ORIGINAL ARTICLE

Psychometric properties of the Iranian version of the Kogan's Attitudes Toward Older People Scale

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Abstract

Aim: The purpose of this study was to assess the psychometric properties "validity" and "reliability" of the Iranian version of Kogan's Attitudes Toward Older People Scale (KAOPS).

Methods: The participants consisted of 350 nurses working in five teaching hospitals in Tehran, Iran. The scale was translated using the forward–backward translation technique. A two-phase data collection design was used in 2 weeks following the first completion. Exploratory factor analysis, content validity, construct validity, internal consistency, and stability–reliability was employed to check the scale's psychometric properties.

Results: The scale total scores were between 42 and 188. All of the 34 items were found to have significant item-to-total correlations ($P < 0.05$). Two factors were extracted – "prejudice' and "appreciation" – which contributed to the scale variance of 32.83% and 25.93%, respectively. Cronbach's alpha was 0.83 for the total scale as 0.83 for "prejudice" and 0.86 for "appreciation". In addition, the scale stability was reported to be 0.90 and 0.83 for "prejudice" and "appreciation", respectively. The average content validity was 0.95, and construct validity was in an acceptable range.

Conclusion: The Iranian version of the KAOPS was shown to be a valid and reliable instrument for measuring nurses' knowledge about elders. This scale can be used in future studies to gather high-quality data for improving elder care.

Key words: elder care, instrument validation, Iran, Kogan's Attitudes Toward Older People Scale, nurses' attitudes, psychometric property.

INTRODUCTION

In the current century, the number of elders worldwide has been increasing at a higher rate than before (UNPD, 2008). According to the Statistical Centre of Iran (SCI), the proportion of people aged 65 years and over in Iran accounted for 7.3% of the entire population (SCI, 2007). The health indicators of Iran show a consistent improvement and now are near those of developed countries (Farsi, Dehghan-Nayeri, Negarandeh, & Broomand, 2010).

It has been estimated that this rate will rise to 19% within the next 20 years (Amir-Sadri & Soleimani, 2005). The use of healthcare services by elders is increasing with their rising age (Wang *et al.*, 2009). The care of elders will have an increasingly important role in the remit of healthcare professionals, especially nurses (Ryan, Melby, & Mitchell, 2007), because they

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are the front-line healthcare professionals spending their whole time with elders (Wang, 2010). One of the most challenging healthcare issues is to provide quality care for elders. Therefore, it is equally important that nurses be adequately prepared to care for the growing population of elders (Wang *et al.*, 2009). In this regard, nurses as members of the interdisciplinary team have a pivotal role and are uniquely positioned to influence the quality care delivered to elders (Rejeh, Heravi-Karimooi, & Foroughan, 2010a, 2010b).

Caring for elders is affected by many factors such as nurses' knowledge, skills, and attitudes regarding elderly care. Negative attitudes and lack of knowledge about aging have a serious impact on caring for elders (Hweidi & Al-Obeisat, 2006). These negative attitudes can lead to ageism defined as a process of stereotyping and discriminating against elders (Kearney, Miller, & Smith, 2000). Providing appropriate care to elders requires exploration of nurses' attitudes toward elders, which may be rectified and improved through education (Akdemir, Cınar, & Grgülü, 2007). To reach the aim, the development of reliable and valid instruments to assess nurses' attitudes about elderly people is essential.

Kogan's Attitudes Toward Older People Scale (KAOPS) is a scale constructed in 1961 measuring the affective attitude of nurses towards elders (Kogan 1961a). This instrument has been used extensively and also translated into different languages. Erdemir, Kav, Citak, Hanoglu, and Karahan (2010) have noted that several studies have been conducted using this scale since its initial introduction to the empirical published work. In addition, this scale has been found to possess high reliability and validity values in several international research studies conducted in different countries such as Norway and the USA (McCracken, Fitzwater, Lockwood, & Bjork, 1995), Sweden (Soderhamn, Gustavsson, & Lindencrona, 2000), Greece (Lambrinou, Sourtzi, Kalokerinou, & Lemonidou, 2005), Jordan (Hweidi & Al-Hassan 2005), Japan (Ogiwara & Koshizu 2007), Taiwan (Yen *et al.*, 2009), and Turkey (Erdemir *et al.*, 2010; Küçükgüçlü *et al.* 2011). It is known that 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 (Sencan, 2005). Therefore, because the Iranian version of the scale has not been translated and validated, the purpose of this study was to test the psychometric properties "validity" and "reliability" of the Iranian version of the KAOPS.

