NURSES KNOWLEDGE AND ATTITUDES

Reliability and validity of Turkish version of attitudes toward old people scale

Özlem Küçükgüçlü, Hatice Mert and Burcu Akpınar

Aims and objectives. To assess the reliability and validity of a Turkish version of Kogan's Attitudes Toward Older People Scale.
Background. To explore nursing students' attitudes towards older people, standardised, well-tested instruments are needed. Kogan's Attitudes Toward Older People is a comprehensive instrument for assessment of attitudes toward older adults and has been validated in several languages. However, a validated Turkish version has not been available until now.
Design. The study used psychometric testing to establish reliability and validity of the Turkish version of Kogan's Attitudes Toward Older People Scale.
Methods. A convenience sample of 237 nursing students in Turkey was used to collect data regarding attitudes towards older people. Content validity, construct validity, internal consistency and stability reliability of the Kogan's Attitudes Toward Older People were assessed.
Results. Kogan's Attitudes Toward Older People scores were between 74–224. All of the 34 items were found to have significant item-to-total correlations ($p < 0.05$). Results of the confirmatory factor analysis established that the scale had a two-factor construct and was appropriate use in this student population. The Cronbach's alpha was 0·89 for the total scale (0·82 for negative, 0·85 for positive). In addition, test–retest correlation was 0·83 (negative subscale 0·77, positive subscale 0·73) ($p < 0.001$).
Conclusions. The Turkish version of the Kogan's Attitudes Toward Older People was found to be a reliable and valid tool for assessing Turkish nursing students' attitudes toward older adults.
Relevance to clinical practice. This study provided evidence that the Kogan's Attitudes Toward Older People is a reliable and valid instrument for assessing Turkish nursing student's positive and negative attitudes toward older adults. It is easy and practical to use for both informants and investigators and acceptable for Turkish Culture.

Key words: attitudes, Kogan's Old People Scale, nurses, nursing, older adults, Turkey

Introduction

Due to the improvements in health and social fields in the last 25–30 years, the life span has increased. This has led to an increase in the older people population throughout the world. Currently in Turkey, older adults aged 65 years or older constitute more than 6·8% of the total population. This proportion is predicted to rise to 8·4% within the next

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10 years (State Planning Organization Report 2007, Turkish Statistical Institute Report 2008). As Turkish ageing population continues to grow exponentially, the demand for health care also increases.

The quality of care provided to older people is directly related to the attitudes that health care professionals hold towards them (Stevens & Crouch 1995, Courtney *et al.* 2000). Nurses are one of the professions who have a pivotal role as providers of care for older adults and are uniquely positioned to influence the quality of their care (Stevens & Herbert 1997). Additionally, attitudes of nursing students who are the candidates of nursing profession will play an important role in service delivery in the future (McKınlay & Cowan 2003). Recent studies have shown that Turkish nursing students have little interest in working with older people (Kulakcı 2010) Educational preparation is a major cultural influence on shaping attitudes (Hartley *et al.* 1995). Nurse educators should put a greater focus on issues related to the care of the older person in their nursing curriculum and exploring of attitudes of nursing students toward older people (Hweidi & Al-Hassan 2005).

To explore nursing students' attitudes towards older people standardised, well-tested instruments are needed. Kogan's Attitudes Toward Old People Scale (KAOPS) is a comprehensive instrument for assessment of attitudes toward older people and has been validated in several languages and used in many countries such as the USA, Norway (McCracken *et al.* 1995), Sweden (Söderhamn *et al.* 2000), Greece (Lambrinou *et al.* 2005), Jordan (Hweidi & Al-Hassan 2005), Japan (Ogiwara *et al.* 2007) and Taiwan (Yen *et al.* 2009). However, a validated Turkish version had not been available. The reliability and validity of a Turkish version of KAOPS needed to be determined. Therefore the purpose of this study was to determine the reliability and validity of the KAOPS to fill this gap.

