, and for squatting [27].

The short-form health survey (SF-36) was used to establish a health profile that consists of eight scaled scores, where each scale was directly transformed into a scale from 0 to 100, in order to identify the patient's physical and mental state. These 8 sections include physical functioning (PF), role limitations due to physical function (RP), bodily pain (BP), general health perceptions (GH), vitality (VH), social function (SF), emotional function (RE), and mental health (MH) [29].

Study procedures

Administration of outcome measures

Patients were asked to complete the Turkish version of the WOMET ("Appendix") and the previously validated Turkish versions of the Lysholm Knee Scale, and SF-36 [4, 13]. The questionnaires were given in random order to the patients. The physical therapists distributed the questionnaires to the patients in waiting room after an appointment with orthopaedic surgeons. The patients were then asked to complete the WOMET within 3–7 days after their first assessment to determine the test–retest reliability. To minimise the risk of short-term clinical change, no treatment was provided during this period. After each patient completed the questionnaire, physical therapists checked for missing responses. Patients who skipped a question on the questionnaire were asked to give the reason. The difficulty in understanding the question or the incompatibility with their problem was noted. Before inclusion in the study group, participants were asked to read and sign an informed consent form, which had been approved by the ethical committee at Bayındır Hospital Research Foundation (IRB study protocol: Bayındır Hospital, TEDEK/BEMSEK-01/11).

Statistical analysis

All statistical analyses were performed with statistical package for the social sciences (SPSS) 17.5 (SPSS Inc, Chicago, IL, USA). This included frequency counts and percentages for nominal variables, the measures of central tendency (means, medians) and the dispersion [standard deviations (SD), ranges] for continuous variables. The Kolmogorov–Smirnov test was used to assess the distribution. The first and second administration of the overall WOMET score, the physical symptom domain, the Lysholm Knee Scale and age were found normally distributed, so mean values were used to describe scores and ages. The rest of the outcomes were not normally distributed, so medians were used for these outcome values. Spearman's correlation coefficient was used for not normally distributed data, and Pearsons' correlation coefficient was used for normally distributed data.

Reliability

Reliability refers to consistency of measurement and includes internal consistency and the test–retest reliability. Internal consistency was assessed using Cronbach's coefficient α and is a measure of the homogeneity of the questions within a questionnaire. An α of 0.7 is considered fair, 0.8 good and 0.9 excellent internal consistency. However, high values are not necessarily desirable because this may indicate redundancy of the questionnaire items. In this study, the patients included in the first administration of the WOMET were used to assess internal consistency.

The test–retest reliability represents a scale's capability of giving consistent results when administered on separate days where an individual's status has remained stable [17]. The outcome measure was applied and then reapplied after a short time (5–14 days). The results were then compared for agreement using an intraclass correlation coefficient (ICC) or kappa [20]. The ICC was used to measure the test–retest reliability of the WOMET. Patients who reported "no change" in their condition between the first and second administration were included in the analysis of the test–retest reliability. The ICC was used to calculate

standard error measurement (SEM), which is an index of measurement precision. The SEM is calculated as the SD of the scores time the square root of (1-ICC). The minimal detectable change (MDC) refers to the minimal amount of change that is within the measurement error. The SEM was used to determine the minimum detectable change at the 95 % limits of confidence ($MDC_{95\ \%}$) and was calculated as the SEM times 1.96 time the square root of 2 [5].

Validity

Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is attempting to measure [11]. In this study, we examined 3 aspects of validity namely construct, convergent/divergent, and content validity. Evidence for construct validity of the Turkish WOMET was provided by determining its relationship with the Lysholm Knee Scale and the physical component score of the short form-36 (SF-36). The PF, RP and PCS domains were used to assess the convergent validity. Evidence for divergent validity was provided by determining the relationships with the MH, RE and MCS domains of the SF-36. Spearman's correlation coefficients and their 95 % confidence intervals were calculated to assess construct and convergent/divergent validity.

