

52.5% worked with adults, 26.8% worked with older people, and 20.7% worked with kids. An estimated 21.3% lived in a rural environment, whereas 78.7% lived in cities. Up to 68.8% of participants did not have dependent older people in their family environment, 18.4% had at least one older person, 6.8% had two older people, and 6.1% had three or more.

**Table 1.** Summary of participant gender, type of patients, and place of residence.

	n	KAOP Total	Prejudice	Appreciation
Male	83	112.59 (SD = 14.64)	51.14 (SD = 19.62)	61.44 (SD = 9.76)
Female	298	113.46 (SD = 13.60)	49.58 (SD = 10.07)	63.88 (SD = 9.65)
Work with Adults	200	111.70 (SD = 13.75)	49.29 (SD = 9.93)	62.40 (SD = 9.59)
Work with Elderly people	102	115.30 (SD = 13.40)	50.94 (SD = 10.08)	64.36 (SD = 9.63)
Work with Kids	79	114.65 (SD = 14.22)	50.21 (SD = 9.98)	64.44 (SD = 10.02)
Residence Rural	81	50.21 (SD = 9.98)	50.79 (SD = 10.72)	62.69 (SD = 11.31)
Residence Urban	300	50.21 (SD = 9.98)	46.69 (SD = 9.78)	65.53 (SD = 9.25)

Descriptive results and item homogeneity.

Table 2 includes the means and standard deviation of each item for the KAOP scale. In this regard, items of homogeneity were significantly low with a minimum value of 0.145 (item 1N) and a maximum value of 0.350 (item 11N). Several positive items (P) had higher mean scores than negative items (N).

**Table 2.** Means, standard deviations, and item homogeneity for Kogan's Attitudes towards Older People (KAOP).

Items	M	SD	Skewness	Kurtosis	Item Homogeneity
1N It would probably be better if most old people living in residential units with people their own age	3.69	1.314	−0.124	−0.820	0.145
1P It would be probably better if most old people lived in residential units that also housed young people	3.38	1.235	−0.075	−0.547	0.239
2N There is something different about most old people: it's hard to figure out what makes them thick	3.13	1.254	0.217	−0.349	0.268
2P Most old people are really not different from anybody else: they are as easy to understand	3.44	1.256	−0.042	−0.454	0.276
3N Most old people get set in their ways and are unable to change	4.57	1.311	−0.814	0.287	0.252
3P More old people are capable of new adjustments when the situation demands it	3.06	1.238	0.432	−0.389	0.221
4N Most old people would prefer to quit work as soon as pensions or their children can support them	2.67	1.288	0.517	−0.282	0.209
4P Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody	4.40	1.230	−0.458	−0.159	0.188
5N Most old people tend to let their homes become shabby and unattractive	2.52	1.285	0.591	−0.338	0.243
5P Most old people can generally be counted to maintain a clean attractive home	4.04	1.228	−0.250	−0.424	0.183
6N It is foolish to claim that wisdom comes with old age	2.72	1.398	0.552	−0.400	0.186
6P People grow wiser with the coming of old age	4.22	1.252	−0.383	−0.352	0.272
7N Old people have too much power in business and politics	3.03	1.098	0.176	−0.277	0.248
7P Old people should have more power in business and politics	3.23	1.122	0.171	−0.383	0.269
8N Most old people make one feel ill at ease	2.25	1.207	0.812	0.304	0.259
8P The elderly are relaxing to be with them	4.19	1.190	−0.370	0.032	0.261
9N Most old people bore others by their insistence on talking about the "good old days"	2.37	1.249	0.769	0.047	0.281
9P One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences	4.81	1.160	−0.693	0.085	0.246
10N Most old people spend too much time prying into the affairs of others and giving unsought advice	2.95	1.249	0.173	−0.495	0.253
10P The elderly mind their own business	3.10	1.191	0.318	−0.369	0.256
11N if old people expect to be liked, their first step is to try to get rid of their irritating faults	2.38	1.209	0.502	−0.378	0.350
11P When you think about it, old people have the same faults as anybody else	4.61	1.262	−0.704	0.123	0.207

Table 2. Cont.

Items	M	SD	Skewness	Kurtosis	Item Homogeneity
12N In order to maintain a nice neighborhood, it would be best if too many old people did not live in it.	2.18	1.173	0.769	0.126	0.161
12P Neighborhoods are nice when integrated with the elderly	4.18	1.266	−0.389	−0.168	0.234
13N There are a few exceptions, but in general most old people are pretty much alike	2.96	1.236	0.245	−0.472	0.337
13P It is evident that most old people are very different from one another	3.95	1.309	−0.186	−0.655	0.151
14N Most old people should be more concerned with their personal appearance, they're too untidy	2.55	1.148	0.417	−0.316	0.302
14P Most old people seem to be quite clean and neat in their personal appearance	3.72	1.168	−0.147	−0.338	0.310
15N Most old people are irritable, grouchy and unpleasant	2.35	1.164	0.698	0.186	0.217
15P Most old people are cheerful, agreeable and good humored	3.99	1.154	−0.362	0.048	0.347
16N Most older people are constantly complaining about the behavior of the younger generation	3.99	1.241	−0.268	−0.557	0.270
16P One seldom bears old people complaining about the behavior of the younger generation	2.65	1.204	0.748	0.215	0.243
17N Most older people make excessive demands for love and reassurance	3.63	1.327	0.010	−0.572	0.325
17P Most older people need no more love and reassurance than anyone else	2.39	1.387	0.834	0.020	0.195

Answers range = (1–6); N = negative items; P = positive items.