Methods

Design and sample

Written permission was obtained from Nathan Kogan to adapt the KAOPS into Turkish and to use the instrument in this study. University Ethical Committee reviewed and approved this study for the protection of human subjects. Written approval to conduct the study was obtained from the School of Nursing. Informed consent was obtained from all participants. The sample for this psychometric study included 237 undergraduate nursing students at Dokuz Eylul University School of Nursing in Turkey. The inclusion criteria for

the students who were recruited were as follows: ability to speak and understand Turkish and willingness to participate in this study. Student age ranged from 18–26 years with a mean of 20·08 (SD 1·6). Of the students, 17·7% were male and 82·3% female.

Instruments

Data were collected in the study using a demographic data collection form and the KAOPS.

Kogan's Attitudes Toward Old People Scale

The KAOPS consists of 34 items regarding older people (Kogan 1961). Seventeen items are negatively worded (KAOP -) while the rest are positively worded (KAOP +) statements. The response scale is a summed Likert attitude scale ranging from one (strongly disagree) to seven (strongly agree). A score of four is assigned in the rare case of failure to respond to an item (Kogan 1961). Scores on the negatively worded items are reversed to obtain the total score. Total possible scores range from 34–238. Higher total scores indicated a more positive attitude. Reliability and concurrent validity have been addressed by Kogan (1961), who reported item-total scale correlations among undergraduate American subjects in the range of 0·10–0·70. For the Japanese version the Cronbach's alpha was 0·87 for the total scale (Ogiwara *et al.* 2007), for the Chinese version, 0·82 (Yen *et al.* 2009), for the Greek version 0·80 (Lambrinou *et al.* 2005) and for the Swedish version 0·79 (Söderhamn *et al.* 2000).

Procedures

Translation of the scale items into Turkish

The first step of the translation involved forward translation of the original KAOPS into Turkish by the authors of this paper and two native speakers of Turkish who spoke English fluently. The researchers, whose native language was Turkish, reviewed these preliminary Turkish versions of the inventory and then drafted one Turkish version of the KAOPS. The forward-translated version was then back-translated by a professional bilingual translator unfamiliar with either the English or the Turkish version of the KAOPS to ensure the accuracy of the translation. The back-translation was compared with the original KAOPS by the authors of this paper. If the items or response choices of between the forward translated and back-translated instruments did not agree, the choice of words were discussed among the translators until a final version was reconciled (Karasar 2000, Gozum & Aksayan 2003).

Content validity

To determine the equivalence of the items of the translated form to those on the original form it was necessary to obtain, opinions of seven experts (one family physician, one faculty member from the Department of Neurology, three clinical nurses, two faculty members from School of Nursing). Experts were asked to rate each item on the Turkish version of the KAOPS based on relevance, clarity and simplicity as one (not appropriate at all), 10 (completely appropriate) (Sencan 2005). The seven experts' scores were evaluated using the Kendall *W* and no statistically significant difference was found between the scores (for KAOPS Kendal *W* = 0·147, *p* = 0·118). Consequently the experts' scores were determined to be in accordance.

Pilot test

Once the translated instrument was developed, a pilot study using subjects selected from the target population was undertaken to test the psychometric properties of equivalency, reliability and score distribution. The translated version was piloted among 30 nursing students. Changes in wording recommended by the students were incorporated in the final version of the tool. The reliability and the construct validity of the Turkish version of the KAOPS did not indicate any problematic items in this preliminary testing. Therefore, additional investigations to assess the psychometric performance of the Turkish KAOPS were undertaken.

Data collection

The questionnaire included a cover letter that addressed the purpose and importance of the study and informed consents were given to participants by one of the researchers during a class. The students volunteered to participate during class time. The instructor left the classroom during administration, but the researcher remained to handle student questions. For test–retest purposes, the instrument should be administered for the second time at an interval that should not be short enough for subjects to remember the answers given in the first administration but not so long that the respondents would have changed significantly. The recommended interval is between two and six weeks (Patrick & Beery 1991, Tezbasaran 1997, Sencan 2005). For test–retest analysis a group of at least 30 is recommended (Savasır & Sahin 1997). In this study, two weeks following the first administration, KAOPS form was given to 68 subjects who were willing to take part in the retest. To match the data from the first and second administration of the KAOPS pseudonyms were used on the forms insuring confidentiality of participants.