Distribution and ceiling and floor effects

Content validity was assessed by the distribution and occurrence of ceiling and floor effects. Ceiling and floor effects of the WOMET at the first and second administrations were assessed by calculating the proportion of the patients scoring the maximum (score of 100) or minimum (score of 0) scores, relative the total number of patients. Descriptive statistics (mean values, SDs, and quartiles) were calculated in order to determine distribution and ceiling/floor effects. Ceiling and floor effects were considered to be relevant if more than 30 % of the subjects experienced them.

Results

Translation process and testing

It was found that several words such as "giving way", "numbness" and "conscious" had a different meanings in the Turkish language or were difficult to translate. Upon discussion with the original author, a consensus was reached on the translation so that the meaning of the questions did not change. The pilot test did not show any difficulty in patients' understanding of these words. The Turkish WOMET can be completed in approximately in 7 min. A total of 96 patients completed all questionnaires in the first and the second assessment for the test–retest reliability. Table 1 illustrates the demographic and clinical characteristics of these patients. Means/medians and SDs for each of the scores, a first and the second administration of the WOMET is provided in Table 2. The duration of symptoms was 23.7 ± 1.2 months.

Table 1 Patient demographics

	n
Female/male	61 (63.5 %)/35 (36.4 %)
Mean age	43.6 ± 11.7
Height/weight/body mass index	169 ± 0 cm/77 ± 11.0 kg/ 26.3 ± 6.01
Education	
Primary school	42 (43.7 %)
High school	20 (20.8 %)
University degree	34 (35.4 %)
Involved knee	
Right knee	77 (80.2 %)
Left knee	16 (16.6 %)
Both knees	3 (3.1 %)
Diagnosis	
Partial or total meniscus tear	61 (63.5 %)
Arthroscopic meniscus repair	10 (10.4 %)
Arthroscopic meniscectomy	15 (15.6 %)
Traumatic/degenerative	23 (24 %)/73 (76 %)
Medial/lateral/both sides	85 (88.5 %), 10 (10.4 %), 5 (5.2 %)
Comorbidities	
Inflammation	7 (6.72 %)
Fracture	8 (6.78 %)
Cardiovascular disease	7 (6.72 %)
Diabetes	16 (15.3 %)
Hypertension	25 (24.0 %)
Other surgery	23 (22.0 %)
Profession	
White colour worker	49 (51.0 %)
Blue colour worker	35 (36.4 %)
Retired	12 (12.5 %)

Reliability

The internal consistency of the first administration of the WOMET was good, with a Cronbach α of 0.89. Mean values of the first and second administration of the subdomains and overall WOMET first administration the Lysholm Knee Scale and were given in Table 2. The mean interval between the two assessments was 4.5 ± 2.2 days. The test–retest reliability of the overall WOMET score, physical function, sports/work/lifestyle and emotions were all found to be good to excellent (Table 2). The SEM and MDC for overall WOMET were found 37.2 and 103.2 respectively.

Table 2 Test–retest reliability of the WOMET

WOMET	Mean/Median ± SD/(range)		Reliability		Original version of WOMET ICC [12]
	*T*1	*T*2	*p*	ICC	
Physical symptoms	519.4 ± 175.8	491.7 ± 166.7	0.001	0.87	0.73
Sports/recreation/work/lifestyle	320 (100–400)	300 (130–400)	0.001	0.80	0.87
Emotions	240 (30–300)	220 (30–300)	0.001	0.82	0.84
Overall WOMET	1,048.9 ± 271.6	1,000.2 ± 255.2	0.001	0.86	0.85
Lysholm Knee Scale	66.8 ± 20.5		0.001	−0.49	0.4–0.65

T1 test 1, *T2* test 2, *ICC* intra-rater correlation coefficient

Table 3 Correlations between SF-36 subscales and overall WOMET: a comparison of our results with the literature

