

## RESEARCH METHODOLOGY

# Nursing student attitudes towards older people: validity and reliability of the Italian version of the Kogan Attitudes towards Older People scale

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## Abstract

**Aim.** This paper reports a study testing the validity and reliability of the Italian version of the Kogan Attitude towards Older People scale.

**Background.** Nursing students' attitudes towards older people can affect their preference for working with them. One of the most common instruments used to assess these attitudes is the Kogan Attitude towards Older People scale. Previous validation studies performed on college students internationally have demonstrated good reliability and validity. The psychometric properties of the Italian version have not yet been tested.

**Design.** A cross-sectional, descriptive study.

**Method.** The study was conducted from March–June 2010 with a convenience sample of nursing students attending two Italian universities. Reliability was evaluated using internal consistency and item-to-total correlation. Content and construct validity were evaluated using a content validity index and principal factor analysis.

**Results.** A total of 1637 nursing students participated in the study. Two factors were extracted from the factor analysis: prejudice describing a negative disposition and appreciation indicating a favourable feeling and opinion towards older people.

**Conclusion.** The Kogan Attitude towards Older People scale applied to Italian nursing students exhibited good internal consistency. The two-dimensional construct of the scale was congruent with some, but not all, results of previous studies due to methodological differences among the studies. Based on the study findings, the scale can be recommended for future research studies in Italy including use as pre/post-test measurement associated with nursing education programmes.

**Keyword:** attitudes, factor analysis, nurses, nursing student, older people, reliability, validity

## Introduction

One of the most significant factors impacting the preference of nurses to work with older people, and on the quality of care offered to them, is the attitude towards older people (Lookinland & Anson 1995, Pursey & Luker 1995, Wade 1999, McDowell *et al.* 1999, Courtney *et al.* 2000, Jacelon 2002). The attitudes of nursing students have also been studied, as researchers believe that any student preconception and prejudice towards older people can affect their future career choice and determine their attitudes as healthcare personnel (Mezinskis & Purdon 1995, Stevens & Crouch 1995, Happell 2002, DeKeyser Ganz *et al.* 2006). However, it has also been shown that student attitudes about elder care can be modified in a more positive direction by educators (McCracken *et al.* 1995, Matarese *et al.* 2008).

## Background

An attitude is defined by social psychologists as ‘a tendency to evaluate an entity with some degree of favour or disfavour, ordinarily expressed in cognitive, affective and behavioural responses’ (Eagly & Chaiken 1993, p. 155). It is possible to measure the attitudinal responses by using standardized and well-tested instruments.

The most widely used instruments in education to assess the attitudes towards older people are the Ageing Semantic Differential (ASD) and the Kogan Attitudes towards Older People scale (KAOP) (Iwasaki & Jones 2008). The first ASD version, developed by Rosencranz and McNevin (1969) and the successive version refined by Polizzi (2003) referred to men and, subsequently, women of 70–85 years old. The age-specific targets of this scale limits practical use for the evaluation of the attitudes towards a general older population (Iwasaki & Jones 2008). Instead, the KAOP was developed to assess the attitudes towards older people regardless of gender and age. It was developed in 1961 by Nathan Kogan based on a ‘quasi-minority’ view of an older people paradigm, that considered the similarities and dissimilarities that older people shared with racial, ethnic, and religious groups with minority status (Kogan 1961a). Kogan constructed a set of 17 items with the statements worded negatively (KAOP–) and a second set of 17 items with the statements reversed (KAOP+), resulting in a total 34 item scale.

The reliability and validity of KAOP was first examined by Kogan and later by Iwasaki and Jones (2008) among American college students. Further validation studies were conducted on college students and on healthcare personnel to assess its applicability in Sweden (Soderhamn *et al.* 2000), Turkey (Erdemir *et al.* 2010), Greece (Lambrinou *et al.*

2005), Japan (Ogiwara *et al.* 2007), and China (Yen *et al.* 2009). However, except for a small pilot study (Matarese *et al.* 2010), no study has been conducted in Italy to evaluate the validity of the KAOP in measuring the attitudes towards older people among Italian nursing students.

## The study

### Aim

The aim of this study was to test the validity and reliability of the Italian version of KAOP scale and, consequently, compare its psychometric properties with those obtained from the previous validation studies.