METHOD

Participants and procedure

The participants were registered nurses working in medical/surgical wards of five teaching hospitals in Tehran, Iran. In total, 360 questionnaires were distributed, but the final sample consisted of 350 nurses (response rate = 97.22%). Data was collected at two different points in time (with a 14 day interval). In other words, 2 weeks following the first completion, the KAOPS was given again to 70 subjects who were willing to take part in this study. For the second phase of this study, 72 people of the participants were selected and only two people could not participate because of being ill and being on a delivery leave. The following inclusion criteria were used to choose the participants: being able to speak and understand Persian and willingness to participate in this study.

The forward–backward translation technique was applied to translate the questionnaire from its original language (English) into Persian. The KAOPS was first translated from English to Persian separately by two bilingual linguists. Another expert reviewed the translations together to check for inconsistencies with the original one and minor revisions were suggested in some areas, which resulted in creating one Persian version of the scale. Subsequently, it was translated back from Persian to English by two bilingual language experts.

The back translated version and the original one were compared and found to be highly similar in meaning. Then, an expert panel consisting of 20 members (geriatrician, sociologist, faculty members from nursing, health management, psychology and nursing departments and clinical nurses) were asked to rate each item of the Persian version based on relevance, clarity, and simplicity as: (i) not relevant; (ii) somewhat relevant; (iii) relevant; or (iv) very relevant. Finally, according to their recommendations, some changes were made and pilot testing was performed with 20 nurses.

Measurement

The questionnaire included a cover letter introducing the purpose and importance of the study, demographic data questions, and the self-administered KAOPS. The data gathered in the demographic section consisted of the participants' sex, age, experience, educational level, and past experience of caring for elder relatives. In addition, the KAOPS consisted of 34 items regarding elder people. The scale consisted of one set including 17 items expressing negative statements (KAOP–) and the second

set including 17 items expressing positive statements (KAOP+) about elders. The scale was designed as a summed Likert attitude scale on 6 point response categories that ranged from 1 (strongly disagree) to 7 (strongly agree). These categories were scored 1, 2, 3, 5, 6, and 7, respectively, with a score of 4 assigned in the rare case of failure to respond to an item. Scores on the negatively worded items had to be reversed to obtain the total score. The possible score was between 34 and 238. A higher total score indicated a more positive attitude (Kogan, 1961b). It should be said that a score of 102 was considered a neutral attitude toward elders (Kearney *et al.*, 2000).

Data analysis

SPSS software (version 16.0 for Windows; SPSS, Chicago, IL, USA) was used for the data analysis. The Kaiser–Meyer–Olkin (KMO) test and the Bartlett test of sphericity were applied to measure sample adequacy and to examine the correlation matrix, respectively. Moreover, content validity, construct validity, internal consistency reliability, and stability of the scale were assessed. Content validity was assessed through experts' comments. Factor analysis employing principal component analysis with varimax rotation was conducted to ensure the construct validity of the scale and the acceptable level for scale items was set to be above 0.30. In order to assess the scale's stability over time, test–retest reliability of the scale was measured with 70 nurses at a 14 day interval. Cronbach's alpha was used to estimate the internal consistency reliability. Stability was assessed using a repeated measure design with a 14 day interval and Pearson correlations and intraclass correlation coefficient (ICC) were calculated.

Ethical considerations

Permission was obtained from Professor Nathan Kogan who held the copyright for the KAOPS. The study was approved by the research council affiliated to Shahed University. Official permission was obtained from the teaching hospitals in Tehran, Iran, before entering the research zones. Other ethical considerations addressed were the participants' autonomy, confidentiality, and anonymity throughout the study process. The participants were informed that study participation involved no harm or discomfort and they would receive no direct benefit from their participation. Lastly, from those nurses who showed a willingness to participate in this study, informed consent was obtained.

RESULTS

Demographic data and KAOPS scores

All of the nurses (100%) invited to participate in this study returned the KAOPS questionnaire. Table 1 summarizes the demographic characteristics of the nurses and the score of the KAOPS according to each characteristic. The survey took approximately 21.30 min (standard deviation [SD] = 2.4 min) to complete. Nurses' age ranged 23–49 years with a mean age of 31.01 years (SD = 5.96 years). Of the nurses, 71% were female. The sample mean total score was 98.73 (SD = 31.51).