Data analysis

Analysis was conducted using descriptive statistics and appropriate reliability and validity statistical tests using the Statistical Package for the Social Services spss 15.0 (SPSS Inc., Chicago, IL, USA). Content validity was assessed using an expert panel. Concordance of expert opinions' was tested using the Kendal *W* statistic. Internal consistency was determined using Cronbach's alpha and item-to-total score analysis was determined using Pearson Correlation. Test–retest measurement was assessed using Pearson correlations and a dependent *t*-test with a two week interval. Construct validity was assessed by confirmatory factor analysis. Indices to assess to degree to which to data fit the model were: the χ^2 statistics, the ratio of chi-square to degree of freedom (χ^2/df), the root mean square error of approximation (RMSEA), the comparative fit index (CFI), the standardised root-mean-square residual (SRMR) and the non-normed fit index (NNFI) (Lobiondo-Wood & Haber 2002, Simsek 2007, Harrington 2009).

Results

Descriptive statistics of the KAOPS

Descriptive data for each item of KAOPS are shown in Table 1. The minimum and maximum scores for each item of the scale were one and seven, respectively. The mean value of the items ranged from 3·35 (SD 1·58)–5·20 (SD 1·10). The total scores ranged from 74–224 with a mean score of 153·28 (SD 23·80). The negative items mean scores ranged from 33–109 with a mean score of 75 (SD 13·54). The positive items mean scores ranged from 38–115 with mean score of 78·25 (SD 13·11).

Validity analysis

Construct validity

As a result of the confirmatory factor analysis a statistically significant correlation was found between the negative and positive subscales (*r* = 0·70 (Fig. 1). The negative subscale factor loading was 0·35–0·61 with the positive subscale 0·40–0·70 (Fig. 1). The model concordance indicators were found to be: χ^2 1137.69 (*p* < 0·001), RMSEA 0·071, CFI 0·90, SRMR 0.075 and NNFI 0·91.

Reliability

The Cronbach's alpha coefficient was 0·89 for the total scale and 0·82 for OP- and 0·85 for OP+, respectively. When the

Table 1 Descriptive statistics of KAOPS and Pearson correlation coefficient between the items and the total scale (*n* = 237)

Item	Item content	M	SD	r	p
1	It would probably be better if most old people lived in residential units with people their own age	4·65	1·71	0·41	0·001
2	It would probably be better if most people lived in residential units with younger people	4·36	1·63	0·43	0·001
3	There is something different about most old people; it's hard to find out what makes them tick	4·29	1·56	0·42	0·001
4	Most old people are really no different from anybody else; they're as easy to understand as younger people	4·61	1·52	0·53	0·001
5	Most old people get set in their ways and are unable to change	3·39	1·50	0·46	0·001
6	Most old people are capable of new adjustments when the situation demands it	4·44	1·56	0·53	0·001
7	Most old people would prefer to quit work as soon as pensions or their children can support them	4·46	1·58	0·45	0·001
8	Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody	4·99	1·36	0·45	0·001
9	Most old people tend to let their homes become shabby and unattractive	5·11	1·38	0·40	0·001
10	Most old people can generally be counted on to maintain a clean, attractive home	4·91	1·14	0·51	0·001
11	It is foolish to claim that wisdom comes with age	4·27	1·76	0·41	0·001
12	People grown wiser with the coming of old age	4·63	1·49	0·49	0·001
13	Old people have too much power in business and politics	5·03	1·30	0·53	0·001
14	Old people should have power in business and politics	4·91	1·20	0·50	0·001
15	Most old people make one feel ill at ease	4·97	1·51	0·50	0·001
16	Most old people are very relaxing to be with	4·87	1·33	0·49	0·001
17	Most old people bore others by their insistence on talking 'about the good old days'	4·32	1·72	0·48	0·001
18	One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences	5·20	1·10	0·50	0·001
19	Most old people spend too much time prying into the affairs of others and giving unsought advice	4·50	1·63	0·57	0·001
20	Most old people tend to keep to themselves and give advice only when asked	4·16	1·60	0·49	0·001
21	If old people expect to be liked, their first step is to try to get rid of their irritating faults	4·52	1·62	0·55	0·001
22	When you think about it, old people have the same faults as anybody else	5·05	1·32	0·46	0·001
23	In order to maintain a nice residential neighbourhood, it would be best if too many old people did not live in it	5·09	1·62	0·38	0·001
24	You can count on finding a nice residential neighbourhood when there is a sizeable number of old people living in it	4·67	1·56	0·43	0·001
25	There are a few exceptions, but in general most old people are pretty much alike	3·59	1·44	0·38	0·001
26	It is evident that most old people are very different from one another	4·11	1·52	0·44	0·001
27	Most old people should be more concerned with their personal appearance; they're too untidy	4·98	1·41	0·39	0·001
28	Most old people seem quite clean and neat in their personal appearance	4·75	1·29	0·58	0·001
29	Most old people are irritable, grouchy and unpleasant	5·00	1·46	0·51	0·001
30	Most old people are cheerful, agreeable and good humoured	4·91	1·24	0·51	0·001
31	Most old people are constantly complaining about the behavior of the younger generation	3·35	1·58	0·54	0·001
32	One seldom hears old people complaining about the behaviour of the younger generation	3·56	1·50	0·49	0·001
33	Most old people make excessive demands for love and reassurance than anyone else	3·47	1·67	0·43	0·001
34	Most old people need no more love and reassurance than anyone else	4·16	1·54	0·48	0·001