### Design

We used a descriptive, cross-sectional design.

### Participants

Undergraduate nursing students attending two Universities in Rome, one public and one private, were recruited during the academic year 2009–2010. Both schools provided a 3-year higher education programme. Voluntary participation was advertised for all students enrolled in either their first, second, and third year.

### Instrument

The KAOP was designed as a Likert scale with six-point response categories ranging from 1 (strongly disagree)–7 (strongly agree) with a neutral score of 4 assigned in case of failure to respond to an item. A higher score on the positive scale (obtained by summing the scores of all positive items) designates a favourable disposition towards older adults and a higher score on the negative scale (summing scores of all negative items) denotes an unfavourable disposition. To obtain the total KAOP score, scores on the negatively worded items have to be reversed. The total score range between 34–238, with higher total scores indicating more positive attitudes (Kogan 1961a). We obtained permission for the use of the KAOP from prof. Kogan. We translated the scale according to the ‘forward and backward translation’ method.

### Data collection

Data were collected from March–June 2010. Administration of the questionnaires occurred at the beginning of second semester with instrument distribution to students during

class hours in an effort to obtain the maximum student participation. The instructors left the class during the tool administration and a researcher remained to oversee the process of filling out the questionnaires and to be available for clarification if requested by students.

### Ethical considerations

The study was approved by the institutional boards of the two universities involved in the study. Informed consent was obtained from all participants. To assure anonymity, students were asked not to place their names on the questionnaire.

### Data analysis

Descriptive statistics were used to characterize the sample. Validity and reliability were assessed for the total scale and the two subscales. Content validity was established using the Hambleton method: a panel of 11 experts, selected among geriatric physicians, nurses, and psychologists, rated the relevance of each item, scoring from 1 (non-relevant item)–4 (very relevant item) (Pedrabissi & Santinello 1997).

We assessed the construct validity by employing principal factor analysis (PFA) with promax rotation. We performed the Kaiser–Meyer–Olkin (KMO) test of sample adequacy and the Bartlett's test of sphericity to evaluate the factorability of the correlation matrix. The number of factors was estimated by using multiple methods (scree plot, proportion of variance, interpretability criterion, and comparability across samples) to assure the best factor solution. To account for the sample size, we considered statistically significant the loading obtained doubling the standard error ( $\alpha = 0.01$ ) (Stevens 2002). We tested the reliability as internal consistency calculating the Cronbach's coefficient alpha and item-to-total correlation. We used the SAS V9.0 per Windows (SAS Inc., Cary, NC, USA) program for data analysis.

## Results

### Participant characteristics

A total of 1637 nursing students of 2240 (73.1%) enrolled in the two universities returned the fully completed KAOP. Female students comprised the majority ( $n = 1133$ , 69.2%) of respondents. The largest number of students were either in their first year ( $n = 585$ , 35.7%) and third year ( $n = 585$ , 35.7%) of studies. Students' age ranged from 18–54 years with a mean age of 25-year-old ( $SD 5.9$ ). The KAOP mean score was 144.3 ( $SD 17.9$ ), indicating a slightly positive attitude towards older people.

### Content validity

The content validity index (CVI) was computed using the proportion of experts who were in agreement about item relevance. The average CVI was 0.81 indicating adequate content validity ( $CVI > 0.80$ ; Polit & Beck 2004).

### Construct validity

The KMO index was 0.84 and the Bartlett's test of sphericity was statistically significant ( $\chi^2 = (561) 9809$ ,  $P < 0.001$ ), indicating that the distribution of KAOP data met the psychometric criteria to proceed in factor analysis.

Responses to the total 34-item scale were subjected to an exploratory factor analysis using squared multiple correlations as prior communality estimates. In the initial exploratory factor analysis using the scree plot, a first large break appeared between factor 1 and 2; and a second smaller break between factor 2 and 3. Using the proportion criterion, we obtained eigenvalues of 4.5, 1.85, and 1.05; the first two factors explained 78% of the total variance and adding the third factor, the total variance increased to 91%. Both methods indicated that a two factor solution could be plausible, although an additional factor could not readily be dismissed (Hatcher 1994). Subsequently, we examined the two and three factor solutions by splitting the data into two samples and exploring the stability of the solutions across the two halves, as the true factors tend to be stable across samples, whereas the spurious factors are more unstable (Fabrigar *et al.* 1999).