SF-36 subscales	Mean/SD	Overall WOMET score		*p* value
		Present study	Finnish version [24]	
SF-36 (PF)	59.6/27.1	0.54*	0.66	<0.001
SF-36 (RP)	41.4/41.0	0.39*	0.49	<0.001
SF-36 (BP)	40.5/23.7	0.63*	0.57	<0.001
SF-36 (GH)	52.1/20.0	0.30*	0.31	<0.001
SF-36 (VT)	55.5/18.6	0.28*	0.28	n.s
SF-36 (SF)	52.5/29.3	0.53*	0.50	<0.001
SF-36 (RE)	63.4/41.0	0.03	0.18	n.s
SF-36 (MH)	59.9/19.3	0.30*	0.29	0.04
SF-36 (PCS)	37.0/10.9	0.60*	0.68	< 0.001
SF-36 (MCS)	44.8/10.3	0.11	0.05	n.s

PF physical functioning, *RP* physical role functioning, *BP* bodily pain, *GH* general health perceptions, *VT* vitality, *SF* social function, *RE* emotional role functioning, *MH* mental health, *PCS* physical component scale, *MCS* mental component scale

* Significant (<0.05)

Validity

The WOMET demonstrated good correlation ($r = 0.49$) with the Lysholm Knee Scale. The correlation between the WOMET and the SF-36 is displayed in Table 3. The WOMET was most strongly related to the physical function scale and the physical component score (ρ 0.54, ρ 0.60, respectively; $p < 0.001$). The weakest correlations between the WOMET and the SF-36 were for the mental component score and the emotional role functioning (ρ 0.11, ρ 0.03, respectively) (Table 3).

Distribution and ceiling/floor effects

Ceiling and floor effects and the number of items answered were identical during the test and retest examination. None of patients in the overall WOMET score ranged between the minimum or maximum scores. This implies that there are no ceiling and floor effects. However, 36.5 % of the patients showed floor effect in the question of "numbness". There was a ceiling effect of three questions which were presented in Table 4.

Table 4 Floor and ceiling effects

	Floor effect (%)	Ceiling effect (%)
Overall WOMET	0	0
Physical symptoms	0	0
Feeling of giving way or instability	10 (10.4)	3 (3.1)
Pain or soreness after activities	0 (0)	8 (8.3)
Loss of range of motion	1 (1.0)	8 (8.3)
Numbness	35 (36.5)*	0 (0)
Stiffness after rising or sitting	2 (2.0)	6 (6.2)
Weakness	5 (5.2)	11 (11.1)
Swelling	27 (28.1)	5 (5.2)
Sharp pains after full weight bearing	2 (2.0)	11 (11.1)
Cracking, grinding, or popping	11 (11.1)	8 (8.3)
Sports/reaction/work/lifestyle	0 (0)	5 (5.2)
Fear of injury	5 (5.2)	34 (35)[a]
Effect on the ability to participate in activities	3 (3.1)	19 (19.7)
Ability to perform specific skills	2 (2.0)	16 (16.6)
Squatting ability	1 (1.0)	29 (30.2)[a]
Emotions	0 (0)	10 (10.4)
Consciousness of the knee	1 (1.0)	39 (40.6)[a]
Concern about the future of the knee	1 (1.0)	30 (31.2)[a]
Frustration of discouragement	5 (5.2)	21 (21.8)

* The values represent the number and percentage of patients who received the lowest possible score (floor effect)

[a] The values represent the number and percentage of patients who received the highest possible score (ceiling effect)

Discussion

The most important finding of the present study was that the Turkish version of the WOMET demonstrated acceptable levels of reliability and validity to evaluate patient-reported outcome for Turkish speaking individuals with a variety of meniscus pathologies.

The test–retest indicated good-to-excellent reliability for the subscales and the overall WOMET score (Table 2). We used ICC to measure test–retest reliability as in the original version and found the results were similar. However, Sihvonen et al. [24] used the average root-mean-square coefficient of variation to determine a proportionate measure of repeatability, and they also reported acceptable values.

Cronbach's coefficient α is another measure used to assess the repeatability. In this study, Cronbach's α of the overall WOMET had an excellent value of 0.89 which is similar to the original and the Finnish version of the WOMET (Cronbach's $\alpha = 0.92, 0.91$, respectively). The MDC was found to be 103.2. When a patient is measured two or more times with the Turkish WOMET, a change of <103.2 from one time to the next should be considered to reflect measurement error, rather than a true change in the patient's condition.