34-item scale's item-total score correlations were examined to assess instrument reliability, item-total score correlations were found to be 0·38–0·58 and at a statistically significant level ($p < 0.001$, Table 1).

Test–retest reliability

The stability of the KAOP scale and the subscales over time, the test–retest reliability coefficient, between the two administrations of the scale with a two week interval was evaluated with Pearson's Product–Moment Correlation. Statistically significant positive correlations were determined between the test–retest score means of the KAOP scale ($r = 0.83$, $p < 0.001$) and subscales (Negative subscale:

$r = 0.77$, $p < 0.001$; Positive subscale: $r = 0.73$, $p < 0.001$, Table 2). To determine whether or not there were differences in the mean scores obtained from the scale and subscales between the first and second administration, the scale was evaluated using the *t*-test in dependent groups. No statistically significant differences were found ($p > 0.05$).

Discussion

If an instrument is to be used in a different language it is necessary to demonstrate that it has similar validity and reliability as the original instrument (Patrick & Beery 1991, Tezbasaran 1997, Sencan 2005). For this reason it was
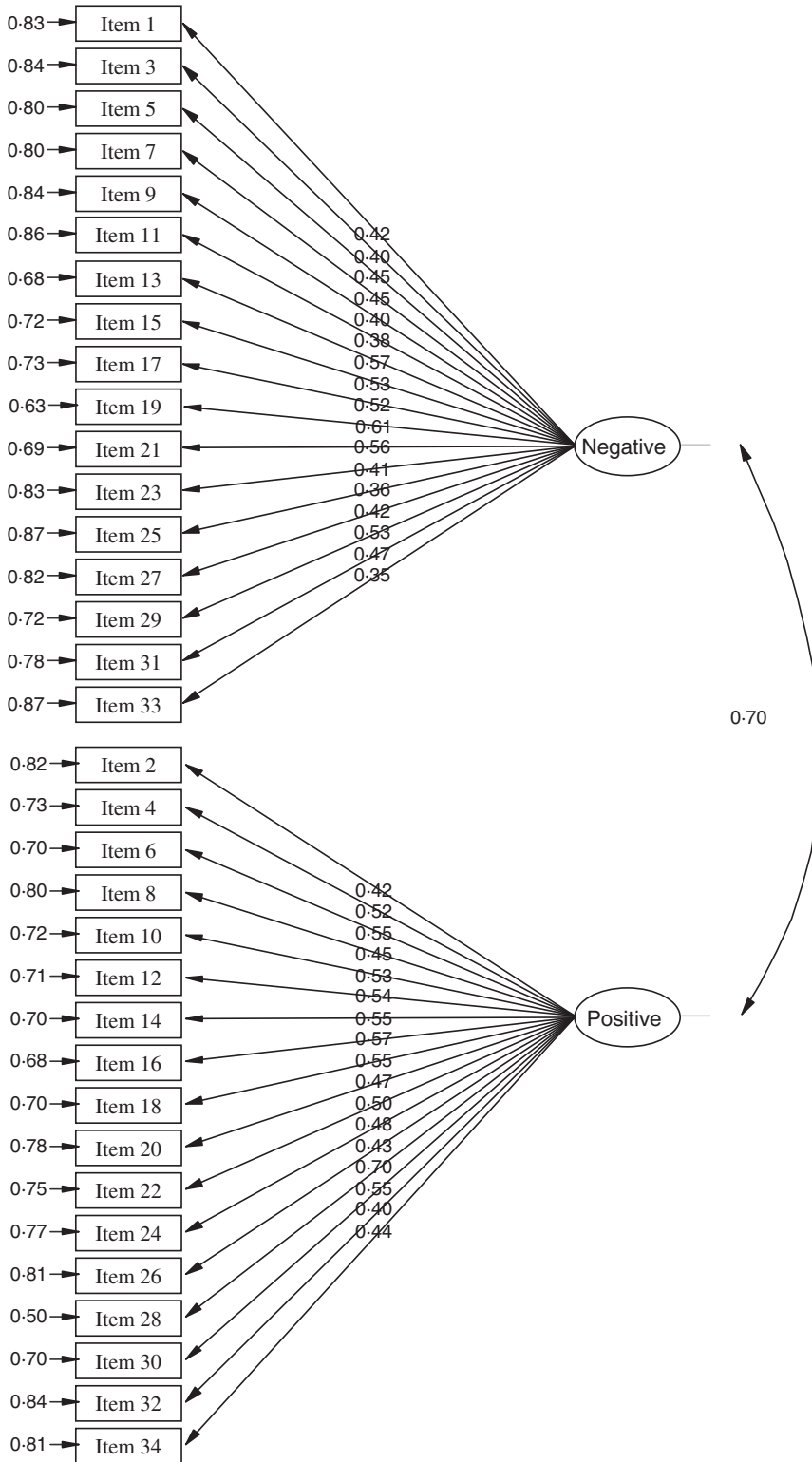
Figure 1 Kogan's Attitudes Toward Old People Scale's Confirmatory Factor Analysis Model.

necessary to evaluate the validity and reliability of the KAOPS for use in a Turkish population sample. The results of this study provide support for the reliability and validity of the KAOPS for assessing attitudes toward older people.

Validity