On the basis of these evaluations, a two factor solution was chosen. In addition to the orthogonal solution, we also examined oblique solution using promax rotation. We considered statistically significant the loading of 0.16, obtained by doubling the standard error, to take into account the sample size (for  $> 1000$  sample and  $\alpha = 0.01$ ,  $CV = 0.081$ ) (Stevens 2002). The loadings for each item were examined in the factor pattern matrix and in the structure matrix (Table 1).

Factor 1, labelled 'Prejudice', comprised all the items evaluating the negative feelings and stereotyped beliefs towards the older people. Factor 2, labelled 'Appreciation', consisted mainly of all the items that highlighted the personal and social positive aspects of the older people. Only the item 17P had a negative loading above the 0.16 criterion on Factor 1.

The factor analysis performed separately on the two subscales confirmed the one factor solution for the KAOP– and a factor solution for the KAOP+. The item 17P showed a negative weight on KAOP+, confirming its non-correlation with the positive scale.

**Table 1** Factor loadings from the rotated factor pattern and factor structure matrix and prior communalities for Kogan Attitudes towards Old People total scale ( $N = 1637$ ).

| Item |  | Factor pattern |              | Factor structure |              | h <sup>2</sup> |
|------|--|----------------|--------------|------------------|--------------|----------------|
|      |  | Prejudice      | Appreciation | Prejudice        | Appreciation |                |
| 1N   | It would probably be better if most old people lived in residential units with people of their own age                 | 0.42           | 0.00         | 0.42             | -0.15        | 0.22           |
| 2N   | There is something different about most old people: it's hard to figure out what makes them tick                       | 0.39           | 0.13         | 0.35             | -0.01        | 0.18           |
| 3N   | Most old people get set in their ways and are unable to change   | 0.39           | -0.06        | 0.41             | -0.20        | 0.25           |
| 4N   | Most old people would prefer to quit work as soon as pensions or their children can support them                       | 0.49           | 0.04         | 0.47             | -0.13        | 0.27           |
| 5N   | Most old people tend to let their homes become shabby and unattractive   | 0.53           | -0.06        | 0.55             | -0.24        | 0.37           |
| 6N   | It is foolish to claim that wisdom comes with old age  | 0.14           | -0.10        | 0.17             | -0.15        | 0.26           |
| 7N   | Old people have too much power in business and politics  | 0.26           | -0.06        | 0.28             | -0.15        | 0.17           |
| 8N   | Most old people make one feel ill at ease  | 0.58           | 0.01         | 0.57             | -0.20        | 0.32           |
| 9N   | Most old people bore others by their insistence on talking about the 'good old days'                                   | 0.50           | -0.08        | 0.53             | -0.26        | 0.30           |
| 10N  | Most old people spend too much time prying into the affairs of others and giving unsought advice                       | 0.56           | -0.06        | 0.58             | -0.26        | 0.39           |
| 11N  | If old people expect to be liked, their first step is to try to get rid of their irritating faults                     | 0.51           | 0.14         | 0.46             | -0.04        | 0.21           |
| 12N  | In order to maintain a nice residential neighbourhood, it would be best if too many old people did not live in it      | 0.45           | -0.05        | 0.47             | -0.22        | 0.24           |
| 13N  | There are a few exceptions, but in general most old people are pretty much alike                                       | 0.45           | 0.23         | 0.36             | 0.07         | 0.18           |
| 14N  | Most old people should be more concerned with their personal appearance, they're too untidy                            | 0.56           | 0.02         | 0.55             | -0.18        | 0.34           |
| 15N  | Most old people are irritable, grouchy and unpleasant  | 0.66           | 0.01         | 0.66             | -0.23        | 0.40           |
| 16N  | Most old people are constantly complaining about the behaviour of the younger generation                               | 0.29           | 0.02         | 0.28             | -0.09        | 0.23           |
| 17N  | Most old people make excessive demands for love and reassurance  | 0.31           | 0.16         | 0.26             | 0.04         | 0.12           |
| 1P   | It would probably be better if most old people lived in residential units that also housed younger people              | 0.02           | 0.26         | -0.07            | 0.25         | 0.12           |
| 2P   | Most old people are really not different from anybody else: they are as easy to understand                             | 0.26           | 0.25         | 0.18             | 0.16         | 0.19           |
| 3P   | More old people are capable of new adjustments when the situation demands it   | 0.07           | 0.34         | -0.05            | 0.33         | 0.15           |
| 4P   | Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody | -0.20          | 0.36         | -0.33            | 0.43         | 0.31           |
| 5P   | Most old people can generally be counted to maintain a clean, attractive home  | 0.20           | 0.39         | -0.34            | 0.46         | 0.33           |
| 6P   | People grow wiser with the coming of old age   | 0.10           | 0.40         | -0.04            | 0.36         | 0.30           |
| 7P   | Old people should have more power in business and politics   | 0.19           | 0.33         | 0.07             | 0.27         | 0.17           |
| 8P   | Most old people are very relaxing to be with   | -0.15          | 0.46         | -0.32            | 0.51         | 0.26           |
| 9P   | One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences  | 0.12           | 0.42         | -0.27            | 0.46         | 0.28           |
| 10P  | Most old people tend to keep to themselves and give advice only when asked   | 0.01           | 0.30         | -0.11            | 0.30         | 0.14           |
| 11P  | When you think about it, old people have the same faults as anybody else   | -0.01          | 0.24         | -0.09            | 0.24         | 0.13           |
| 12P  | You can count on finding a nice residential neighbourhood when there is a sizeable number of old people living in it   | 0.23           | 0.45         | 0.07             | 0.36         | 0.21           |
| 13P  | It is evident that most old people are very different from one another   | -0.12          | 0.14         | -0.17            | 0.18         | 0.15           |

