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# The Arabic version of the Kogan Attitudes toward Older People Scale among Saudi nursing students: a psychometric analysis

Nahed Alquwez,[a] Jonas Preposi Cruz,[b] Joseph U. Almazan,[c] Majed Sulaiman Alamri,[d] Jennifer J. Mesde[b]

From the [a]College of Applied Medical Sciences, Shaqra University, Al Dawadmi, Riyadh, Saudi Arabia; [b]Nursing Department, College of Applied Medical Sciences, Shaqra University, Al Dawadmi, Riyadh, Saudi Arabia; [c]Department of Nursing, College of Applied Medical Sciences, Majmaah University, Al-Majmaah, Saudi Arabia; [d]College of Applied Medical Sciences, Majmaah University, Al-Majmaah, Saudi Arabia

**Correspondence:** Dr. Jonas Preposi Cruz · Nursing Department, College of Applied Medical Sciences, Shaqra University, Al Dawadmi, Riyadh 11911, Saudi Arabia · T: +966506521179 · cruzjprn@gmail.com · ORCID: http://orcid.org/0000-0002-3758-1414

**BACKGROUND:** With the steadily increasing size of its elderly population, Saudi Arabia is currently trying to meet the demands for competent care for older people. However, the lack of a valid and reliable measurement instrument in the Arab Peninsula hinders related studies among nursing students in this part of the globe. Given the importance of nursing students' attitudes toward working with older people, a specialized tool that can provide an accurate assessment of students' attitudes toward older adults is necessary.

**OBJECTIVE:** Evaluate the psychometric properties of the Kogan Attitudes towards Older People Arabic version (KAOP-A) among Saudi nursing students.

**DESIGN:** Descriptive, cross-sectional.

**SETTING:** Nursing department of a government university.

**SUBJECTS AND METHODS:** Using total population sampling, Saudi nursing students were surveyed using the KAOP-A. The tool was culturally adapted to the Arabic language using a forward and backward method. Content and construct validity were established accordingly. The internal consistency was established to support the reliability of the tool.

**MAIN OUTCOME MEASURES:** The validity and reliability of the KAOP-A.

**SAMPLE SIZE:** 164 nursing students.

**RESULTS:** The KAOP-A had acceptable content and construct validity. The Exploratory Factor Analysis supported a two-factor solution for the KAOP-A with an explained variance of 60.12%. The computed Cronbach's alpha for the entire scale was 0.89. The mean score of the KAOP-A scale was 121.55 (SD=26.92, range=40-204), indicating a slightly positive attitude toward aging among the students. Nursing students belonging to extended type of family and living in rural community, as well as older students and students who reported higher degree of closeness with their grandparents, exhibited more positive attitudes towards older people.

**CONCLUSION:** The tool can be used to accurately assess student attitudes towards older people, which can inform the creation of educational policies and interventions geared towards creating a more positive outlook on older adult care among nursing students in Saudi Arabia.

**LIMITATIONS:** We did not perform test and re-test reliability analysis.

**CONFLICT OF INTEREST:** None.

The world's older population is rising rapidly at an unprecedented rate as a result of increased birth rate, and longer survival at older ages.[1,2] In 2017, the world population was approximately 7.5 billion; 962 million of which are older adults, encompassing 13 percent of the worldwide population.[2] Similarly, the Middle Eastern population is aging rapidly, which could portend a substantial increase in the demand for healthcare.[3,4] The segment of the population consisting of older adults is rising rapidly to an estimated 18.4% of the total population in 2050.[1] This phenomenon is predicted to have a direct impact on health care services, an unprecedented demand that will have an effect on the attitudes of healthcare providers and on aging related healthcare services.[4] With the rapidly rising older population, the demands of providing competent care for older people is a challenge for Saudi Arabia.[5]