Confirmatory factor analysis is used to evaluate whether or not the items are adequately represented in subscales and whether or not the defined subscales adequately explain the

Table 2 Comparison of KAOPS and its subscale test-retest score means and correlations (n = 68)

KAOP subscales	First administration Mean (SD)	Second administration Mean (SD)	t^*	p	r	p
KAOP Total scale	147·44 (22·04)	148·63 (27·29)	0·637	0·526	0·83	0·001
Negative items	73·69 (13·15)	73·35 (14·89)	0·291	0·772	0·77	0·001
Positive items	73·75 (11·95)	75·28 (14·85)	1·226	0·224	0·73	0·001

*t-test in dependent groups: df = 67.

scale's original construct. Confirmatory factor analysis evaluates whether or not a factor's items' relationships with the factor are adequate (Patrick & Beery 1991, Sencan 2005, Simsek 2007). At the same time, confirmatory factor analysis is a method used to determine evidence of validity for use of an instrument in a different culture (Buyukozturk 2002). As a result of KAOPS confirmatory analysis the negative subscale factor load was 0·35–0·61 and the positive subscale was 0·40–0·70 (Fig. 1). Factor loads must be above 0·30. The KAOPS confirmatory analysis the scale factor loadings were found to be adequate and consistent with the model. RMSEA values near or below 0·08 indicate close fit (Simsek 2007, Harrington 2009). In this study RMSEA value was found 0·07. This value indicates data consistent with the model. SRMR values below 0·10 CFI and NNFI values close to or higher than 0·90 are indicative of a good fit (Harrington 2009). In this study SRMR, CFI and NNFI values indicated a good fit. These results support the construct validity of Turkish version of the KAOPS and that it is a valid instrument for use in Turkish samples.

