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Validity and reliability of the Turkish version of "self-care behaviour scale" in patients with rheumatoid arthritis

Romatoid artritli bireylerde "öz bakım davranışları ölçeğinin" Türkçe geçerlilik ve güvenilirliği

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Abstract

Objective: Rheumatoid arthritis is a chronic disease that requires long-term medication, has several side effects and limits the individual's daily life that may cause self-care deficiency. Therefore, self-care behaviors of the patients should be identified systematically and self-care behaviors should be supported accordingly. This study aimed to analyze whether or not the scale of self-care behavior was a valid and reliable tool to measure self-care behaviors in the Turkish rheumatoid arthritis population.

Methods: The study was conducted between February 1, 2017 - August 30, 2017 in a rheumatology clinic of a university hospital. For language validity, the scale was translated from English and then translated from Turkish to English. For the validity of the items of the translated scale, ten expert opinions were obtained and finalized the scale and consequential form was applied to 119 patients.

Results: Cronbach's Alpha value was found to be 0.675 for internal consistency analysis in accordance with the original values of the scale. Additionally, because of expert opinions, Cronbach's Alpha value obtained by reversely scoring the first three items were 0.558.

Conclusion: Because of the validity and reliability analysis of the Self-Care Behavior scale, it is found that it is a moderately reliable and valid scale for the Turkish society; It is recommended that the items in the scale may cause misunderstandings about patients' self-care, and therefore a Turkish scale that can measure self-care behaviors in a more valid and reliable manner is recommended.

Keywords: Self-care, reliability, validity, rheumatoid arthritis, rheumatology

Öz

Amaç: Romatoid artrit, uzun süreli ilaç tedavisi gerektiren, çeşitli yan etkileri olan, kişinin günlük yaşamını sınırlandırarak kendi kendine bakım eksikliğine neden olabilen kronik bir hastalıktır. Bu nedenle hastaların öz bakım davranışları sistematik bir şekilde belirlenmeli ve buna göre öz bakım davranışları desteklenmelidir. Bu çalışmanın amacı, öz bakım davranışı ölçeğinin Türk romatoid artrit popülasyonunda öz bakım davranışlarını ölçmek için geçerli ve güvenilir bir araç olup olmadığını incelemektir.

Yöntem: Çalışma 1 Şubat 2017 - 30 Ağustos 2017 tarihleri arasında bir üniversite hastanesinin romatoloji kliniğinde gerçekleştirilmiştir. Dil geçerliliği için ölçek İngilizceden çevrilmiş ve sonra Türkçe'den İngilizceye tekrar çevrilmiştir. Çevrilen ölçeğin maddelerinin geçerliliği için on uzman görüşü alınarak ölçeğe son şekli verilmiş ve sonuç formu 119 hastaya uygulanmıştır.

Bulgular: Ölçeğin orijinal değerlerine göre iç tutarlılık analizi için Cronbach's Alpha değeri 0,675 olarak bulunmuştur. Ayrıca uzman görüşleri sonucunda ilk üç maddenin ters puanlanarak elde edilen Cronbach's Alpha değeri 0,558'dir.

Sonuç: *Self-Care Behaviour* ölçeğinin yapılan geçerlik ve güvenirlik analizleri sonucunda Türk toplumu için orta düzeyde güvenilir ve geçerli bir ölçek olduğu saptanmakla birlikte; ölçekte yer alan maddelerin hastaların özbakımları ile ilgili yanlış anlamalara sebep olabileceği ve bu nedenle öz bakım davranışlarını daha geçerli ve güvenilir bir şekilde ölçebilecek Türkçe bir ölçeğin geliştirilmesi önerilmektedir.