The correlation coefficient between the overall WOMET and the Lysholm Knee Scale was 0.47, which is considered good. Sihvonen et al. also used the Lysholm Knee Scale for construct validity because it has been validated as a meniscus-specific instrument [2, 3]. They also found a good correlation coefficient value ($r = 0.55$) between the WOMET and the Lysholm Knee Scale in their study. The correlation between the SF-36 score and scores of specific instruments is usually not very strong. This confirms that the SF-36 measures additional aspects of the physical health and provides more comprehensive, but less specific, information about a patient's overall health than condition-specific questionnaires [11]. As expected, the WOMET was more strongly related to concurrent measures of physical function than to concurrent measures of mental function. In this study, the correlation between the Turkish version of the WOMET and the SF-36 subdomains of PF and PCS were higly correlated with the overall WOMET, but correlation values were lower than the Finnish version. The lowest correlation value was found between the WOMET and subdomains of RE and the mental domains of SF-36 (Table 3). While the SF-36 BP values were found to be higher than the Finnish version of the WOMET, the SF-36 SF values were found lower. In the literature, the generic health-related quality of life instrument (15D) was also used to construct validity of the WOMET, and a weak correlation value was found ($r = 0.31$) [24]. This also confirms that the SF-36 and 15D measure additional aspects of physical health and therefore provide more comprehensive, but less specific, information about a patient's overall health than condition-specific questionnaires.

In the assessment of the presence of ceiling and floor effects, we found that the question of "numbness" showed high floor effect. "Numbness" is one of the rare symptoms of the meniscus pathology and usually occurs in post-op meniscus repair. In this study, 10 % of the patients had surgery, so floor effects can be expected of this question. We found high ceiling effects in related to the question of the "consciousness". The patients with meniscus pathology had symptoms such as pain, difficulty with walking and stair climbing in daily living. Therefore, a high ceiling effect can be acceptable for the question of the "consciousness". In the literature, unacceptable floor and ceiling effect was also reported in some of the sub-domains of the Lysholm and IKDC subjective knee score which were used to assess meniscus pathology [2, 3].

The WOMET contains enough questions to reveal the functional status and pain of the patients. Also, the WOMET has some additional questions to evaluate the meniscus-injured knee compared with the Lysholm Knee Scale and IKDC Subjective Knee Form, such as numbness in and around the knee, sharp pain after full weight bearing, and consciousness of the knee. This additional and specific information is thought to be one of the advantages of using the WOMET. While the presented translation has been validated with this preliminary study, the Turkish form needs to be tested in larger and more diverse populations.

The major limitation of the study is that we could not report the responsiveness data which are critical measures to evaluate a patient's change in status. Assessing the responsiveness of instruments determines whether the assumption of constant variance is appropriate. Therefore, future studies are necessary to assess responsiveness and to determine the minimum clinically important differences for the Turkish version of the WOMET, with regards to meniscus injuries that commonly affect the knee.

The clinical relevance of the present study is that this instrument offers an excellent evaluation that can be used for HRQOL for Turkish patients with various meniscus pathologies. This tool was developed solely for meniscus pathologies so that it will be provided to a clinician with more detailed, specific and accurate information concerning the meniscus pathology.

Conclusions

The Turkish translation and culturally adapted version is reliable and valid and can be used as an instrument to assess the functional limitations of Turkish patients with meniscus pathologies.

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Appendix: WOMET diz değerlendirme formu

Bölüm A: Fiziksel Belirtiler

Hastaları Bilgilendirme

Aşağıdaki sorular diz probleminizden dolayı yaşadığınız fiziksel belirtileri dikkate almaktadır. Tüm durumlar için (sorular için), geçen hafta yaşadığınız belirtilerin şiddetini işaretleyiniz (cevabınızı ifade eden puanı işaretleyiniz)

1) Dizinizdeki dengesizlik/kararsızlık ya da boşalma hissinden dolayı ne kadar rahatsız oluyor sunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

2) Aktivitelerden sonra dizinizdeki ağrı veya acıdan dolayı ne kadar rahatsız oluyorsunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

3) Dizinizdeki hareket kaybından dolayı ne kadar rahatsız oluyorsunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

