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Adaptation of the Keele Assessment of Participation into Turkish: Validity and Reliability Studies*

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Abstract

Objective: The purpose of the current study is to adapt the Keele Assessment of Participation into Turkish to assess the participation of individuals aged 50 and over and to conduct its validity and reliability studies.

Method: The study included 150 individuals between the ages of 50 and 78 who came to Izmir Palmiye Shopping Center between February 2018 and April 2018, who could read and write in Turkish. All the participants were administered the Turkish version of Keele Assessment of Participation, Socio-demographic Questionnaire Form, Impact on Participation and Autonomy, Reintegration to Normal Living Index and Short Form 36 Quality of Life Questionnaire. For the reliability, test-retest reliability, item-total correlation coefficient, Kuder Richardson-20 and Cronbach's Alpha (α) analyses were conducted. For the construct validity, exploratory factor analysis and confirmatory factor analysis were conducted and for the concurrent validity, its correlations with Impact on Participation and Autonomy, Reintegration to Normal Living Index and Short Form 36 Quality of Life Questionnaire were examined.

Results: For the reliability, the test-retest correlation coefficient was found to be r=0.631; p<0.01, Cronbach's Alpha coefficient was found to be 0.655, Kuder Richardson-20 coefficient was found to be 0.655 and item-total score correlation coefficients were found to be ranging from 0.232 to 0.506. Exploratory factor analysis revealed that the questionnaire has a single factor. Confirmatory factor analysis confirmed that the factor loadings of the questionnaire are suitable. In the concurrent validity, the highest correlation with the Turkish version of Keele Assessment of Participation was found for, Impact on Participation and Autonomy's sub-group of Impact on Participation and Autonomy 1.5 (r=-0.467; p<0.001).

Conclusion: Turkish version of Keele Assessment of Participation was found to be valid and reliable measurement tool to be used to assess the social participation of individuals aged 50 and over.

Key Words: Keele Assesment of Participation, social participation, Turkish version, validity and reliability

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* 1. Bu çalışma 26-27 Mart 2022 tarihinde gerçekleşen "5. Uluslararası Değişen Dünyada Fen , Sosyal ve Sağlık Bilimleri Kongresi"nde sözlü bildiri şeklinde sunulmuştur.
2. Bu çalışma, Muğla Sıtkı Koçman Üniversitesi Bilimsel Araştırma Projeleri (BAP) Koordinasyon Birimi tarafından 18/039 kod numaralı proje ile desteklenmiştir.
3. Bu çalışma, Muğla Sıtkı Koçman Üniversitesi Sağlık Bilimleri Enstitüsü Fizyoterapi ve Rehabilitasyon Anabilim Dalında Yüksek Lisans tezi olarak sunulmuştur (Yükseköğretim Kurumları Ulusal Tez Merkez Numarası: 545968).

Keele Katılım Değerlendirmesinin Türkçe Uyarlaması: Geçerlik ve Güvenirlik Çalışması

Özet

Amaç: Bu araştırmanın amacı, 50 yaş ve üstü bireylerin yaşam kalitesi ve katılımlarını değerlendirilmesi için Keele Katılım Değerlendirmesi'nin Türkçe uyarlamasının yapılması, geçerlik ve güvenirliğinin belirlenmesidir.

Yöntem: Çalışma, İzmir Palmiye Alışveriş Merkezine Şubat 2018-Nisan 2018 tarihleri arasında gelen, Türkçe okuma-yazma bilen, 50-78 yaş arasında olan 150 birey dahil edilmiştir. Tüm bireylere Keele Katılım Değerlendirmesi, Sosyodemografik Soru Formu, Katılım ve Otonomi Etki Anketi, Normal Yaşama Yeniden Katılım Endeksi ve Kısa Form-36 Yaşam Kalitesi Anketi uygulanmıştır. Güvenirlik için test-tekrar test güvenirliği ve iç tutarlılık analizleri yapılmıştır. Yapı geçerliği için açıklayıcı ve doğrulayıcı faktör analizi ve kriter geçerliği için Katılım ve Otonomi Etki Anketi, Normal Yaşama Yeniden Katılım Endeksi, Kısa Form-36 Yaşam Kalitesi Anketi'nin alt gruplarıyla korelasyon analiziyle incelenmiştir.