The nursing profession is one group of caring professionals that have pioneered the provision of quality health care for older adults. The increasing demands of care for the aged, which require a specific attitude and understanding, have changed the way of thinking among nurses.[6] Previous studies have reported that older nurses are more optimistic towards older people than newly graduated nurses.[7] Empirical data have shown that nursing students who have more contact with an aging population have positive perceptions and attitudes towards older people care, and have enthusiasm to work with this population.[8] However, other studies have shown that young nursing students are not interested in working with older people.[9,10] Likewise, there are concerns whether nursing students possess the appropriate attitudes toward aging and caring for older adult patients.[11] The negativity towards aging and caring-related challenges among nursing students is often not recognized and addressed, leaving students more fearful and uncomfortable in relating to older adults.[5] Despite the fact that older people care is being taught to nursing students in the undergraduate curriculum,[12] but some nursing graduates still lack competence in older adult care.[13]

Despite the important role of nursing education in preparing future nurses who are competent in caring for older adults, specialty training in the care of the elderly is quite often disregarded in nursing programs.[14] In some nursing programs, the curricula have concentrated only on acute care, and disease treatment, while attitude towards holistic care are often ignored.[15] Thus, nursing students have negative reactions, fear and discomfort in relating to older adults needs and care.

Given the importance of the attitude of nursing students in working with older people, there is a need to assess student attitudes about elderly care. A specialized tool is needed that has the capacity to accurately assess attitudes toward older adults. One of the tools is the Kogan Attitudes towards Older People scale Arabic version (KAOP-A).[16] Several studies have culturally adapted the tool to various languages, and conducted validation and reliability studies, such as Greek, Turkish version, Thai, Burmese, and Indonesian versions.[17-19] While much has been done on the psychometric properties of the tool in other parts of the globe, there is no extensive and rigorous empirical evidence examining the validity and reliability of the KAOP in Arabic language in Saudi Arabia and among Saudi nursing students. Zakari used the KAOP in his dissertation and attempted to test the validity and reliability of an Arabic version.[20] However, there were several inadequacies that made it difficult to accept the psychometric properties of the translated version. The study only performed the content validity test and did not explain how cultural adaptation was conducted. An exploratory factor analysis and other tests for validity were not conducted.[20] Establishing the KAOP validity and reliability in Arabic language will allow for studies that accurately measure nursing students' attitudes, and allow for the planning and implementation of appropriate programs to improve attitudes. A valid and reliable scale may also guide the creation of more efficient care plans for older adult patients based on the outcomes of improved attitudes among nursing students. Since nursing students today are the future of the nursing profession, ensuring that they develop positive attitudes towards older people while they are still under training may also ensure quality nursing care for older adults in the future. This study assessed the psychometric properties of the Arabic version of the KAOP-A among a sample of the Saudi nursing students

## SUBJECTS AND METHODS

This cross-sectional study was conducted in a government university (nursing department) in the Riyadh region, Saudi Arabia. A total population sampling method among the second, third and fourth year nursing students in the university was used in this study. The sample size was adequate for factor analysis.[21] The inclusion criteria for the study were: (1) Saudi national, (2) in the second, third and fourth year of the regular BSN program, and (3) both males and females were included. Students who were in the first year were excluded from the study because they are still in their preparatory year and have not had major nursing courses. Recruitment of respondents was conducted by three researchers by approaching the students during their free time. Comprehensive information was provided

about the study content. For the evaluation of the content validity of the scale, a panel of five experts was asked to evaluate the contents of the scale. The panel consisted of two medical doctors with specialization in gerontology, two nurses with specialization in caring for older people, and one professor specializing in gerontology nursing.

Ethical clearance was obtained from the Institutional Review Board of Majmaah University (MUREC-Dec 19/COM-2017/26). Administrative approval was obtained from the nursing department of the university. Information about the study, including the significance of the study, the voluntary participation, the benefits and risks in participating, and the expected participation of the respondents, was provided to qualified students during the recruitment stage and informed consent was reinforced during data collection. The students were given adequate time to ask questions about the study. Measures to ensure confidentiality of the students, such as asking them not to write their names in the questionnaire, were observed. Data collection was conducted in the absence of the instructors. Collection of data was conducted by researchers who were not related to the students. Also, the students were ensured that their grades would not be affected by participation or non-participation in the study.

### Instrument

A self-administered questionnaire was used as a data gathering tool. Demographic characteristics included age, academic year level, gender, family structure (nuclear or extended family), type of community (rural or urban), whether they lived with their grandmother or grandfather (yes or no), and their perceived degree of closeness with their grandparents (Visual Analogue Scale from 0 to 10).