4) Dizinizin etrafındaki his kaybından dolayı ne kadar rahatsız oluyor sunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

5) Sabahları yataktan ilk kalkarken veya uzun süre oturduktan sonra kalkarken dizinizde ortaya çıkan sertlikten dolayı ne kadar rahatsız oluyor sunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

6) Dizinizdeki zayıflıktan (güç kaybından) dolayı ne kadar rahatsız oluyor sunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

7) Dizinizdeki şişlikten dolayı kadar rahatsız oluyor sunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

8) Belli bir zaman içinde tam ağırlıkla bastığınızda dizinizdeki keskin ağrıdan dolayı ne kadar rahatsız oluyor sunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

9) Dizinizdeki çıtırtı, ezilme hissi yada sesten dolayı ne kadar rahatsız oluyor sunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla rahatsız oluyorum	

Bölüm B: Spor/eğlence/iş/yaşam şekli

Hastaları Bilgilendirme

Aşağıdaki sorular geçen hafta dizinizdeki problemden dolayı iş, spor ve eğlenceyle ilgili aktivitelerinizin nasıl etkilendiği ile ilgilidir. Her bir soru için cevabınızı ifade eden puanı işaretleyiniz.

10) İşinize veya spora dönmenizde dizinizi tekrar yaralamak sizi ne kadar korkutuyor ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok korkutuyor	

11) Etkilenmiş olan diziniz, yaralanmadan önceki aktivitelerinize dönme sürenizi ne kadar etkiledi ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok korkutuyor	

12) Etkilenmiş diziniz spor veya işinizin gerektirdiği özel becerilerinizi yapmanızı ne kadar etkiliyor ? (Şayet her ikisi de etkilenmişse, en çok etkilenene göre değerlendiriniz)

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok etkiliyor	

13) Çömelme sırasında ne kadar probleminiz var ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla	

Bölüm C: Duygu durumu

Hastaları Bilgilendirme

Aşağıdaki sorular geçen hafta dizinizdeki problemden dolayı nasıl hissettiğiniz ile ilgilidir. Lütfen cevabınızı ifade eden puanı işaretleyiniz.

14) Dizinizde sorun olduğunun ne kadar farkında sınız ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla	

15) Dizinize gelecekte ne olacağı ile ilgili ne kadar endişeli siniz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç									Çok fazla endişeliyim	

16) Dizinizden dolayı ne kadar hayal kırıklığı duyuyor veya cesaretinizin kırıldığını düşünüyor sunuz ?