Table 1 (Continued).

| Item  | Factor pattern |              | Factor structure |              | h <sup>2</sup> |
|---|----------------|--------------|------------------|--------------|----------------|
|   | Prejudice      | Appreciation | Prejudice        | Appreciation |                |
| 14P Most old people seem to be quite clean and neat in their personal appearance          | -0.18          | <b>0.47</b>  | -0.35            | <b>0.53</b>  | 0.33           |
| 15P Most old people are cheerful, agreeable and good humoured                             | 0.00           | <b>0.53</b>  | -0.19            | <b>0.53</b>  | 0.26           |
| 16P One seldom bears old people complaining about the behaviour of the younger generation | 0.15           | <b>0.27</b>  | 0.05             | <b>0.21</b>  | 0.16           |
| 17P Most old people need no more love and reassurance than anyone else                    | -0.32          | -0.04        | -0.33            | -0.16        | 0.18           |
| Eigenvalues   | 4.29           | 2.73         |                  |              |                |

The factor loadings higher than 0.16 are indicated in bold.

h<sup>2</sup> = communalities.

### Reliability

For the total KAOP the overall Cronbach's coefficient alpha was 0.76 and this value was not improved by removal of any item except when 17P item was deleted and alpha rose to 0.78. The coefficient alphas were 0.80 for the KAOP- and 0.66 for KAOP+. The correlations were slightly higher for the KAOP-, confirming greater homogeneity of the items in the negative scale (Tables 2 and 3). Again, the 17P item in the positive subscale showed a negative correlation with the other items and its elimination slightly improved the internal consistency of the scale (0.68). For the KAOP- no improvement was obtained by eliminating any items.

### Discussion

The KAOP has been broadly used in education and research worldwide to assess the attitudes towards older people, but it has never been tested and used in Italy. With the present study we aimed to fill this void and evaluate its psychometric properties in the Italian version. Our study comprised a large sample ( $N = 1637$ ), although it consisted of nursing students coming exclusively from one of the biggest cities in Italy. However, the age range of students was broad (18–54 years old), not limiting the estimates of scale properties only to the youngest generation. Two other study limitations should be considered: firstly, the test-retest reliability was not appraised due to organizational reasons (difficulties in repeating the tool administration on the same student population); and secondly, concurrent validity procedures were not performed because of the lack of another validated and reliable instrument for testing the attitude towards older people.

We compared our results with those reported in other validation studies of KAOP obtained from a literature research performed on PUBMED and CINAHL databases.