Anahtar Kelimeler: Öz bakım, güvenilirlik, geçerlilik, romatoid artrit, romatoloji

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Introduction

Rheumatoid arthritis (RA) is a chronic, autoimmune, inflammatory rheumatic disease of unknown etiology affecting two or more joints and systems.[1] According to a RA prevalence study conducted in 2017, it has been determined between 0.41% and 0.54%. According to the study, an increase was determined in RA prevalence in the last decade.[2] According to a recent RA prevalence study conducted in Turkey, it was determined to be 0.56% for the individuals over the age of 16.[3] The aim of RA treatment is to provide the remission of patients, reduce their pain, prevent complications and side effects, have the individuals perform their daily activities, manage symptoms and prevent the poor prognosis.[4] RA treatment is a long process including the symptom management and effective communication with healthcare professionals and the self-care process. The important matter for the patients in the treatment process is the individual's compliance to treatment. This is because the individuals will have to use drugs continuously after diagnosed. Also, they should comply with the changes in their occupational and daily lives. The compliance includes social support and complementary treatment in addition to medical treatment. It is not right to expect that the individuals comply with all these factors completely. The World Health Organization (WHO) states that the compliance to treatment problems of the individuals with a chronic disease are at a severe level and the compliance to treatment levels of the individuals receiving long-term treatment are less than 50% in the developing countries.[5]

Self-care is described as "all the activities performed by the individuals to continue well-being, life, and health status" and it has been described by Orem, a nursing theoretician, as the activities performed continuously by the individuals, which are under the control of healthcare professionals and in which the individuals exhibit appropriate and intentional behavior by themselves.[6,7] Self-care in RA may be described as being able to administer medication, recognizing/managing side-effects, knowing and managing emergency cases, going for physician checks, performing daily and occupational activities independently, performing the sports activity appropriate for the individual and jointly determined, and complying with the diet offers.

There are some behavior for the patients with RA that will affect the course of the disease and they should and should not perform. But, the people who will control this behavior of the patients are healthcare professionals. In the literature, the deficiencies have mentioned the levels at which self-care behavior performed.[8] There is no self-care behavior scale prepared for the Turkish patients with RA to perform diagnosis. For this reason, it performed a reliability and validity study of the Self-Care Behavior Scale to use for determine the level at which the Turkish patients with RA perform self-care behavior. For this purpose, hypotheses are;

- Self-Care Behavior Scale is a valid tool to measure the level of self-care behavior in Turkish patients with RA.
- Self-Care Behavior Scale is a reliable tool to measure the level of self-care behavior in Turkish patients with RA.

Materials and Methods

Study Design

The study was planned in methodological type to test the reliability and validity of the Self-Care Behavior Scale in the Turkish patient population with RA.

Research Population and Sampling

The study was conducted in the rheumatology outpatient clinic of a university hospital between May 1st and August 30th, 2017. The population of the study was composed of 119 individuals with RA who agreed to participate and complied with the inclusion criteria. The individuals who were followed for more than six months for RA agreed to participate in the study, were over the age of 18, years were without any hearing and mental disability and was able to speak Turkish included in the study. Patients who were pregnant and did not comply with the inclusion criteria were excluded from the study.

Data Collection

Self-Care Behavior Scale, Multi-Dimensional Health Assessment Questionnaire, and Patient Identification Form were used as the data collection tools. The translation from English and Turkish and back translation were performed. For the content validity of the translated scale items, the opinions of 10 experts were received and the scale was put into the final form and this form was applied to the patients.

Patient Identification Form: The Patient Identification Form was prepared by the researchers by the literature support to obtain the socio-demographic data and the data on the disease and disease activity.

Self-Care Behavior Scale (SCBS): The Self-Care Behavior Scale to be tested in terms of reliability and validity, was developed by Morowatisharifabad et al.[9], in 2011. The scale particularly measures the self-care behavior of the patients with RA. The original version of the scale is composed of 17 questions and it includes the answers of never-hardly ever-sometimes-very often-always. In the original version of the scale, there is only one negatively scored question (4th question).

The content of the scale is composed of the questions on the hot application, using joint protectors, consulting a physician, being able to perform the daily routines, receiving food supplement or avoiding some food, massage application, distraction, social and emotional support, providing stress control, providing treatment regularly, resting and exercise, etc. Additionally, the exercise time is also asked. The answers to these questions are "never-10 minutes-20 minutes-30 minutes-more than 30" (Table 1).