As shown in Table 1, higher scores were reported from those head nurses (with more positive attitudes), and nurses who had past educational experiences such as a course in their masters degree regarding gerontology or had past experiences of caring for older relatives. In this study, female nurses had more negative attitudes toward older people than male nurses. Table 2 shows factor loadings after varimax rotation for the KAOPS.

Validity

Content

The average content validity (S-CVI/Ave) was 0.95 in the final version, indicating adequate content validity (Polit & Beck, 2004). In addition, the KAOPS was given to 20 nurses who were not included in the main sample and their feedback incorporated into the final version. Nurses stated that this questionnaire was easy to read and understand.

Construct

Construct validity was assessed using factor analysis and the known-groups technique. The numbers of factors were determined by the eigenvalues (1), the KMO, screen plots, loadings of over 0.40, in order to reduce the effect of some variables that contributed to other factors. The KMO coefficient and Bartlett's test of sphericity were sufficiently high, 0.92 and 0.86, respectively. Accordingly, the sample size was appropriate for a factor analysis. Two factors were extracted and explained 58.76% of the variance. All 34 items demonstrated moderate to strong loading (Table 2). Factor 1, labeled "prejudice" (negative items) explaining 32.83% of the variance, "appreciation" (positive items) explaining 25.93% of the variance. Additionally, construct validity was also assessed using factor analysis, the known-groups technique involved the comparison between subjects who had working experience of more

Table 1 Demographic characteristics and their related KAOPS scores (*n* = 350)

Parameters	N (%)	KAOPS score, mean ± SD
Age (mean, 31.01 ± 5.96; range, 23–49), years		
≤30	134 (38.30)	91.88 ± 30.18
31–39	164 (46.80)	107.93 ± 30.05
≥40	52 (14.90)	87.34 ± 31.71
Sex		
Female	249 (71.10)	99.56 ± 31.20
Male	101 (28.90)	99.68 ± 32.34
Years of working experience (mean, 10.00 ± 6.30; range, 2–25)		
<10	186 (53.10)	91.70 ± 30.13
≥10	164 (46.90)	106.69 ± 31.23
Past experiences of caring for older relatives		
Yes	149 (42.60)	110.13 ± 29.28
No	201 (57.40)	83.34 ± 27.72
Past educational experiences		
Yes	18 (5.10)	104.05 ± 29.57
No	332 (94.90)	98.44 ± 31.63
Position		
Head nurse	44 (12.60)	101.53 ± 31.11
Nurse	306 (87.40)	79.20 ± 27.33
Educational level		
BSN	332 (94.90)	98.44 ± 31.63
MSN	18 (5.10)	104.05 ± 29.57

BSN, Bachelor of Science in Nursing; KAOPS, Kogan's Attitudes Toward Older People Scale; MSN, Master of Science in Nursing; SD, standard deviation.

than 10 years with those of 10 years or less, and those who had past experiences of caring for older relatives with those nurses who had not (Table 3). The result was statistically significant ($P < 0.001$).

Reliability

Internal consistency

According to the findings, Cronbach's alpha was 0.83 for the total scale, 0.83 for "prejudice", and 0.86 for "appreciation".

Stability

The Pearson correlation coefficients (*r*) for test–retest between items were 0.44 and 0.85 showing a positive correlation. The test–retest ICC for the total scale was 0.90. Stability reliability was reported to be adequate in this study.

DISCUSSION

Of the total 350 nurses who participated in this study, 28.90% were male and 71.10% were female. Mean years of working experience was 10.00 ± 6.30 years. To have a reliable scale for measuring the Iranian popula-

tion's attitudes towards elders, the KAOPS was translated into Persian. Then, the psychometric properties of the Iranian version of the scale was tested by using a sample of nurses. The Iranian version of the KAOPS indicated good content validity because the CVI was 0.95.

Construct validity showed the capability of the scale to differentiate between nurses who had working experience of more than 10 years with those of 10 years or less, indicating how their experiences affected their attitudes towards the elders. The KAOPS showed more positive attitudes for the more experienced nurses in all the hospitals. Soderhamn *et al*. (2000) and Lambrinou *et al*. (2005) reported a similar conclusion that little or no previous experience of caring for elderly people in clinical nursing is consistent with more unfavorable feelings toward elders.