Bulgular: Test-tekrar test korelasyon katsayısı 0,631; $p<0,01$, Cronbach alfa 0,655, madde toplam puan korelasyon katsayıları 0,232 ile 0,506 arasında bulunmuştur. Açıklayıcı faktör analizinde anketin tek faktörlü yapısı olduğu bulunmuştur. Doğrulayıcı faktör analiziyle de anketin tek faktörlü model yapısı doğrulanmıştır. Keele Katılım Değerlendirmesi'nin kriter geçerliliğine göre, Keele Katılım Değerlendirmesi'nin, Katılım ve Otonomi Etki Anketi, Normal Yaşama Yeniden Katılım Endeksi, Kısa Form-36 Yaşam Kalitesi anketlerle korelasyonun olduğu bulunmuştur.

Sonuç: Keele Katılım Değerlendirmesi'nin Türkçe versiyonu, 50 yaş ve üstü bireylerin sosyal katılımını değerlendirmede kullanılabilecek geçerli ve güvenilir bir ölçüm aracı olduğu görülmüştür.

Anahtar Kelimeler: Geçerlik ve güvenirlik, Keele Katılım Değerlendirmesi, sosyal katılım, Türkçe versiyon

INTRODUCTION

Today, activity and participation have gained importance in understanding the relationship between the individual and the disease (1). According to the International Functional Disability and Health Classification (ICF) model prepared by the World Health Organization (WHO), body structure, activity and participation are linked to personal and environmental factors (2). Participation can be defined as being involved in various life situations such as work, school, game, sports, entertainment, learning or more generally in social life.

The forms of participation in social life vary throughout life (1,3). Diversity in forms of participation decreases with increasing age, less leisure and productive activities emerge, and the focus gets more directed to activities of daily living (4). As age increases, negative changes occur in participation due to reasons such as health deterioration, decrease in income level and social isolation (3).

WHO stated that participation has a positive effect on health and well-being, and that disability causes fewer social relations, more time spent at home, and fewer recreational activities (5). Participation restriction covers problems an individual may experience in participating in living conditions (2). When talking about the social-level consequences of problems experienced with participation, participation restriction refers to a complex situation resulting from the interaction between health status, individual and

environment (6). The fact that this situation is affected negatively for many reasons poses the risk of participation restriction. The risk of participation restriction is further increased when chronic conditions involving long-term adverse health events that can limit a person's functional performance come into play (3,7).

In addition to assessments made to determine the effects of the clinical course of diseases and rehabilitation approaches on body functions and activities, participation should also be assessed to provide comprehensive evidence on the effectiveness of treatment (4). WHO recommends that participation restriction be assessed in line with accepted norms expected from people of the same age, gender and culture. Therefore, the experience of participation restriction is unique to the individual due to the variability of roles and influencing factors (6).

Various objective measures of participation have been developed in the literature to measure observable levels of participation. These participation measures cover a wide variety of elements, domains and aspects of participation (8). In a study in which the tools assessing participation were systematically examined, 25% of the items in the scales were classified as addressing participation, 66% as not addressing participation, and 9% as undetermined (9). According to this systematic review, 73% of the Keele Assessment of Participation (KAP) consists of items related to participation (6). KAP is based on the perceptions of the individual rather than some standardized patterns. In other words, the scale allows the individual to determine the restriction of participation in living conditions according to his/her own standards and needs. The concept tried to be measured with KAP defines participation restriction as the problems experienced in participating in living conditions, as perceived by the individual. KAP was first developed in 2005 by Wilkie et al. (6). Later, KAP was used in individuals aged 50 and over with knee pain, individuals with spondyloarthropathy and the Dutch version of it was used with individuals having chronic disease and at least one joint pain (10,11,12).

KAP is the first scale developed specifically to measure participation restriction in population studies in the literature (6). There is no scale specially designed for such large population studies and having a Turkish version to assess participation (13). The purpose of the current study is to linguistically and culturally adapt KAP into Turkish and to conduct its validity and reliability studies.