Multidimensional Health Assessment Questionnaire [MDHAQ]

The original version of the Multidimensional Health Assessment Questionnaire was published by Pincus et al.,[10] in 1999. The Turkish reliability and validity study of MDHAQ was conducted by Gogus et al.[11] The scale is an extended form of the Health Assessment Questionnaire. The level at which the patient individuals perform daily activities is asked in the form. The answers are "easily (0) - a bit difficult (1) - with difficulty (2) - I can't perform (3)." The symptoms specific to RA may affect, restrict and prevent the daily activities of the patients. As the additional symptoms of the patients may also affect the self-care behaviors, whether there is morning stiffness and its time are investigated with pain and fatigue scale.

Language Validity Studies of the Scale

Firstly, the language validity was tested to test whether or not the Self-Care Behavior Scale was a reliable and valid tool in assessing at what level the Turkish patient population with RA performed self-care behaviors.

• Firstly, the translation of the scale from English, the original language, to Turkish was performed by the three people, who know both Turkish and English well, and did not see the scale before.

• The scale translated to Turkish was translated into English again by the three people, who know both Turkish and English well, and did not see the scale before.

• The texts which were translated into Turkish and English by different people were compared and it was checked whether they were the same or not.

Table 1. Cronbach alpha reliability coefficients of the "Self-Care Behavior Scale" original and after item reverse scoring

	Sample size (N)	Item number	Cronbach's alpha value
Self-Care Behavior Scale (original scale)	119	17	0.657
Self-Care Behavior Scale (item reverse scoring)	119	17	0.558

• After the assessment of the scale which checked, it was sent to 10 experts to receive their opinions.

• After receiving the opinions of the experts and performing the required corrections, the final form was prepared.

• The last form of the scale, which went through all phases was put into the process to be used in the study.

As the sample size for the scale application, is recommended to be used for patients, 5-10 times of the scale item number.[12] After the scale was put into its final form, 119 individuals with RA, who agreed to participate in the study, 7 times of the scale item number, composed the research sample and the scale applied.

Content Validity Studies of the Scale

After the language validity of the scale was performed, it was sent to ten experts, including four clinicians and six academicians, to determine its content validity and the scale form put into its final form based on the experts' opinions. This form was applied to the individuals included in the study.

Reliability Studies of Scale

Test-retest method used to test the reliability of the scale. The time between the two tests should be appropriate to test the time invariance of the scale. The scale is recommended to be used again in a period of two weeks and two months. But as the remission and attack periods of the individuals with RA are very changeable, this period was limited to 24 and 72 h based on the experts' opinions. Within this time, the test was applied again by reaching the individuals again. Pearson's Correlation coefficients of these two tests were calculated. The reliability coefficient should be greater than 0.70. The fact that the value is high and it approaches +1 indicates how reliable that measurement.[13,14]

Statistical Analysis

The data were processed in a computer environment by SPSS 16. It was determined that 83.2% of the patients with RA were female, 58% were homemakers, 66.4% were unemployed, 80.7% were married and 70.6% lived in the metropolitan area. The age average of the patients was 50.60±13.79, and 35.6% were within the age range of 46-59 years. 63.9% of the individuals were primary school graduates, 77.3% had lower income than their expenses, 93.3% lived in a nuclear family, 80.7% had children and 73.9% received care from the family members. The period of the disease ranged between 6 months and 43 years and it was averagely within the range of 12.27±9.04 and similarly the period of treatment was between 6 months and 38 years

and it was averagely within the range of 10.72±8.37. In the examination of the status of having treatment for the disease, it was determined that 56.3% did not receive training, 90.8% shared their problems with their relatives and 62.2% had deformity in their joints. It was determined that 56.3% of the patients had an additional disease and 34.9% had mostly the history of cardiovascular disease. 97.5% of the patients used medicine, 46.1% used disease-modifying anti-rheumatic drugs (DMARD), 66.4% had morning stiffness and the average stiffness period was 76.05±156.73 min. The mean score of the visual pain scale in which the patients assessed their pain for the pain values they experienced in the last week was 3.33±3.15. The mean fatigue level felt in the last week was 4.87±3.47 points. Also, when the well-being of the patients was examined compared to the last two weeks, it was observed that 53.8% answered as "good."