The KAOP scale was developed by Nathan Kogan from the United States.[16] The original scale was administered in several previous studies that assessed student nurses' attitude towards aging.[13,22] The KAOP is a 34-item scale. Half of items are negatively worded, half are positively worded. The scale uses a 6-point Likert scale (1-strongly disagree; 6-strongly agree). The responses were added after negatively worded items were reversed coded; hence total scores could range from 34–204. Higher scores mean more positive attitudes. The original scale manifested good reliability, with Spearman–Brown reliability coefficients ranging from 0.66 to 0.83, and inter-scale item correlations (0.46 to 0.52).[16] Previous studies conducted among nursing students reported similarly acceptable psychometric properties.[22,23]

The KAOP-Arabic version was translated from English based upon recommended guidelines for adapting cross-cultural instrument translation.[24] Two bilingual experts, whose native language was Arabic, independently translated the English version of the scale into Arabic. The first translator was a Saudi assistant professor in nursing (aware of the concept being studied), while the second translator was a Saudi working as a translator (not aware of the concept being studied). Another bilingual expert synthesized the two translations into a solo initial translated Arabic version. The initial translated version was conferred to another two bilingual experts, who separately back-translated it to English. Both translators were working as university professors in English. Another bilingual expert synthesized the two back-translated versions. Both the Arabic and the back-translated versions were evaluated by a 5-member expert panel for face and content validity. For face validity, the panel examined the experiential, semantic, idiomatic, and conceptual equivalence of the two versions. The Arabic version was agreed by the panel members. During content validity, five expert panel evaluated each item's scale relevance by answering from a 4-point Likert scale, ranging from 1 (not relevant) to 4 (highly relevant).[25]

### Data collection procedure

Data collection started during December to January 2017. After the recruitment period, three researchers coordinated with the instructors to take a few minutes of their time at the end of their lecture. Those students who agreed to participate were given an informed consent form to sign. After signing the form, they were given the questionnaire with a blank white envelope. The students were instructed how to answer the questionnaire. The researchers instructed the students to put the answered questionnaire in the white envelope and seal it themselves before returning it to the researchers. The researchers kept them in a locked cabinet until the data collection period was over.

### Statistical analysis

SPSS version 22 was used for the statistical analysis. Descriptive statistics (e.g. frequency, mean, standard deviation) were used to treat the data. Content validity and construct validity were established for validity of the culturally adapted scale. For the content validity, the item-level content validity index (I-CVI) and scale-level content validity index using averaging method (S-CVI/Ave) were calculated. An I-CVI of 1 and an S-CVI/Ave ≥0.90 were deemed satisfactory.[25] The item-to-total correlations (ITC) were computed for internal structure

validity; with the following criteria for elimination or modification of the items: (1) ITC <0.30 or >0.80, and (2) the item caused ≥10% decrease in the Cronbach's alpha of the tool when eliminated.[26,27] For construct validity, principal components analysis (PCA) with varimax rotation was performed. Based on the original version of the tool and other translated versions of the tool that have two factors, the researchers hypothesized that that KAOP-A is a two-factor scale. Hence, an exploratory factor analysis was conducted.[27] Factors with an eigenvalue and factor loading >1 and >0.40, respectively, indicate acceptable construct validity.[27] Kaiser–Meyer–Olkin (KMO) and Barlett's test of sphericity were calculated to identify the sufficiency of the sample size (KMO value ≥0.60) and suitability of the factor model ($P<.05$) prior the conduct of the PCA. In addition, the known-groups method was also used to establish the construct validity of the tool. An independent sample $t$ test and one-way analysis of variance with Tukey HSD test as post-hoc were used to examine the differences between groups. The Cronbach's alpha (Cronbach's $\alpha \geq 0.70$ was acceptable) of the tool was obtained for reliability.[25]

## RESULTS

From the 190 distributed questionnaires, 171 were retrieved; seven questionnaires were excluded due to substantial missing data. Hence, 164 were included in the analysis (response rate=86.3%). The respondents' mean age was 21.21 (SD=1.64, range=19-30). A higher percentage of students were enrolled in the second year (42.7%) of the BSN program, followed by the fourth year (32.9%) and the third year (24.4%). Most of the students were males (54.3 %), with extended family (56.7 %), and lived in an urban area (63.4 %). Only few reported that they live with their grandparents (17.1%), whereas the average degree of closeness with their grandparents was 7.03 (SD=3.16, range=0-10) (**Table 1**).