METHOD

Sample Group

As the aim of the research is to investigate the validity and reliability of the Turkish version of KAP, it is a methodological research type. 150 volunteers aged 50 and over (50-78 years old), native Turkish speaking and literate, who came to Izmir Palmiye AVM between February 2018 and April 2018 and agreed to work again after 2 weeks were included in the study. The sample size of the study was calculated on the basis of the "number of items x 5-10" formula used in validity and reliability studies (15x10=150) (14). The study's sample group and inclusion characteristics were based on the original KAP. It has been emphasized that social participation will be limited with the increase in diseases in individuals after the age of 50 (6). Therefore, Wilkie et al. In their surveys, they determined the sample group in which participation in the general population could be evaluated as individuals aged 50 and over.

Individuals with severe cognitive impairment and visual or hearing impairment were not included. Questionnaires were administered to volunteers face to face.

Permissions

Ethical consent of the study was accepted by Mugla Sıtkı Kocman University Human Research Ethics Committee with protocol number 170058 decision numbered 27 and dated 27/11/2017. In addition, after detailed information was given to the volunteers about the research to be conducted, the Informed Consent Form was submitted in writing. Written and verbal consent was obtained from the volunteers. Permission was obtained by mail from Wilkie, who developed the questionnaire, for the adaptation of KAP to Turkish.

Measurements

In the current study, Impact on Participation and Autonomy Questionnaire (IPA) and Reintegration to Normal Living Index (RNLI) scales used in the original study of KAP and Short Form-36 Life Quality Questionnaire (SF-36) scale similar to the sub-dimensions of KAP were also used to test the concurrent validity of T-KAP. Therefore, these scales were also administered to the participants.

Socio-demographic Question Form (SQF)

By reviewing the relevant literature, the researcher prepared a form consisted of 13 items to determine the socio-demographic features of the individuals aged 50 and over. The items in the form are aimed to elicit information about the participants' age, gender, height, weight, body mass index (BMI), education level, marital status, assistive devices for ambulation.

Impact on Participation and Autonomy Questionnaire (IPA)

In the current study, the IPA was used to evaluate social participation. This questionnaire measures different dimensions of autonomy and participation. The validity and reliability studies of IPA in Turkish were conducted in 2012 by Kurt. This questionnaire has 5 sub-headings. These sub-headings are autonomy indoors (7 items), family role (7 items), autonomy outdoors (5 item), social life and relationships (7 items), work and education (6 items); thus, there are a total of 32 items in the questionnaire (15,16,17).

Moreover, with extra 9 items in the questionnaire, it is also evaluated whether participants have any limitations in the following areas: mobility, self-care, activities in and around the house, looking after your money, leisure, social life and relationships, helping and supporting other people, paid or voluntary work, education and training. Each of these items has the same response options scored between 0 and 2.

Keele Assessment of Participation (KAP)

KAP consists of the domains of participation such as interpersonal interactions and relationships, home environment, education, profession and work life, functionality, community life and social life involved in the ICF's classification. KAP assesses these components of ICF in a general population consisted of 50 year old and older people. KAP is a simple and short scale measuring the individual's participation in daily and social life and covering the categories of ICF regarding activity and participation (6). The number of items in KAP is 11 and the items 6, 9, 10 and 11 include conditional statements. With these conditional statements, the total number of items is 15. If the responses of the participants to the items 6, 9, 10 and 11 are "yes", then he/she is asked to answer the question yet if it is "no", then he/she is asked to proceed to the next item. The participant is asked to respond to each item with marking one of the following response options: 1-Always, 2-Often, 3-Sometimes, 4-Rarely, 5-Never. The minimum and maximum scores to be taken from KAP are 0 and 11, respectively. If the individual gets 0 point, then it means that there is no limitation to the participation; on the other hand, a score between 1 and 11 points indicate that there is limitation to the participation in at least one activity. If the participant marks one of the following response options; "sometimes", "rarely" and "never", then he/she is given 1 point and if the participant marks one of the following response options; "usually" and "always", then he/she is assigned 0 point. Completion of the scale takes 2-4 minutes.

Reintegration to Normal Living Index (RNLI)

RNLI was adapted to Turkish in 2012 by Demirdel to make assessments on the participation of amputees and its reliability and validity studies were conducted by them (18). RNLI evaluates a total of six domains related to activity and daily life in the sub-scale of daily functions. These functions are; moving around his/her living quarters, moving around his/her community, being able to take trips out of town, self-care needs, daily activities and work activities, recreational activities, social roles and family roles In RNLI, a 5-point Likert type was used. The lowest score to be taken from the scale is 11 while the highest score is 55. The higher the score, the better the patients perceived integration (19,20).