Five studies, beside the two Kogan's studies (Kogan 1961a, 1961b), addressed the issue of scale validation on college students and they were performed in the last 11 years in different countries (USA, Turkey, Greece, China, and Sweden) (Table 4). The Italian version of the total KAOP showed an internal consistency lower than those obtained in other international studies ( $\alpha = 0.76$ ), but still higher than the acceptable cut-off of 0.70 suggested by Nunnally (1978). The two subscales, evaluated separately, exhibited different psychometric properties. The KAOP- presented a higher reliability coefficient ( $\alpha = 0.80$ ) than KAOP+ ( $\alpha = 0.66$ ), consistently with the results of the most validation studies. Therefore, our results confirm that the negative subscale items are more homogeneous and consistent than those in the positive subscale.

In all the validation studies, the principal component analysis (PCA) was used to perform the factor analysis, with the aim to reduce the variables to a smaller and manageable number. However, PCA is not considered the most appropriate strategy for identifying the factor structure underlying a set of variables (Hatcher 1994, Fabrigar *et al.* 1999). In fact in the Swedish (Soderhamn *et al.* 2000), Turkish (Erdemir *et al.* 2010), Chinese (Yen *et al.* 2009), and Greek (Lambriou *et al.* 2005) studies, PCA resulted in several components at the primary analysis that demanded further factors reduction and extraction techniques. In our study, we used the PFA according to the opinion of the psychometric experts. Oblique rather than orthogonal rotation was preferred, as the variables in the KAOP are correlated (Fabrigar *et al.* 1999, Hatcher 1994).

Our results confirm that the KAOP is not an one-dimensional scale, but a scale with two main latent constructs: a strong factor identifiable as 'Prejudice', where the negative correlated items describe negative predisposition towards older people and a factor identified as 'Appreciation', where

**Table 2** Correlation item with total scale, Cronbach's alpha 'if deleted' for Kogan Attitudes towards Old People negative subscale (KAOP-).

| Item  | Correlation with total | Alpha 'if deleted' |
|---|------------------------|--------------------|
| 1N It would probably be better if most old people lived in residential units with people of their own age             | 0.35                   | 0.79               |
| 2N There is something different about most old people: it's hard to figure out what makes them tick                   | 0.35                   | 0.79               |
| 3N Most old people get set in their ways and are unable to change   | 0.40                   | 0.78               |
| 4N Most old people would prefer to quit work as soon as pensions or their children can support them                   | 0.40                   | 0.78               |
| 5N Most old people tend to let their homes become shabby and unattractive   | 0.45                   | 0.78               |
| 6N It is foolish to claim that wisdom comes with old age  | 0.17                   | 0.80               |
| 7N Old people have too much power in business and politics  | 0.27                   | 0.79               |
| 8N Most old people make one feel ill at ease  | 0.50                   | 0.78               |
| 9N Most old people bore others by their insistence on talking about the 'good old days'                               | 0.49                   | 0.78               |
| 10N Most old people spend too much time prying into the affairs of others and giving unsought advice                  | 0.53                   | 0.77               |
| 11N If old people expect to be liked, their first step is to try to get rid of their irritating faults                | 0.41                   | 0.78               |
| 12N In order to maintain a nice residential neighbourhood, it would be best if too many old people did not live in it | 0.40                   | 0.78               |
| 13N There are a few exceptions, but in general most old people are pretty much alike                                  | 0.31                   | 0.79               |
| 14N Most old people should be more concerned with their personal appearance, they're too untidy                       | 0.49                   | 0.78               |
| 15N Most old people are irritable, grouchy and unpleasant   | 0.57                   | 0.77               |
| 16N Most old people are constantly complaining about the behaviour of the younger generation                          | 0.31                   | 0.79               |
| 17N Most old people make excessive demands for love and reassurance   | 0.23                   | 0.79               |
| Cronbach's alpha for KAOP-  | 0.80                   |                    |

the positive items expressing positive feelings and opinions about the older people are related. Two reasons could explain these results. Firstly, the matched items do not have perfect

**Table 3** Correlation item with total scale, Cronbach's alpha 'if deleted' for Kogan Attitudes towards Old People positive subscale (KAOP+).