### Validity and reliability of the KAOP-A

The computed I-CVIs and the S-CVI/Ave were all 1. These findings indicate that the 34-item KAOP-A has an acceptable content validity. The 34 items of the KAOP-A were analyzed by PCA to test for construct validity. The KMO index was 0.81, and the Barlett's test of sphericity was statistically significant ($x^2$=[561] 9983.51, $P<.001$), implying the sufficiency of the sample for the factor analysis and the suitability of the factor model. As shown in **Table 2**, the item mean ranged from 3.09 (SD=1.71) to 4.40 (SD=1.76). The corrected ITCs for the 34 items ranged from 0.282 to 0.516. Two items had corrected ITC lower than 0.30 (item 17=0.282 and item 5=0.293); however, no change in the overall

Cronbach's alpha value was noted when these items were deleted. Hence, we decided to retain them as part of scale. The PCA revealed a two-factor solution with an cumulative explained variance of 60.1%. The eigenvalues of both factors were above 1, and the scree plot showed a large break between the two factors. The factor loadings were adequate for factor 1 (range=0.593-0.875) and for factor 2 (range=0.609-0.839). The 17 items on the positive traits of aging loaded heavily in factor 1 (appreciation; explained variance=37.8%), while the 17 items assessing the negative perceptions about aging loaded in factor 2 (prejudice, explained variance=22.3%). The Cronbach's alpha of the tool was 0.89, while 0.95 and 0.94 for factors 1 and 2, respectively.

### Association between nursing students' attitudes towards older people and their demographic characteristics

The KAOP-A mean score was 121.55 (SD=26.92, range=40–204), indicating slightly positive attitudes to-

**Table 1.** Demographic characteristics of the respondents (n=164).

| Demographics | n (%) |
|---|---|
| **Academic year level** | |
| Second year | 70 (42.7) |
| Third year | 40 (24.4) |
| Fourth year | 54 (32.9) |
| **Gender** | |
| Female | 75 (45.7) |
| Male | 89 (54.3) |
| **Family structure** | |
| Extended family | 93 (56.7) |
| Nuclear family | 71 (43.3) |
| **Type of community where they live** | |
| Urban | 104 (63.4) |
| Rural | 60 (36.6) |
| **Living with grandparent** | |
| No | 136 (82.9) |
| Yes | 28 (17.1) |
| Age (years)[a] | 21.2 (1.6) |
| Degree of closeness with grandparents[b] | 7.0 (3.2) |

[a]Range=19 to 30; [b]Range=0 to 10.

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**Table 2.** Item mean, factor loadings, corrected item-total correlations and Cronbach's alpha if item deleted for the KOAP-A (n=164).