Short Form-36 Life Quality Questionnaire (SF-36)

It is a frequently used questionnaire in studies to evaluate the quality of life. The questionnnaire was adapted to Turkish in 1999 by Koçyiğit et al. and its validity and reliability were shown in the study. The Short Form-36 Life Quality Questionnaire (SF-36) consisted of 36 items evaluates the quality of life considering the last four weeks. It has six sub-groups called physical functions, social functions, restrictions on roles due to physical problems, bodily pain, restrictions on roles due to emotional problems, life energy and general health. This questionnaire is scored between 0 and 100 and 0 indicates a bad health status while 100 indicate a good health status (21,22).

Translation of KAP into Turkish

In the translation of KAP into Turkish, the 5-stage translation-back translation method proposed in 2000 by Beaton et al. was used (23). In the translation stage, 2 academicians specialized on Physiotherapy and Rehabilitation and having a good command of English and an academician from the School of Foreign Languages; thus, a total of 3 academicians were involved. In the back translation stage, 2 academicians whose mother tongue is English and who have a good command of Turkish were involved.

The linguistic validity of the T-KAP was tested with the translation-back translation method. After the lingusitic validity of the scale was estabslihed, piloting of the questionnaire was conducted on 30 individuals to achieve the cultural adaptation of the questionnaire. The individuals involved in the piloting were not included in the sample. As a result of the piloting, the item 8 “During the past 4 weeks, I, or someone else on my behalf, have managed my money, as I have wanted.” was reworded as it was not understood by the participants of the piloting as follows; “During the past 4 weeks, I have managed my monetary affairs (bank, receipts, salary, etc.) when I have wanted and as I have wanted.” and the

approval of the researcher having developed the original questionnaire was gained. No disagreement occurred on the other items. In the back translation stage and piloting stage, no change on the other items was needed. During the piloting, it was observed that the completion of the questionnaire took 2-3 minutes on average.

Statistical Analyses

SPSS trial version 22.0 computer package program was used for statistical analysis. The statistical data were expressed as mean ± standard deviation (X±SD), median or percentage (%). The correlations between the scales were tested with Spearman's correlation coefficient. p value lower than 0.05 was accepted to be statistically significant for descriptive statistics, correlations and exploratory factor analysis.

Reliability

For the reliability analysis of T- KAP, its time-invariance and internal consistency were examined. The test-retest method was used in the time-invariance analyses, Kuder Richardson-20, Cronbach's α value and item-total correlation coefficients were used to determine internal consistency (24). For test-retest reliability, 2 weeks after the completion of the first application, T-KAP was re-administered to 50 patients having participated in the first application. Test-retest scores were examined with Pearson correlation analysis.

Validity

In the determination of the suitability of the sample for factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity (BTS) analyses were performed (25). In order to test the construct validity, exploratory and confirmatory factor analyses were conducted and in order to test the concurrent validity, correlation analyses of T-KAP with IPA, RNLI and the sub-groups of SF-36 were performed.

RESULTS

The validity and reliability studies of T-KAP were conducted on individuals aged 50 and over. A total of 150 individuals (76 females and 74 males) participated in the study on a volunteer basis. The mean age of the participants was 59.09±6.22 and their mean body mass index was 28.05±4.35 kg/m². Of the participants participating in the T-KAP study, 50.7% were females, 49.3% were males; 62% were married and 38% were single. When the education level of the participants was examined, it was seen that 6.01% were literate, 13.3% were elementary school graduates, 10% were secondary school graduates, 33.3% were high school graduates and 37.3% were university graduates. The state of their using or not using assistive devices for ambulation was an important variable. It was determined that 4.7% of the

participants were using walking sticks, 1.3% walkers and 2% crutches and 92% of the participants were found to be not using any devices for amputation (Table 1).