| Item  | Correlation with total | Alpha 'if deleted' |
|---|------------------------|--------------------|
| 1P It would probably be better if most old people lived in residential units that also housed younger people              | 0.22                   | 0.63               |
| 2P Most old people are really not different from anybody else: they are as easy to understand                             | 0.18                   | 0.64               |
| 3P More old people are capable of new adjustments when the situation demands it   | 0.29                   | 0.62               |
| 4P Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody | 0.29                   | 0.62               |
| 5P Most old people can generally be counted to maintain a clean, attractive home  | 0.32                   | 0.62               |
| 6P People grow wiser with the coming of old age   | 0.26                   | 0.62               |
| 7P Old people should have more power in business and politics   | 0.22                   | 0.63               |
| 8P Most old people are very relaxing to be with   | 0.38                   | 0.61               |
| 9P One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences  | 0.30                   | 0.62               |
| 10P Most old people tend to keep to themselves and give advice only when asked  | 0.26                   | 0.62               |
| 11P When you think about it, old people have the same faults as anybody else  | 0.25                   | 0.63               |
| 12P You can count on finding a nice residential neighbourhood when there is a sizeable number of old people living in it  | 0.30                   | 0.62               |
| 13P It is evident that most old people are very different from one another  | 0.12                   | 0.64               |
| 14P Most old people seem to be quite clean and neat in their personal appearance  | 0.39                   | 0.61               |
| 15P Most old people are cheerful, agreeable and good humoured   | 0.40                   | 0.61               |
| 16P One seldom bears old people complaining about the behaviour of the younger generation                                 | 0.19                   | 0.63               |
| 17P Most old people need no more love and reassurance than anyone else  | -0.08                  | 0.68               |
| Cronbach's alpha KAOP+  | 0.66                   |                    |

**Table 4** Comparison among validation studies of the Kogan Attitudes towards Old People scale on student population.

| Author/s, year                 | Country | Population   | Sample size   | Reliability  | Validity   |
|--------------------------------|---------|--|---------------|--|--|
| Kogan (1961a)                  | USA     | College students   | 128, 158, 186 | KAOP- = 0.66–0.77<br>KAOP+ = 0.73–0.83<br>Item-total correlations = 0.10–0.70<br>Correlation KAOP-/<br>KAOP+ = 0.46–0.52 | Concurrent validity with measures of authoritarianism and anti-minority attitudes  |
| Kogan (1961b)                  | USA     | College students   | 168           | KAOP- = 0.83 (M) 0.75 (F)<br>KAOP+ = 0.73 (M)–0.82 (F)   | Concurrent validity  |
| Soderhamn <i>et al.</i> (2000) | Sweden  | Caregivers, nursing students, social welfare and health promotion students | 319           | KAOP = 0.79<br>KAOP- = 0.82<br>KAOP+ = 0.65  | PCA with varimax rotation<br>Scree plot extraction method<br>3 components (30.1% variance): 1 negative, 1 positive, 1 mixed  |
| Lambrinou <i>et al.</i> (2005) | Greece  | Nursing students   | 390           | KAOP = 0.80<br>KAOP- = 0.73<br>KAOP+ = 0.65  | PCA with varimax rotation<br>Eigenvalues > 1 extraction method<br>12 components, second order analysis reduced to 6  |
| Iwasaki and Jones (2008)       | USA     | College students   | 512           | KAOP = 0.83<br>KAOP- = 0.79<br>KAOP+ = 0.68<br>Correlation KAOP-/<br>KAOP+ = 0.51  | Convergent validity with ASD<br>No factor analysis   |
| Yen <i>et al.</i> (2009)       | China   | Nursing and medical students   | 275           | KAOP = 0.82<br>KAOP- = 0.83<br>KAOP+ = 0.81  | CVI = 0.92<br>PCA with varimax rotation<br>Multiple method of extraction<br>2 components (54.7% variance): 1 component including positive items and 1 component including negative items |
| Erdemir <i>et al.</i> (2010)   | Turkey  | Faculty of Health Sciences students  | 594           | KAOP = 0.84<br>KAOP- = 0.79<br>KAOP+ = 0.77<br>Test–retest reliability: 0.73   | CVI = 0.94<br>PCA with varimax rotation<br>No specified extraction method<br>1 component (?)   |
| Current study (2011)           | Italy   | Nursing students   | 1637          | KAOP = 0.76<br>KAOP- = 0.80<br>KAOP+ = 0.66  | CVI = 0.83<br>PFA with oblique rotation<br>Multiple methods of extraction<br>2 factors: 1 comprising positive items, 1 negative items  |