| Items | Mean | SD | Factor loadings | | Corrected Item-Total Correlation | Cronbach's α if item is deleted |
|---|---|---|---|---|---|---|
| | | | Appreciation | Prejudices | | |
| 22. When you think about it, old people have the same faults as anybody else. | 3.57 | 1.69 | 0.875 | | 0.437 | 0.886 |
| 28. Most old people seem quite clean and neat in their personal appearance. | 3.34 | 1.61 | 0.868 | | 0.461 | 0.885 |
| 16. Most old people are very relaxing to be with. | 3.70 | 1.78 | 0.865 | | 0.440 | 0.886 |
| 34. Most old people need no more love and reassurance than anyone else. | 3.79 | 1.88 | 0.853 | | 0.369 | 0.887 |
| 10. Most old people can generally be counted on to maintain a clean, attractive home. | 3.63 | 1.78 | 0.837 | | 0.395 | 0.887 |
| 2. It would probably be better if most people lived in residential units with younger people. | 3.80 | 1.77 | 0.825 | | 0.398 | 0.886 |
| 8. Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody. | 3.64 | 1.70 | 0.801 | | 0.451 | 0.885 |
| 4. Most old people are really no different from anybody else; they're as easy to understand as younger people. | 3.27 | 1.69 | 0.797 | | 0.463 | 0.885 |
| 18. One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences. | 4.40 | 1.76 | 0.768 | | 0.367 | 0.887 |
| 14. Old people should have power in business and politics. | 3.25 | 1.53 | 0.765 | | 0.474 | 0.885 |
| 32. One seldom hears old people complaining about the behavior of the younger generation. | 3.14 | 1.55 | 0.754 | | 0.481 | 0.885 |
| 20. Most old people tend to keep to themselves and give advice only when asked. | 3.13 | 1.54 | 0.753 | | 0.479 | 0.885 |
| 26. It is evident that most old people are very different from one another. | 3.17 | 1.53 | 0.738 | | 0.486 | 0.885 |
| 30. Most old people are cheerful, agreeable, and good humored. | 4.02 | 1.68 | 0.691 | | 0.372 | 0.887 |
| 24. You can count on finding a nice residential neighborhood when there is a sizeable number of old people living in it. | 3.99 | 1.78 | 0.616 | | 0.349 | 0.887 |
| 12. People grown wiser with the coming of old age. | 3.85 | 1.74 | 0.606 | | 0.368 | 0.887 |
| 6. Most old people are capable of new adjustments when the situation demands it. | 3.89 | 1.65 | 0.593 | | 0.342 | 0.887 |
| 19. Most old people spend too much time prying into the affairs of others and giving unsought advice. | 3.23 | 1.74 | | 0.839 | 0.400 | 0.886 |
| 13. Old people have too much power in business and politics. | 3.33 | 1.69 | | 0.837 | 0.429 | 0.886 |

**Table 2 (cont.)**. Item mean, factor loadings, corrected item-total correlations and Cronbach's alpha if item deleted for the KOAP-A (n=164).

| Items | Mean | SD | Factor loadings | | Corrected Item-Total Correlation | Cronbach's α if item is deleted |
|---|---|---|---|---|---|---|
| | | | Appreciation | Prejudices | | |
| 3. There is something different about most people; it's hard to find out what makes them tick. | 3.39 | 1.60 | | 0.821 | 0.516 | 0.884 |
| 21. If old people expect to be liked, their first step is to try to get rid of their irritating faults. | 3.45 | 1.59 | | 0.816 | 0.506 | 0.885 |
| 33. Most old people make excessive demands for love and reassurance than anyone else. | 3.09 | 1.71 | | 0.814 | 0.416 | 0.886 |
| 31. Most old people are constantly complaining about the behavior of the younger generation. | 3.29 | 1.77 | | 0.814 | 0.361 | 0.887 |
| 9. Most old people tend to let their homes become shabby and unattractive. | 3.10 | 1.74 | | 0.804 | 0.450 | 0.885 |
| 1. It would probably be better if most old people lived in residential units with people their own age. | 3.16 | 1.86 | | 0.791 | 0.409 | 0.886 |
| 25. There are a few exceptions, but in general most old people are pretty much alike. | 3.59 | 1.71 | | 0.779 | 0.422 | 0.886 |
| 27. Most old people should be more concerned with their personal appearance; they're too untitdy. | 3.57 | 1.55 | | 0.771 | 0.515 | 0.884 |
| 7. Most old people would prefer to quit work as soon as pensions or their children can support them. | 3.72 | 1.82 | | 0.711 | 0.452 | 0.885 |
| 17. Most old people bore others by their insistence on talking "about the good old days". | 3.57 | 1.88 | | 0.670 | 0.282 | 0.889 |
| 5. Most old people get set in their ways and are unable to change. | 3.70 | 1.92 | | 0.646 | 0.293 | 0.889 |
| 29. Most old people are irritable, grouchy, and unpleasant. | 4.15 | 1.68 | | 0.616 | 0.317 | 0.888 |
| 11. It is foolish to claim that wisdom comes with age. | 4.18 | 1.73 | | 0.610 | 0.366 | 0.887 |
| 23. In order to maintain a nice residential neighborhood, it would be best if too many old people did not live in it. | 4.17 | 1.74 | | 0.609 | 0.368 | 0.887 |