Reliability

Reliability is the consistency between independent measurements of the same thing. Following the same procedure, using the same measurement methods and obtaining the same results means that the measurement is free from random errors (Salkind 2008). The KAOP scale and subscales demonstrated acceptable internal consistency. The alpha coefficients were 0·89 for the total scale and 0·82 for OP- and 0·85 for OP+, respectively. The Turkish version yielded the largest Cronbach's alpha for the total scale compared with the Swedish (0·79) (Söderhamn *et al.* 2000), Greek (0·80) (Lambrinou *et al.* 2005), Japanese (0·87) (Ogiwara *et al.* 2007) and Chinese (0·82) (Yen *et al.* 2009). The total scale and subscales were found to have a high level of reliability for internal consistency.

The correlation coefficient of item analysis is used for reliability analysis to determine to what degree an instrument's items are associated with the entire instrument (Tezbasaran 1997, Sencan 2005). Obtaining a high correla-

tion coefficient for each item demonstrates that that item is highly connected with the theoretical construct being measured, or that the item is influential and adequate to measure the targeted behaviour. It is recommended that the item coefficient be greater than 0·20 or 0·25 (Patrick & Beery 1991, Tezbasaran 1997, Sencan 2005). The item-total score correlations for the positive subscale of this instrument using correlation coefficients (Pearson's Product–Moment Correlation) were 0·43–0·58 and for the negative subscale were 0·38–0·57 (p < 0·001; Table 1), demonstrating statistical significance. All of the KAOPS's items demonstrated adequate correlation with their own subscale's total score and the subscales' item reliability was found to be high (p < 0·001, Table 1). The item-total score analysis is as much an indicator of reliability as it is accepted as an indication of validity (internal consistency) reflecting the scale's construct validity as well (Tezbasaran 1997, Sencan 2005).

Test–retest measurement of the stability of an instrument is the most frequently used analysis of reliability. It is frequently evaluated using the Pearson Product Moment Correlation (Tezbasaran 1997, Sencan 2005).The closer a correlation coefficient is to +1, the more reliable the tool over time. Correlation coefficient between test–retest scores on instruments should be at least 0·70 (Tezbasaran 1997, Sencan 2005). In this study, the stability coefficient between the two administrations of the KAOPS was found to be 0·83, negative subscale 0·77, positive subscale 0·73 (p < 0·001, Table 2). Therefore, the translated Turkish version of KAOPS was found to have a high level of reliability and the results between the two administrations of the scale were similar. Statisticians also recommend that the two test results' score means and standard deviations be examined for similarity (Tezbasaran 1997, Sencan 2005). When this calculation was done, no statistically significant difference was found in the score means (p > 0·05, Table 2). In the administration of the same instrument to individuals at different times, the individuals gave similar and consistent responses to items indicating the stability of the instrument (Tezbasaran 1997, Sencan 2005). The Turkish KAOPS was found to have a high level of reliability.

Conclusion

The Turkish version of the KAOPS is a reliable and valid instrument to measure attitudes toward older people. The psychometric properties of the original version of the KAOPS were preserved. Psychometric analysis of the Turkish version of KAOPS indicates high reliability (internal consistency) and good content and construct validity.

Relevance to clinical practice

This study provide evidence that Turkish version of the KAOPS is a reliable and valid instrument for assessing Turkish nursing students' positive and negative attitudes toward older people. It is easy and practical to use for both informants and investigators and appropriate for the Turkish Culture.

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Contributions

Study design: ÖK, HM; data collection and data analysis: ÖK, HM, BA and manuscript preparation: ÖK, HM.

Conflict of interest

None declared.

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