Results

Reliability Analyses of "Self-Care Behavior Scale"

Based on the original values of the scale, Cronbach's Alpha value for the internal consistency analysis was found to be 0.675 (Table 2). The first 3 items were reversely scored based on the experts' opinions and the Cronbach's Alpha value was determined to be 0.558 (Table 2). For the test-retest used for determining the time invariance of the scale, the first 30 patients who agreed to participate in the study and accepted to be reached by phone and could be reached when called. Because of the experts' opinion, the retest period was limited to 24-72 hours. The results were determined to be statistically significant (r=0.74 p=0.000) (Table 3). Table 4 shows the split-half reliability results of SCBS. It was determined that the Cronbach's Alpha value of the first half (1-9) was 0.450 and Cronbach's Alpha value of the second half (10-17) was 0.530, and the correlation between the two halves was 0.484. Guttman Split-Half coefficient was 0.652 and Spearman- Brown coefficient was 0.653.

Assessment of the Content Validity of the "Self-Care Behavior Scale"

Experts' opinions were received for the content validity. For the statements in some of the scale items, two experts recommended changes. It was recommended in the first translation that "Used a heated pool, a bor shower" statement for the 1st item should be changed as "Going into a hot water pool"; and the "heat" statement in the 2nd item should be changed as "hot application."

The scale was put into its final form with the revisions performed based on the recommendations.

Table 2. Correlation analysis results of the test-retest scores of "Self-Care Behavior Scale"

	N	R	P
Pretest	30	0.74	0.000
Posttest	30		

Table 3. Results of "Self-Care Behavior Scale" split-half reliability analyses

The split-half correlation value	0.484
Guttman split - half coefficient	0.652
Spearman - brown coefficient	0.653
1.Half (the first 9 items) alpha value	0.450
2.Half (next 8 Items) alpha value	0.530
Number of people (N)	119

Assessment of the Construct Validity of the "Self-Care Behavior Scale"

Factor Analysis

Principal Components Analysis and Varimax method were used for construct validity on SCBS. Because of the Principal Components Analysis, 61.268% of the variation was explained with 6 components. Because of the analysis Kaiser-Meyer Olkin (KMO) coefficient and result of Bartlett's test (X^2=528.55; p=0.000) was found to be statistically significantly Kaiser-Meyer Olkin (KMO) variance value found by both factors was determined to be 0.602%.Within the scope of the study, a significant correlation was determined between the SCBS score and income status, residence, gender and educational status ($p<0.05$).

Discussion

Self-care behaviors define the actions that individuals initiate and do for the continuation of the individual's life and the continuity of health and well-being.[15,16] The key factor in successfully managing RA is the inclusion of patients in self-care behaviors.[17] In chronic diseases such as RA, self-care covers a wide spectrum such as treatment and management of symptoms resulting from the pathophysiology of the disease, coping with the disease, compliance with treatment, social life and personal relationships.[18] The European Alliance of Associations for Rheumatology stated the importance of the role of the rheumatology nurses in increasing self-management skills, developing correct behavior and patient education to increase their competence.[19] For nurses, scales are needed to determine the self-care behaviors of patients with RA and the factors affecting them. There is no scale to measure the self-care behaviors of patients with RA in Turkey. For this reason, the Turkish validity and reliability of the SCBS were examined.

