Original Article

Taiwanese Medical and Nursing Student Interest Levels in and Attitudes Towards Geriatrics

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Abstract

Introduction: To investigate the attitudes of medical and nursing student towards the older Chinese population. Materials and Methods: A reliable and valid Chinese language version of Kogan's Attitudes toward Older People (KAOP) with 17 matched item pairs (34 items) was completed by 275 medical and nursing students. Descriptive data analysis was employed. Results: Participants reported slightly to have a more positive attitudes (Mean, 144.30 ± 17.89) than those reported from studies in other countries (Jordanian: Mean, 110.6 ± 21.79). Students who were females (Mean, 148.27 ± 18.97), younger (Mean, 146.01 ± 18.59) and studying nursing (Mean, 156.86 ± 17.56) were more likely to have a more positive attitudes than older (Mean, 140.04 ± 15.31), males (Mean, 140.47 ± 15.93), studying medicine (Mean, 138.77 ± 15.04). Discussion: Results show that students may have greater ambivalence attitudes on 10 out of 17 matched item pairs which provides useful information for faculty involved in aged care curriculum design. Working as a volunteer in the university hospital may increase students' interactions with the elderly and may positively influence attitudes towards the elderly.

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Introduction

Nations worldwide are now experiencing a progressive and rapid increase in their elderly populations. Since there is a shortage of geriatric healthcare providers in the United States, this has important implications for workforce planning.[1] On the other hand, it is essential that all healthcare providers improve their knowledge, attitudes and skills relating to geriatrics as they tend to encounter elderly patients more frequently. It is equally important that the current batch of medical and nursing students be prepared for the looming ageing population. We must actively promote the knowledge of, and positive attitudes towards, older people. However, not many medical and nursing students appear to have chosen geriatrics medicine as their career path.[2]

According to a census conducted in Taiwan, the elderly population will reach about 20% within the next 20 years.

A rapid growth in the older population will inevitably create an increase in demand for high quality skilled and experienced geriatric healthcare providers for older people.[3] Physicians and nurses have a pivotal role in providing aged care and are uniquely positioned to influence the quality of their care.[4] With the increases in life expectancy and the numbers of older people, the attitudes of nurses and physician attitudes may affect the quality of aged care provided.[5] Negative attitudes towards the elderly and the lack of knowledge among nurses and physicians can significantly influence the quality of aged care. Herdman[6] suggests the existence of prevalent negative attitudes among nursing students towards older people because of myth and prejudice has further aggravate the problem of an ageing population.

As more older Taiwanese demand more aged care, professional aged care providers are facing the challenges in catering the appropriate healthcare needs for this segment

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of the population. Bad attitudes towards older people can hamper the treatment process of the elderly and negative prejudices towards them can often result in dissatisfying conversations.[7,8] With an accelerated increase in the elderly population, it is essentially important to raise the awareness of having a positive attitude towards the elderly among aged care providers.[9] According to Jacelon,[5] the quality of aged care is directly related to the attitudes of aged care providers. Negative attitudes towards older people have the potential to adversely affect the quality of aged care provided, so it is important that nursing and medical students learn to approach the care of older people with a positive attitude.[9-11] To our knowledge, no study as yet has been carried out on the attitudes of aged care providers towards older people in Taiwan. This study examines the attitudes of medical and nursing students towards older people by medical and nursing students by using a reliable Chinese version of Kogan's Attitudes towards Older People (KAOP).

Materials and Methods

Design and Participants

A descriptive, quantitative-designed, structured questionnaire was used in this study. All medical and nursing students at Chung Shan Medical School were invited to participate in this study. The requirements are (i) a health-related major and (ii) willingness to participate. Three hundred and eleven questionnaires were given out, 36 students did not complete the questionnaires due to tardiness, absenteeism and/or lack of interest and were therefore excluded from the sample. The final sample consisted of 275 medical and nursing students. If any data part of the questionnaire was left blank, it would be excluded from the statistical analysis. Thus, the sample size for each item in the questionnaire varies.