### 3.2. Exploratory Factor Analysis and Reliability

Table 3 shows the factorial solution of the KAOP-S scale, factorial weights, proportion of variance explained, Cronbach's alpha, and the Omega coefficient. The KMO was 0.78, indicating sampling adequacy ( $>0.50$ ) and Bartlett's test of sphericity was statistically significant at 3191.96,  $df = 561$ ,  $p < 0.001$ . The factor analysis yielded a two-factor solution. The first factor was named “prejudice”, as in the original instrument. This factor was composed of negatively worded items. The second factor, called “Appreciation”, was composed of the positively worded items. The total explained variance was 25.69%, 14.48 for the first factor and 11.21 for the second one.

Table 3. Factor loadings after varimax rotation for the KAOP scale.

	Prejudice	Appreciation
9N Most old people bore others by their insistence on talking about the “good old days”	0.660	
11N if old people expect to be liked, their first step is to try to get rid of their irritating faults	0.655	
14N Most old people should be more concerned with their personal appearance, they're too untidy	0.654	
15N Most old people are irritable, grouchy and unpleasant	0.600	
8N Most old people make one feel ill at ease	0.586	
10N Most old people spend too much time prying into the affairs of others and giving unsought advice	0.583	
13N There are a few exceptions, but in general most old people are pretty much alike	0.542	
12N In order to maintain a nice neighborhood, it would be best if too many old people did not live in it	0.541	
5N Most old people tend to let their homes become shabby and unattractive	0.499	
2N There is something different about most old people: it's hard to figure out what makes them thick	0.450	
4N Most old people would prefer to quit work as soon as pensions or their children can support them	0.440	
6N It is foolish to claim that wisdom comes with old age	0.392	
17P Most older people need no more love and reassurance than anyone else	0.352	
17N Most older people make excessive demands for love and reassurance	0.349	
16N Most older people are constantly complaining about the behavior of the younger generation	0.315	
1N It would probably be better if most old people lived in residential units with people their own age	0.188	0.118
16P One seldom bears old people complaining about the behavior of the younger generation	0.243	0.205
15P Most old people are cheerful, agreeable and good humored		0.667



Table 3. Cont.

	Prejudice	Appreciation
8P Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody.		0.609
12P Neighborhoods are nice when integrated with the elderly		0.594
9P One of the most interesting and entertaining qualities of most old people is their accounts of their past experiences		0.578
14P Most old people seem to be quite clean and neat in their personal appearance		0.564
11P When you think about it, old people have the same faults as anybody else		0.553
6P People grow wiser with the coming of old age		0.543
4P Most old people would prefer to continue working just as long as they possibly can rather than be dependent on anybody		0.537
5P Most old people can generally be counted to maintain a clean attractive home		0.491
2P Most old people are really not different from anybody else: they are as easy to understand		0.419
13P It is evident that most old people are very different from one another		0.414
7P Old people should have more power in business and politics		0.391
1P It would be probably better if most old people lived in residential units that also housed young people		0.388
3N Most old people get set in their ways and are unable to change		0.360
10P Most old people tend to keep to themselves and give advice only when asked		0.322
3P More old people are capable of new adjustments when the situation demands it		0.310
7N Old people have too much power in business and politics		0.243
<b>Variance explained</b>	<b>14.48</b>	<b>11.21</b>
<b>Cronbach's Alpha</b>	<b>0.776</b>	<b>0.773</b>
<b>Omega</b>	<b>0.934</b>	<b>0.967</b>

Concerning reliability, Cronbach's alpha for the total scale was 0.750 and the Omega coefficient was 0.949. For each factor, the findings were first factor ( $\alpha = 0.776$ ,  $\Omega = 0.934$ ); second factor ( $\alpha = 0.773$ ,  $\Omega = 0.967$ ).

#### 4. Discussion

The main purpose of the study was to analyze the psychometric properties of the KAOP scale in a sample of undergraduate nursing students from Spain.

The KAOP has proved to be an internationally effective instrument for assessing the attitudes of health professionals toward older people [10,24,26,27]. To the best of our knowledge, there is no validated version of this scale in Spanish. The Spanish version of the KAOP shows high reliability (internal consistency and stability) and good content and construct validity. The alpha coefficients were 0.75 for the total scale and 0.77 for both subscales. The Arabic version has the highest Cronbach's alpha (0.89) [23,24] compared to the Indonesian version (0.70) [28], which has the lowest Cronbach's alpha. The Greek (0.73) [26], the Swedish (0.79) [29,30], the Italian (0.76) [31], and the Spanish (0.75) versions have similar results, whereas the Chinese (0.82) [25], Turkish (0.85) [26], and Iranian (0.83) [32] versions obtained superior results.

The factor analysis of the KAOP revealed two well-defined factors, "prejudice" where the items describe a negative predisposition towards older people, and "appreciation", representing positive items expressing positive feelings and opinions toward older people. Most versions include only two factors. Thus, the Chinese version reports two components with an explained variance of 54.7% [25], the Arabic version reports two factors with an explained variance of 60.12% [24], the Iranian version showed two factors with a variance of 58.76% [32], and the Turkish and Indonesian versions are based on two factors [26,28]. However, the Greek version is a six-component version with a variance of 41% [29], and in the case of the Swedish version, the ten-factor solution with a variance of 57.7% was