0	10	20	30	40	50	60	70	80	90	100
Hiç										Çok fazla

References

1. Barber-Westin SD, Noyes FR, McCloskey JW (1999) Rigorous statistical reliability, validity, and responsiveness testing of the Cincinnati knee rating system in 350 subjects with uninjured, injured, or anterior cruciate ligament-reconstructed knees. Am J Sports Med 27:402–416
2. Briggs KK, Kosher MS, Rodkey WG, Steadman JR (2006) Reliability, validity, and responsiveness of the Lysholm knee score and Tegner Activity Scale for patients with meniscal injury of the knee. J Bone Joint Surg Am 88:698–705
3. Crawford K, Briggs KK, Rodkey WG, Steadman JR (2007) Reliability, validity, and responsiveness of the IKDC score for meniscus injuries of the knee. Arthroscopy 23:839–844
4. Celik D, Coskunsu D, Kilicoglu O (2013) Translation and cultural adaptation of the Turkish Lysholm Knee Scale: ease of use, validity, and reliability. Clin Orthop Relat Res 21:2184–2189
5. De Vet HC, Terwee CB, Bouter LM (2003) Current challenges in clinimetrics. J Clin Epidemiol 56:1137–1141
6. Evcik D, Ay S, Ege A, Turel A, Kavuncu V (2009) Adaptation and validation of Turkish version of the knee outcome survey-activities for daily living scale. Clin Orthop Relat Res 467:2077–2082
7. Englund M (2004) Meniscal tear-a feature of osteoarthritis. Acta Orthop Scand Suppl 75(312):1–45
8. Frizziero A, Ferrari R, Giannotti E, Ferroni C, Poli P, Masiero S (2013) The meniscus tear. State of the art of rehabilitation protocols related to surgical procedures. Muscles Ligaments Tendons J 21:295–301
9. Guillemin F (1995) Cross-cultural adaptation and validation of health measures. Scand J Rheumatol 24:61–63
10. Irrgang JJ, Anderson AF, Boland AL, Harner CD, Kurosaka M, Neyret P, Richmond JC, Shelborne KD (2001) Development and validation of the international knee documentation committee Subjective knee form. Am J Sports Med 29:600–613
11. Irrgang JJ, Marx RG (2007) Clinical outcomes in sport and exercise physical therapies. In: Kolt GS, Synder-Mackler L (eds) Physical therapies in sports and exercise, 2nd edn. Elsevier, Edinburgh, pp 206–219
12. Kirkley A, Griffin S, Whelan D (2007) The development and validation of a quality of life-measurement tool for patients with meniscal pathology: the Western Ontario Meniscal Evaluation Tool (WOMET). Clin J Sport Med 17:349–356
13. Koçyiğit H, Aydemir Ö, Fişek G (1999) Reliability and validity of turkish short form SF-36. Med Treat 12:102–106
14. Kuru T, Dereli EE, Yaliman A (2010) Validity of the Turkish version of the Kujala patellofemoral score in patellofemoral pain syndrome. Acta Orthop Traumatol Turc 44:152–156
15. Landis JR, Koch GG (1977) The measurement of observer agreement for categorical data. Biometrics 33:159–174
16. Majewski M, Susanna H, Klaus S (2006) Epidemiology of athletic knee injuries: a 10-year study. Knee 13:184–188
17. Marx RG, Menezes A, Horovitz L, Jones EC, Warren RF (2003) A comparison of two time intervals for test–retest reliability of health status instruments. J Clin Epidemiol 56:730–735
18. Noble J (1975) Clinical features of the degenerate meniscus with the results of meniscectomy. Br J Surg 62:977–981
19. Nunnally JC, Bernstein IR (1994) Psychometric theory, 3rd edn. McGraw-Hill, New York, NY
20. Paker N, Bugdaycı D, Sabırlı F, Ozel S, Ersoy S (2007) Knee injury and osteoarthritis outcome score: reliability and validation of the Turkish version. Turkiye Klinikleri J Med Sci 27:350–356

21. Poehling G, Ruch DS, Chabon SJ (1990) The landscape of meniscal injuries. Clin Sports Med 9:539–549
22. Pynsent PB (2001) Choosing an outcome measure. J Bone Joint Surg 83:792–794
23. Roos EM, Roos HP, Lohmander LS, Ekdahl C, Beynnon BD (1998) Knee Injury and Osteoarthritis Outcome Score (KOOS)—development of a self-administered outcome measure. J Orthop Sports Phys Ther 28:88–96
24. Sihvonen R, Järvelä T, Aho H, Järvinen TL (2012) Validation of the Western Ontario Meniscal Evaluation Tool (WOMET) for patients with a degenerative meniscal tear: a meniscal pathology-specific quality-of-life index. J Bone Joint Surg Am 16(94):e65
25. Stocker BD, Nyland JA, Caborn DN, Sternes R, Ray JM (1997) Results of the Kentucky high school football knee injury survey. J Ky Med Assoc 95:458–464
26. Taner SM, Dainty KN, Marx RG, Kirkly A (2007) Knee-specific quality-of-life instruments: which ones measure symptoms and disabilities most important to patients? Am J Sports Med 35:1450–1458
27. Tegner Y, Lysholm J (1985) Rating systems in the evaluation of knee ligament injuries. Clin Orthop Relat Res 198:43–49
28. Tüzün EH, Eker L, Aytar A, Daşkapan A, Bayramoğlu M (2005) Acceptability, reliability, validity and responsiveness of the Turkish version of WOMAC osteoarthritis index. Osteoarthr Cartil 13:28–33
29. Ware JE Jr, Sherbourne CD (1992) The MOS 36-item short-form health survey (SF-36). Conceptual framework and item selection. Med Care 30:473–483