Instrument

Data were collected using a Chinese version of the KAOP which consisted of 34 items related to older people. Seventeen items (KAOP⁻) were negatively-worded statements while the others (KAOP⁺) were positively-worded presented in random order. The scale is designed in the form of a summed Likert attitude scale with 6-point response categories that range from "strongly disagree" (1) to "strongly agree" (7). The scores on the negatively worded items had to be reversed (a score of 1 became 7 and 7 became 1) in order to obtain the total score. The lowest and maximum possible scores were 34 and 238 respectively; the score of a neutral attitude was 136. A higher total score indicates a more positive attitude towards older persons.

For the Japanese version, the item-to-total correlations ranged from 0.19 to 0.59 and construct validity was also supported in the factor analysis, where the 3 factors could

be explained, with a total variance of 30.7%.[12] For the Chinese version,[13] the Cronbach's alpha was 0.82 for the total scale. Two factors were extracted and explained a total variance of 54.7%. Therefore, this KOAP version is a fully reliable instrument.[13]

Procedures

Subjects volunteered to participate during class time. Each student was asked to sign an informed consent form to ensure voluntary participation. They had the choice to withdraw at any time, should they decide to change their mind. They were also reassured of strict confidentiality of their identities. A packet containing 2 copies of the informed consent and the KAOP, with a cover letter, was given to each participant. The survey took approximately 10 minutes to complete. Within the first 2 weeks of the 2007 academic year, the questionnaire which included a cover letter that addressed the purpose and importance of the study was given to each participant by a teaching assistant during class time. Written and verbal instructions were explained to students by the instructor who then left the classroom, but the teaching assistants remained to handle questions from students.

Data Analysis

Descriptive statistics were used to report demographical data. For continuous and normally distributed variables, independent *t*-test analysis was used to compare the demographical characteristics between the 2 groups of participants. Chi-square was used to compare categorical variables. A significance level of 0.05 was used for all analysis. SPSS 14.0 for Windows was used for data entry and analysis.

Results

Demographic Characteristics of the Sample

Out of the 311 questionnaires distributed, 275 were returned (88.4%). Differences in questionnaire proportions between different types of students are summarised in Table 1. The percentage of male and female students was almost equal (Table 1). The sample reported slightly positive attitudes (Mean, 144.30; SD, 17.89), with approximately half of the subjects (50.1%) scoring above the mean, demonstrating greater positive attitudes (Table 1). Female students had higher scores, while Year 2 students (Mean, 146.01; SD, 18.59) rated higher than seniors (Mean, 140.05; SD, 15.31). The minimum and maximum scores of the entire sample were 82 and 197 respectively.

Analysis of Students' Attitudes Towards the Elderly

The majority of the participants were medical students (n = 191) and most of them were in Year 2. The mean score for medical student was 138.77 (SD, 15.04), which is

Table 1. Summary of Major, Year of Study, Gender and Mean Score

	Mean	n	SD	df	t	P
Major (n=275)				273	-8.719	.000*
Medicine	138.77	191	15.04			
Nursing	156.86	84	17.56			
Year of study				273		.012*
Sophomore	146.01	196	18.59		2.526	
Senior	140.04	79	15.31			
Gender				273		.000*
Male	140.47	140	15.93			
Female	148.27	135	18.97		-3.698	

SD: standard deviatiom; *Note: *P* <0.05

below the mean for the total sample. Their range was 88 to 177. Sixty-seven (35%) indicated that they would consider a career in geriatric medicine in the future and their mean score was 142.58 (SD, 16.28).

Nursing students (Mean, 156.86; SD, 17.56) scored higher than medical students (Mean, 138.77; SD, 15.04). Sixty-three nursing students (75%) indicated that they would like to choose gerontological nursing after graduation. Their mean score was 164 (SD, 15.82); *t*-tests showed significant differences between student majors, between males and females, and between Year 2 students and seniors in total KAOP scores (Table 1).