Table 1: Demographic Features of the Participants

		Mean±SD n (%)*
Age (years)		59.09±6.22
BMI (kg/m²)		28.05±4.35
Gender	Female	76 (50.7)
	Male	74 (49.3)
Marital Status	Single	57 (38.0)
	Married	93 (62.0)
Education Level	Literate	9 (6.01)
	Elementary school	20 (13.3)
	Secondary school	15 (10.0)
	High school	50 (33.3)
	University	56 (37.3)
Assistive Devices for Ambulation	None	138 (92.0)
	Crutches	3 (2.0)
	Walkingstick	7 (4.7)
	Walker	2 (1.3)

* SD: Standard Deviation, n: Number of participants

Reliability

A positive, significant and high correlation was found between the test and retest scores of T-KAP (r=0.631; p<0.01). Cronbach's Alpha reliability coefficient was calculated to be α=0.655. This value shows that the scale is moderately reliable (26). The reliability coefficient was also calculated to be 0.655 with the Kuder Richardson -20 method. The item-total test correlation values were found to be ranging from 0.23 to 0.50 (Table 2).

Validity

As a result of the item-factor analysis of T-KAP, KMO value was found to be 0.653. On the basis of this value, it was concluded that the sample size for conducting factor analysis is "highly adequate" (27). Since T-KAP is an adaptation study, an explanatory factor analysis was conducted to reveal the underlying factor structure of the statements representing the variables of a scale that was newly created or translated from one language to another. Moreover, when the results of the BTS were examined, the obtained chi-square value was found to be significant ($\chi^2(55)=784.402$; p<0.01). Accordingly, it was accepted that the data came from multivariate normal distribution. The factor loadings of the items were found to be ranging from 0.301 to 0.915. In the adaptation of KAP to Turkish, Confirmatory Factor Analysis (CFA) was also conducted to determine whether it fits to the original factor structure and if it fits, the degree of this fit (28). With this analysis,

Table 2: T-KAP Factors and Their Values For Items

Items	Eigenvalue (Λ)	Factor Load	Item Total Score Correlation
Item 1	3.687	0.716	0.280
Item 2		0.850	0.356
Item 3		0.550	0.240
Item 4		0.796	0.356
Item 5		0.915	0.401
Item 6		0.312	0.232
Item 7		0.453	0.310
Item 8		0.545	0.359
Item 9		0.320	0.491
Item 10		0.315	0.506
Item 11		0.301	0.342
Total (α=0.655)			
*KMO = 0.653; $\chi^2(55)$ =784.402; BTS (p) = 0.000			

*KMO: Kaiser-Meyer Olkin,
BTS: Bartlett's Test of Sphericity

it was seen that T-KAP has a single factor model structure (Figure 1). After the CFA modification, X^2/df (Chi-square/degree of freedom) was found to be 2.162; GFI (Goodness-of-fit index) was found to be 0.910; CFI (Comparative fit index) was found to be 0.940; RMSEA (Root Mean Square Error of Approximation) was found to be 0.010 (Table 3).