wards aging among the students. The findings for the tests of association between the demographic characteristics and attitudes towards aging are shown in **Table 3**. As reflected, weak and moderate positive correlations were observed between age and attitudes (r=0.23, P=.004) and degree of closeness to grandparents and attitudes (r=0.33, P<.001), respectively. Nursing students whose family type is extended (mean=126.08, SD=28.34) had better attitudes towards aging than stu-

dents who belonged to a nuclear family (mean=115.62, SD=23.86, t=2.50, P=.013). Furthermore, nursing students who were living with their grandparents (mean=147.07, SD=23.98) exhibited more optimistic attitudes towards aging than students who were not living with their grandparents (mean=116.29, SD=21.94, t=-4.60, P<.001). Nursing students who were living in rural communities (mean=130.67, SD=30.53) also had more positive attitudes towards aging compared with

students from urban areas (mean=116.29, SD=23.17, t=-3.16, P=.002).

## DISCUSSION

This study evaluated the psychometric properties of KAOP-Arabic version in assessing Saudi nursing students' attitudes towards older people. Three significant findings are highlighted in this study: the validity of the tool, the reliability of the tool, and the associations of the attitudes towards older people, as measured by the KAOP-A, with the students' demographic profiles. First, the validity of the tool was supported by establishing its construct and content validity. The content validity of the different versions of the KAOP has been studied in other countries, such as in Greece, Turkey, Thailand, Myanmar, and Indonesia; but it has never been tested in Saudi Arabia.[17,19,28] As in those studies, the Arabic version of the KAOP showed an acceptable content validity. This finding implies that the individual items of the KAOP-A represent the main domain (attitudes towards older adults), which the entire scale is intended to measure. Moreover, the corrected ITCs were acceptable and none of the items was deleted based on the criteria built, as previously discussed. Also, the values of the KMO and Barlett's test of sphericity uphold the adequacy of the sample size and the suitability of the factor model. Using the PCA with varimax rotation, two well-defined factors were identified in the KAOP-A, with combined explained variance of attitudes towards older adults above 50.0%; indicating an acceptable construct validity.[29] The items loaded in factor one concentrated on the positive traits towards aging, while items in factor two are about negative feelings and opinions toward aging; hence, the factors were labeled "Appreciation" and "Prejudice", respectively. This finding affirms the two-factor KAOP scale as reported by previous studies.[23,30-32]

Second, the KAOP-A showed an acceptable internal consistency reliability (0.89), which is similar with other KAOP versions, such as the Japanese version (Chronbach's alpha=0.87), the Iranian version (Chronbach's alpha=0.87), the Turkish version (Chronbach's alpha=0.84), the Greek version (Chronbach's alpha=0.80), the Chinese version (Chronbach's alpha=0.82), and Thai version (Chronbach's alpha=0.70).[17,19,23,28,33,34] The present findings imply that the KAOP-A had an acceptable internal consistency, further indicating that the individual items in the scale were coherent.[26] Therefore, the KAOP-A version is a reliable instrument for measuring the Saudi nursing student's attitudes toward older people.

Third, associations between some of the students'

**Table 3.** Association between the respondents' demographic characteristics and attitudes towards aging (n=164).

| Demographics | Mean (SD) | Statistical test | P |
|---|---|---|---|
| **Academic year level** | | | |
| Second year | 121.41 (24.66) | | |
| Third year | 114.00 (23.33) | F=2.88 | .059 |
| Fourth year | 127.31 (30.99) | | |
| **Gender** | | | |
| Female | 121.12 (19.96) | | |
| Male | 121.91 (31.74) | t=-0.19 | .847 |
| **Family structure** | | | |
| Extended family | 126.08 (28.34) | | |
| Nuclear family | 115.62 (23.86) | t=2.50 | **.013** |
| **Type of community where they live** | | | |
| Urban | 116.29 (23.17) | | |
| Rural | 130.67 (30.53) | t=-3.16 | **.002** |
| **Living with grandparents** | | | |
| No | 116.29 (21.94) | | **<.001** |
| Yes | 147.07 (33.98) | t=-4.60 | |
| Age | | r=0.23 | **.004** |
| Degree of closeness with grandparents | | r=0.33 | **<.001** |