Construct validity was supported in the factor analysis. KMO coefficient and Bartlett's test of sphericity were reported to be high enough. Moreover, factor analysis in a two factor solution was found to explain the 58.76% of variance. The cut-off point for the factor loadings was set at 0.40 in order to reduce the effect of some variables. Therefore, we did not exclude any item

Table 2 Results, factor loadings after varimax rotation, and test–retest correlations (*r*) for KAOPS

	Item content	Prejudice	Appreciation	*r*
1N	The elderly should live in special residences	0.52	0.72	0.77
1P	The elderly should live integrated with the young	0.68	0.06	0.70
2N	The elderly are different	0.00	0.68	0.44
2P	The elderly are not different from anyone else	0.78	0.03	0.55
3N	The elderly are unable to change	0.04	0.85	0.565
3P	The elderly are capable of new adjustment	0.87	0.06	0.69
4N	The elderly quit work when they become pensioners	0.02	0.81	0.62
4P	The elderly prefer to work as long as they can	0.81	0.07	0.73
5N	The elderly have shabby homes	0.53	0.76	0.68
5P	The elderly have clean, attractive homes	0.84	0.07	0.53
6N	Wisdom does not come with advancing age	−0.00	0.81	0.76
6P	The elderly grow wiser with advancing age	0.89	0.41	0.79
7N	The elderly have too much influence in society	−0.00	0.75	0.56
7P	The elderly should have more power in society	0.64	−0.00	0.74
8N	The elderly make others feel ill at ease	0.07	0.47	0.76
8P	The elderly are relaxing to be with	0.71	0.00	0.56
9N	The elderly bores others with their stories	−0.00	0.53	0.85
9P	It is nice when the elderly speak about their past	0.77	0.10	0.69
10N	The elderly are always prying into the affairs of others	0.04	0.73	0.50
10P	The elderly mind their own business	0.78	0.05	0.68
11N	The elderly have irritating faults	0.11	0.68	0.73
11P	The elderly have the same faults as the young	0.85	0.03	0.70
12N	The elderly have a negative influence on a neighborhood	0.03	0.84	0.57
12P	Neighborhoods are nice when integrated with the elderly	0.81	0.04	0.66
13N	The elderly are much alike	0.26	0.69	0.64
13P	The elderly are different from one another	0.89	0.03	0.71
14N	The elderly are untidy	0.11	0.66	0.71
14P	The elderly are clean and neat	0.87	−0.01	0.54
15N	The elderly are irritable, grouchy, and unpleasant	0.01	0.77	0.61
15P	The elderly are cheerful, agreeable, and good-humored	0.83	0.09	0.72
16N	The elderly complain about the young	0.07	0.64	0.62
16P	The elderly seldom complain about the young	0.83	0.09	0.47
17N	The elderly have excessive demands for love	0.10	0.59	0.59
17P	The elderly need no more love than others	0.75	0.12	0.52

Note: *r* = Pearson correlation. *P* < 0.001. KAOPS, Kogan's Attitudes Toward Older People Scale.

from the original scale. The factor loading in this study was higher than the minimum recommended by Burns and Grove (1997), as well as that used by Soderhamn *et al.* (2000) and Lambrinou *et al.* (2005) in the factor analysis of the same scale.

Homogeneity of the scale was assessed by using Cronbach's alpha coefficient and reliability coefficient of both subscales, which were medium to high and similar to those found in other studies. The factor analysis of the scale showed two groups of items as follow: factor 1 ("appreciation") including all positive items that expressed positive feelings and opinions towards elders; and factor 2 ("prejudice") including all negative items with negative feelings and opinions toward elders. The

findings were similar to those of some international studies about items expressing prejudice and appreciation (Chi-Hua Wen-Chun, Yu-Ru, Min-Chen, Meng-Chih, & Cheng-Ching, 2009; Erdemir *et al.*, 2010; Küçükgüçlü *et al.*, 2011; Ogiwara & Koshizu, 2007), and also different to some other studies (Lambrinou *et al.*, 2005; Soderhamn *et al.*, 2000).