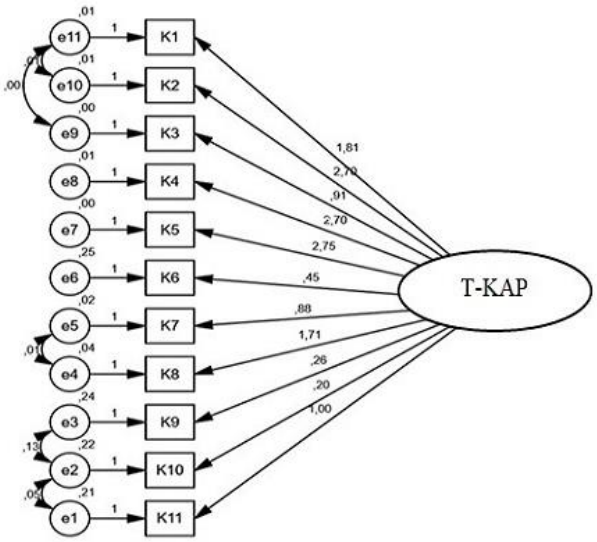

Figure 1: The Path Diagram of the Confirmatory Factor Analysis

In order to test the concurrent validity of T-KAP, IPA, RNLI and SF-36 questionnaires were used. While testing the concurrent validity, the correlation coefficients of the target scale and measurement tools having similar features were compared. The construct validity of T-KAP was calculated with Spearman correlation coefficient (r). As a result of the testing of the concurrent validity, T-KAP was found to be correlated with SF36.1 (r=-0.375; p<0.001), SF36.2 (r=0.342; p<0.001), SF36.5 (r=-0.214; p<0.009), SF36.6 (r=0.214; p<0.001), SF36.7 (r=0.256; p<0.001), SF36.8 (r=0.286; p<0.001). There is no correlation between T-KAP and SF36.3 and SF36.4. T-KAP was found to be correlated with IPA 1.1 (r=-0.287; p<0.001), IPA 1.2 (r=-0.282; p<0.001), IPA1.3 (r=-0.326; p<0.001), IPA 1.4 (r=-0.169; p<0.001), IPA 1.5 (r=-0.467; p<0,001). Moreover, there is a significant correlation between RNLI 1.1 and T-KAP (r=0.340; p<0.001) and between RNLI1.2 and T-KAP (r=0.207; p<0.000).

Table 3: Fit values of T- KAP

	*χ^2	*df	*χ^2/df	*GFI	*CFI	*RMSEA
Before Modification	211.54	44	4.808	0.782	0.802	0.160
After Modification	84.321	39	2.162	0.910	0.940	0.010
Good Fit Index			≤3	≥0.90	≥0.97	≤0.05
Acceptable Fit Values			≤4-5	0.89-0.85	≥0.95	0.06-0.08

*χ^2=Chi-Square; df=Degree of Freedom; GFI=Goodness Of Fit Index; CFI=Comparative Fit Index; RMSEA=Root Mean Square Error of Approximation

DISCUSSION

With the adaptation of KAP into Turkish, a valid and reliable scale was obtained that

can be used for the assessment of participation of individuals aged 50 and over. As this scale was developed according to the ICF model, it is argued to be more systematic than other participation assessment scales in the literature (6).

In addition to the original study of KAP, its Dutch version study was also conducted (12). In this section, the similarities and differences between the Turkish version, Dutch version and original version of the scale are discussed.

The sample group used in the adaptation study of T-KAP consisted of 150 individuals aged 50 and over. Based on the knowledge that the number of participants should be 5-10 times the number of items in the scale in validity and reliability studies, the sample size of our study was determined as 150 people for 15 items (14). Wilkie et al., who developed the KAP, included 1117 individuals aged 50 and over, and 407 volunteers aged 65 and over were included in the development of the Dutch version (6,12). The duration of the studies is 36 months in the original study, 6 months in the Dutch version, and 3 months in the Turkish versio (6,12). The sample group in the original study and the Turkish version study similarly consisted of voluntary individuals aged 50 and over. However, the sample group used in the development of the Dutch version was consisted of individuals of 65 years old or older with at least 2 chronic diseases and having joint pain (neck, back, waist, shoulder, elbow, hand, hip, knee and/or foot) in the last month (12).

In the pilot study of T-KAP, it was administered to 30 individuals aged 50 and over without specifying a specific diagnosis. In the pilot study of the original version, a pilot study was conducted on 11 individuals over the age of 50 (8 with rheumatologic disease and 3 healthy) to calculate face validity, content validity and the time required to answer the scale. Later, the pilot study of KAP was completed by conducting qualitative interviews with 4 individuals having rheumatological diseases (6). In the Dutch version, it was administered to 10 individuals over the age of 65 and having foot pain (12).

As the Cronbach's α was found to be 0.655, it was concluded that T-KAP is reliable (26). Factor analysis in the Dutch version showed two subcomponents: KAPd1: "Participation in basic activities" and KAPd2: "Participation in complex activities". The Cronbach's α was found to be 0.74 for KAPd1 and 0.57 for KAPd2. In the Dutch version, KAPd1: "Participation in basic activities" showed a good internal consistency and adequate reliability. Although KAPd2: "Participation in complex activities" is a component that can be used on its own, it was found to be inadequate in terms of psychometric properties (12). As internal consistency and

Croanbach's α coefficient calculations were not made in the original study, the related results cannot be compared. In the original study, Kappa value calculated for reliability was found to be between 0.20 and 0.71. This value shows that the scale is reliable (29).