demographic characteristics and their attitudes towards older people were reported. Accordingly, nursing students who had an extended type of family reported a more positive attitude towards aging than students belonging to a nuclear family. The Saudi Arabian family is traditionally extended in type. However, social changes including family structure have been pervasive in the previous decade. Family structure is moving away from extended family to nuclear family due to several factors, such as urbanization, industrialization, education, telecommunication and mass media.[35] Moreover, nursing students who were living with their grandparents showed a better understanding of positive attitudes towards the elderly compared with those who were not living with their grandparents. These two findings may indicate that living with grandparents builds more complex aging family relationships, and hands-on experience with aging patterns of change than without grandparents living at home. The presence of grandparents at home may positively affect attitudes towards aging. These results corroborate with a previous study,

which found that the longer the grandparent stays in the family, the more emotionally attached they are to their grandchildren.[36] The older adult's presence in the family improved the amount of physical contact to their grandchildren, which in turn improved the support needs of the family, revealing a strong older adults-children relationship and provision of assistance.[37,38] Children living with their grandparents can clearly observe the health needs of older adults, and have opportunities to assist them in their personal care needs.[39] Older adults living in homes may provide important social interactions that positively influence the adult children's behavior. Such first-hand experience of living and taking care of older adults provides better awareness of health needs towards older adults and creates an appreciation of older adult care among the students.

The community type where people live positively or negatively affects their cognitive and emotional components that guide their tendency to act.[40] In this study, students living in rural areas had more positive attitudes towards aging than students living in urban areas. This result is similar to previous research conducted among older adults in China, Japan, Korea and in the European region.[41,42] Previous research reported that urbanization offers an option for older adults to be placed in a nursing home.[43] Nursing homes provide a comfortable place where older adults are well cared by the healthcare workers rather than being cared for by the family themselves. Placement in nursing homes may assure older people a better quality of care.[44] Thus, more urban families prefer nursing home institutionalization than care at home.[42] In contrast, institutionalization places an emotional and psychological gap between the elderly and adult children.[45] Placing the elderly in home care causes a transition from daily recognition to limited recognition and possible isolation.[46] One study reported that urbanized nursing homes might predict more negative attitudes.[41] The individual feels resentment toward older adults who demand support without contribution to the family. Nevertheless, perception and reasons for placing the elderly in nursing homes were not discussed in the study. There is room for more scientific studies on the knowledge of nursing students and factors affecting transferring elderly care to institutions, which might be interesting areas of research for future scrutiny.

Another interesting result of the study is that the closer the individuals are to older adults, the more positive their attitudes towards aging are. This result affirms another previous study that the sense of closeness towards older adults influences their attitudes towards aging.[47] Older adults who are connected to their grandchildren report more positive feelings about the aging process.[48] Closeness to older adults improves a person's self-esteem, and makes people aware of positive age-related changes.[49] A previous study described closeness with respect to the older population and sees it as an important link in the familial chain.[50] Similarly, people reporting spending more time with an older person have more regards and a higher value towards society.[51] Consequently, Arabs had a more positive stance toward their elders. This means close contact with older persons in the family is an important familial value. Nevertheless, the association between Arab cultural attitudes towards aging was not examined in the study. In light of this cultural perspective, more study might examine the influence of Arab culture on the attitudes towards aging of nursing students.

Despite the significant findings regarding the KAOP-A psychometric properties, several limitations are acknowledged, which should be taken into consideration in further studies. First, scale construct validity was only supported by factor analysis. Other measures such as divergent and convergent validity could be conveyed to further support the validity of the Arabic version. Second, test-retest reliability test were not conducted.

In conclusion, the KAOP-A had an acceptable content and construct validity and a high reliability which indicated good psychometric properties. Nursing students' age, the degree of closeness to grandparents, type of family, whether living with their grandparents or not, and type of community displayed association with attitudes towards older people. Hence, the results supported the validity and reliability of the KAOP-A for Saudi nursing students, which can provide valuable insights regarding nursing student attitudes towards older people that can guide in preparing future nurses capable of meeting the health needs of older people. The establishment of a valid and reliable instrument is essential in nursing programs, including gerontology curricula which objectively measure student attitudes towards aging. The KAOP-A is useful to educators, healthcare administrators, researchers, and policymakers in improving the quality of care for older people.

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