The Iranian version of the KAOPS showed an acceptable internal consistency reliability (0.83) as well as stability, which made it comparable with other international versions of this scale; for example, Cronbach's alpha for other versions were as follows: the Japanese version, 0.87 (Ogiwara & Koshizu, 2007); Greek, 0.80 (Lambrinou *et al.*, 2005); Chinese, 0.82 (Yen *et al.*,

Table 3 Construct validity of the KAOPS using the known-groups technique

	>10 years(n = 186)	≤10 years (n = 164)
	Mean ± SD	Mean ± SD
Prejudice	34.58 ± 5.65	35.02 ± 6.33
Appreciation	57.12 (28.48)	70.74 (28.90)
Total	91.70 ± 30.13	106.69 ± 31.23
	Had caring older relatives (n = 149)	Did not have caring older relatives (n = 201)
	Mean ± SD	Mean ± SD
Prejudice	34.51 (4.30)	34.99 (6.96)
Appreciation	48.83 (25.83)	74.38 (27.19)
Total	83.34 (27.72)	110.13 (29.28)

$P < 0.05$, using independent Student's t-test. KAOPS, Kogan's Attitudes Toward Older People Scale; SD, standard deviation.

2009); Swedish, 0.79 (Soderhamn *et al.*, 2000); and Turkish, 0.84 (Erdemir *et al.*, 2010). The stability ICC for the total scale was 0.90.

In this study, female nurses had more negative attitudes toward elders than male nurses. In Iran, similar to other eastern countries, women are responsible for taking care of elders in the family, which is considered an extra burden on them. Therefore, this extra burden may negatively influence female nurses' attitudes toward elders. This result parallels the findings of other studies (Hweidi & Al-Obeisat, 2006) indicating that female nursing students have more negative attitudes toward older people than male nursing students. However, this result is inconsistent with other studies stating that women in eastern countries fulfill the caregiver role because they are socialized to enact caring and nurturing roles (Soderhamn *et al.*, 2000). Moreover, Sheffler (1998) indicated that sex differences were not found to be important in affecting students' attitudes toward elders. Our study participants were similar to the participants of the Turkish study who reported a more positive attitude toward elders compared to the finding of studies from Jordan (Hweidi & Al-Obeisat, 2006), Sweden (Soderhamn *et al.*, 2000), and China (Yen *et al.*, 2009). Nursing education and previous work experiences in gerontology are considered important factors in shaping attitudes toward elders. Therefore, lack of educational preparation is a major obstacle to the delivery of quality care to elders (Rejeh, Heravi-Karimooi, & Vaismoradi, 2011; Rogan & Wyllie, 2003).

In this study, experienced nurses who tended to have more knowledge and educational experiences of caring for elders reported more positive attitudes. In contrast, Sheffler (1998) indicated no correlation between the care

provider age and the KAOPS score. The older population is growing in Iran and there is a need for greater gerontological education for healthcare professionals, especially nurses. The quality of care provided for elders is directly related to nurses' attitudes. Educators and health managers must better prepare nurses to deliver high-quality care to the booming older population.

Limitations of this study

This study had some limitations to consider when interpreting the results. First, no information was available on those who did not participate due to the Private Information Protection Law. Therefore, we could not compare the perspectives of participants and the nonparticipants. However, the effects of a possible sampling bias on this study were probably not crucial because the purpose of the study was to assess the scale, not to describe a precise picture of nurses' perspectives about elders. A further limitation of this study may be related to a non-random sampling as well as a small sample size, which may influence the reliability of the scale.

CONCLUSION

Psychometric analyses of the Iranian version of the KAOPS indicated a high reliability (internal consistency and stability) and an acceptable content and construct validity. The results of this study showed that this scale in Iran is an instrument with adequate reliability coefficients, although the validity of the instrument was partially supported by the results. Nevertheless, further testing in future studies and with different samples such as students and healthcare professionals will be useful. Based on these findings, it is recommended that this version of the KAOPS be incorporated or adapted by health-related professions as one of the instruments used to assess healthcare providers' attitudes toward elders. Hopefully, nursing and other clinicians could help in preparing future healthcare professionals capable of meeting the needs of elders by using the Iranian version of the KAOPS.

Relevance to clinical practice

This study provides evidence that the Iranian version of the KAOPS is a reliable and valid instrument for assessing Iranian nurses' attitudes toward elders. Therefore, it is suitable to be applied by researchers, educators, healthcare system administrators, and policy makers to improve the quality of care delivered to elders.

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