In order to test the time-invariance of KAP, the test-retest method was used in the original, Dutch and Turkish versions. In the Dutch and Turkish versions, the test-retest method re-administered to the participants two weeks later while in the original scale, the test-retest method was re-administered 4 weeks later (n=19) (6,12). The correlation analysis results obtained from the test-retest of T-KAP (n=50) showed that there is a positive, high and significant correlation ($r=0.631$; $p<0.01$). In the original study, the test-retest correlation coefficient also showed that there is a high and significant correlation ($r=0.880$; $p<0.05$). In the Dutch version (n=122), a moderate test–retest reliability was found. In a reliability analysis, moderate test-retest value (0.40-0.60) is an acceptable reliability value (30). Thus, in three of the studies, it was shown that the scales have the characteristic of time-invariance.

As the item-total test correlations were found to be varying between 0.23 and 0.50, item-total score correlations were concluded to be acceptable and adequate for item analysis. In the original study of KAP, item-total score correlation coefficients were examined (6). In its Dutch version, they were found to be varying between 0.57 and 0.63 (12).

In order to test the construct validity of T-KAP, exploratory and confirmatory factor analyses were carried out. Before determining the factor structure, the suitability of the sample for factor analysis was investigated with KMO and BTS analyses. As a result of these analyses, KMO value was found to be 0.653 and BTS value was found to be $\chi^2(55)= 784.402$; $p<0.01$. As stated in the literature, since the KMO value was found to be higher than 0.50 and the result of BTS was found to be statistically significant, it was concluded that the factor structure of T-KAP is suitable for factor analysis (25,27). The factor loadings of the items in T-KAP were found to be ranging from 0.301 to 0.915. In the literature, it is stated that factor loadings should be higher than 0.30 (31). Thus, it was concluded that the factor loadings of the items are adequate.

The construct validity found in the T-KAP study revealed that the scale has a single factor structure. In the original KAP study, as a result of the content validity analysis conducted for construct validity and cognitive and semi-structured interviews, it was revealed that it could comprehensively assess participation (29).

The confirmatory factor analysis conducted for T-KAP and the fit values of the model

constructed for the 11 items in the scale were found to be not at the acceptable level. After the modifications suggested in the literature were performed, GFI was found to be 0.910, CFI was found to be 0.940 and RMSEA was found to be 0.010, these values are within the acceptable value range (32). As confirmatory factor analysis was not used in the original study, these results could not be compared (6). In the Dutch version, the items 1, 2, 3, 4, 5 and 7 are included in KAPd1 "participation in basic activities", while the items 9, 10 and 11 are included in KAPd2 "participation in complex activities". As the items 6 and 8 were found to have low factor loadings, they were excluded from the other analyses. In the Dutch version, CFI was found to be 0.977, Tucker-Lewis index (TLI) was found to be 0.963 and RMSEA was found to be 0.054; thus, a two-factor structure emerged (12).

For the concurrent validity of the scale, IPA, RNLI and SF-36, which have similar characteristics, were used. The highest compliance with T-KAP was shown by IPA 1.5 ($r=-0.467$; $p<0.001$). In the original study of KAP, IPA, SF-12 and RNLI scales were used. KAP was found to have a high compliance with RNLI and IPA (6). In the Dutch version, Lawton Instrumental Activities of Daily Living index (IADL), KATZ index of Independence in Activities of Daily Living index (ADL), IPA and SF-36 were used. A high compliance was found between KAPd1 and IPA1.5 ($r=0.63$; $p<0.001$) (12).

CONCLUSION

As a result of the adaptation of KAP into Turkish, a valid and reliable measurement tool that could be used to assess participation among individuals aged 50 and over in Turkey was obtained. It can also be used as a simple, short and precise assessment method including components of ICF by health workers in clinics. It is suggested that this scale assessing participation can be used in different languages and cultures through new adaptation studies.

Limitations

This study was applied to the general population, without determining a specific diagnosis, of individuals aged 50 and over by taking the original article as a reference. Since KAP is a study directed to general population, this scale should be applied to different sample groups with different diseases. After such applications, validity and reliability analyses of T-KAP should be conducted again. The reliability of T-KAP was found to be at the medium level. This might be because of the small sample size. Future research can use bigger samples and then conduct validity and reliability analyses again. Sensitivity analysis was not

conducted for T-KAP. The data obtained with the T-KAP study are limited to the perceptions of individuals.

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