Table 4. Self-care behaviour scale Turkish form frequencies of scale items

	Never (n, %)	Almost Never (n, %)	Sometimes (n, %)	Very often (n, %)	Always (n, %)
Going into a hot water pool	101 (84.9)	8 (6.7)	9 (7.6)	0	1 (0.8)
Applied hot application to parts of your body	105 (88.2)	7 (5.9)	7 (5.9)	0	0
Used joint protection, bracing or splinting	99 (83.2)	1 (0.8)	15 (12.6)	3 (2.5)	1 (0.8)
Changed the dosage of your drugs or the time of taking them without informing your physician	71 (59.7)	17 (14.3)	23 (19.3)	3 (2.5)	5 (4.2)
Adjusted your daily routine or work schedule	19 (13.4)	19 (16)	34 (20)	20 (16.8)	30 (25.2)
Taken food supplements, vitamin or eaten special foods	76 (66.4)	3 (2.5)	7 (5.9)	5 (4.2)	25 (21)
Bewared certain foods	79 (66.4)	11 (9.2)	18 (15.1)	3 (2.5)	8 (6.7)
Used massage	70 (58.8)	7 (5.9)	26 (21.8)	9 (7.6)	7 (5.9)
Done other things such as watching TV or reading to take your mind off your artrhritis (distraction)	52 (43.7)	20 (16.8)	32 (26.9)	7 (5.9)	8 (6.7)
Talked with persons who are sympathetic	33 (27.7)	15 (12.6)	47 (39.5)	4 (3.4)	20 (16.8)
Used methods to help control stress	59 (49.6)	14 (11.8)	31 (26.1)	4 (3.4)	11 (9.2)
Used relaxation methods such as meditation	95 (79.8)	4 (3.4)	11 (9.2)	3 (2.5)	6 (5)
Taken your drugs regulary and based on your prescription	1 (0.8)	2 (1.7)	12 (10.1)	8 (6.7)	96 (80.7)
Visited your physician regulary	0	2 (1.7)	9 (7.6)	2 (1.7)	106 (89.1)
Rested	7 (5.9)	8 (6.7)	25 (21)	14 (11.8)	65 (54.6)
Exercised (including water exercise)	72 (60.5)	6 (5)	21 (17.6)	4 (3.4)	16 (13.4)
	More than 30 minutes	**30 minutes**	**20 minutes**	**10 minutes**	**Never**
If you exercise, how much minutes do you exercise per day?	11 (9.2)	9 (7.6)	8 (6.7)	15 (12.6)	76 (63.9)

Because of the study of Morowatisharifabad et al.[9] in which they evaluated the reliability and validity of the original version of the scale, the Cronbach's Alpha value was found to be 0.680. The Cronbach Alpha value of the SCBS in individuals with RA in Turkey was found to be 0.657. This value shows that the scale has moderate reliability.[13]

In this study, regular drug use (80.7%) and regular doctor control (89.1%) behavior are applied more than other behaviors by patients. Similarly, in another study, the most common behaviors were; drug management, physician follow-up, and nutritional supplementation.[20] In the study of Nadrian et al.,[21] it was stated that the lowest scores were "regular exercise, especially water exercises," "using relaxation methods such as meditation" and "using a heated pool, bathtub or shower" behavior.

The least applied behavior in this study are the behaviors such as 'used a hot water pool, applied hot application parts of your body and used joint protection, bracing or splinting'. Kordasiabi et al.,[20] on the other hand, listed the least applied behavior as water exercise, diet, massage and relaxation techniques.

In this study, it was found that gender, place of residence, education level, income status and the presence of deformity in the joints affected self-care behaviors. Similar to this study, it was determined that gender, age, marital status, education, occupation, income status, duration of illness, the presence of comorbidity and health belief affected self-care behaviors. According to the research findings, it was emphasized that patients should be evaluated in a broad perspective in determining their self-care needs and that nurses should consider these factors in patient empowerment.[22,23]

Studies have shown that patients with RA exhibit different behavior. Other comprehensive studies are needed to reveal different results in patients by applying the scale in different societies and cultures.

Conclusion

Because of the reliability and validity analyses of the SCBS, it was determined to be a moderately reliable and valid scale for Turkish society, however, as the items in the scale may cause misunderstanding about the self-care of patients, and thus it is recommended to develop a Turkish

scale that can assess the self-care behavior in a more reliable and valid way.

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Ethics

Ethics Committee Approval: Ethical permission was obtained from İzmir Katip Çelebi University of Non-interventional Clinical Studies Institutionel Ethics Committee (decision number: 2016/16) and institutional permission from the hospital.

Informed Consent: Written consent was obtained from each patient participating in the study.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: B.C.K., Design: B.C.K., Y.T., F.Ö., Data Collection or Processing: B.C.K., Analysis or Interpretation: B.C.K., Y.T., F.Ö., Literature Search: B.C.K., Y.T., F.Ö., Writing: B.C.K., Y.T., F.Ö.

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