KAOP, Kogan Attitudes towards Old People total scale; KAOP-, Kogan Attitudes towards Old People negative subscale; KAOP+, Kogan Attitudes towards Old People positive subscale; PCA, principal component analysis; PFA, principal factors analysis; F, female; M, male; ASD, Ageing Semantic Differential scale; CVI, content validity index.

identical meanings despite the attempts by Kogan to build logical opposites. Secondly, the feelings and the experiences described by matched statements are logical but not necessarily psychological opposites. In fact, as also noted by Kogan (1961b) and Iwasaki and Jones (2008), negatively worded statements can elicit different psychological reactions than the positive statements with the respondents who tend to disagree more with statements commenting adversely on older

people than to agree with statements containing words of praise.

Two items illustrate the importance of good linguistic construction. The item 17P, that was intended to measure the positive factor of similarity of the older people to the young generations, but was negatively associated with the prejudice factor, could be considered an item ambiguous in its wording due to the presence of a negative in the sentence. Soderhamn

### What is already known about this topic

- Attitudes towards older people among healthcare personnel, particularly nursing students, can influence their work choices and the quality of the care offered to the older population.
- The Kogan Attitudes towards Older People scale is the most common instrument used in previous nursing research studies to measure attitudes towards older people.
- Validity and reliability of the Kogan Attitudes towards Older People scale have been established with nursing students in USA, China, Turkey, Sweden, and Greece.

### What this paper adds

- The Kogan Attitudes towards Older People is a valid and reliable scale to measure attitudes towards older people among Italian nursing students.
- The study showed that the Kogan Attitudes towards Older People scale measures two opposing dimensions of attitudes: prejudice and appreciation towards older people.
- The negative Kogan Attitudes towards Older People subscale alone could be used when it is considered important to target prejudice as a priority or to have access to a shortened instrument.

### Implications for practice and/or policy

- Given the progressive increase in the older population, understanding nursing students' attitudes towards older people is crucial because of the potential influence on both career choices and the quality of care provided to older people.
- Nursing educators need instruments that allow the assessment of the attitude changes of the students as a result of specific educational programmes oriented to the care of older people.
- The Kogan Attitudes towards Older People scale showed moderate to good psychometric properties in all the various cultural contexts where it was tested and can be also recommended in the evaluation of nursing student attitudes towards older people in Italian educational settings.

*et al.* (2000) also reported this issue, lending support to our recommendation for reformulating the item. Moreover, the item 6N failed to show statistically significant loading on the

first factors probably due to the presence of the adjective 'foolish' that could have influenced the respondent answer.

Our findings confirm that the KAOP is a valid and reliable instrument in evaluating attitudes, even if minor item improvements can be suggested. The prejudice dimension showed stronger validity and reliability than the appreciation subscale. For this reason, we can suggest the utilization of the negative subscale alone in those situations where it is considered particularly important to target prejudice as a priority and/or when the ability to have access to a shortened instrument is important to the researcher or educator.

### Conclusion

The KAOP scale, the instrument used widely in the last 50 years to measure attitudes, has continued to show good to moderate psychometric properties in the various cultural contexts tested, so it can be still recommended in evaluation of nursing students in educational settings. However, it would be desirable to develop new instruments that could examine broader views of attitudes in a modern society. In fact, numerous advances in attitude research based on new psychological theories have been made since the development of the KAOP and, moreover, the older adults of the 21st century are different from those living in previous decades in terms of life expectancy, health status, economical resources, technology use, and generational family structure. Therefore, it would be important to study the impact of these variables on attitudinal changes and compare outcomes using a well-established tool such as the KAOP with more contemporary instruments.

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### Conflict of interest

No conflict of interest has been declared by the authors.



## Author contributions

All authors meet at least one of the following criteria (recommended by the ICMJE: [http://www.icmje.org/ethical\\_1author.html](http://www.icmje.org/ethical_1author.html)) and have agreed on the final version:

- substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data;
- drafting the article or revising it critically for important intellectual content.

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