A *t*-test was used to assess the difference in the mean scores of KAOP between participants and significant differences were found between medical and nursing students, between Year 2 students and seniors, and between males and females (Table 1).

The reliability for the scale in this study population was measured using Cronbach's alpha coefficient, which was 0.82 on the KAOP scale.

Construct Validity

In order to assess the validity of the KAOP scale, factor analysis was employed; 2 factors were extracted. The 2-factor model could explain 54.7% of the variance. All 34 items demonstrated moderate to strong qualities (>0.40). Factor 1, also known as *prejudice*, consisted of 17 negative items, and accounted for 33.6% of the variance. Factor 2, also known as *appreciation*, consisted of only positive items, and accounted for 21.1% of the variance (Table 2).

Matched Item Pair Correlations

A Pearson correlation was employed to explore subject ambivalence towards the elderly. Seventeen matched pairs were analysed using Pearson correlations to explore the causes for these results. The 34 items were categorised into 2 factors (positive and negative), meaning that the subjects were ambivalent in their attitudes towards the elderly. Endorsing positive items does not necessarily imply rejecting negative items (Nathan Kogan – personal communication, 23 November 2007). To obtain a better understanding of this ambivalence, calculating the Pearson correlations between the 17 matched pairs is most appropriate.

With the use of reverse scoring, the 17 correlations should range from moderately positive to approximately zero. The magnitudes of the correlations across the paired items will show whether the respondents have greater or lesser ambivalence; higher correlations indicate less ambivalence (Table 3).

Substantial variations in mean levels across KAOP items are noticed. It is especially noteworthy that item pair #5 which was about the living conditions had the highest mean (most unfavorable attitude). Only 1 item pair #17 yielded means below 3.00. Item Pairs #1, 2, 3, 5, 9, 11, 12, 15, 16, and 17 yielded matched pair correlations below 3.00. Specifically, item pair #11 yielded the lowest matched pair correlation, indicating greater ambivalence (Table 3).

Subscale-Subscale Correlation

Based on Kogan,[14] individual positive and negative item in the questionnaire should be correlated to make sure that the respondents are aware of the content of the items. If either the positive or negative score is reversed, the correlation should be significantly positive. If the score is not reversed, the correlation should be significantly negative. If neither is seen, response sets such as acquiescence may be overwhelming the data. In this study, scores for negative items were reversed. Pearson correlation coefficients between positive and negative scores were computed for the total sample. There was a significant correlation between positive and negative scores (r = 0.42, *P* <0.001).

Table 2. Factor Loadings after Varimax Rotation for the KAOP Scale

Item	Item content	Factor 1 Prejudice	Factor 2 Appreciation
15N	The elderly are irritable, grouchy and . unpleasant	0.88	0.21
12N	The elderly have a negative influence on a neighborhood.	0.82	0.19
10N	The elderly are always prying into the affairs of others.	0.80	0.02
14N	The elderly are untidy.	0.76	0.04
16N	The elderly complain about the young.	0.72	0.17
9N	The elderly bore others with their stories.	0.71	0.26
5N	The elderly have shabby homes.	0.68	0.26
11N	The elderly have irritating faults.	0.66	0.05
8N	The elderly make others feel ill at ease.	0.64	0.01
13N	The elderly are much alike.	0.63	0.17
3N	The elderly are unable to change.	0.59	0.05
17N	The elderly have excessive demands for love.	0.57	0.09
7N	The elderly have too much influence in society.	0.54	0.27
4N	The elderly quit work when they become pensioners.	0.52	0.09
6N	Wisdom does not come with advancing age.	0.49	0.03
1N	The elderly should live in special residences.	0.46	0.15
2N	The elderly are different.	0.41	0.10
10P	The elderly mind their own business.	0.24	0.75
5P	The elderly have clean, attractive homes.	0.03	0.70
7P	The elderly should have more power in society.	0.03	0.69
8P	The elderly are relaxing to be with.	0.06	0.68
15P	The elderly are cheerful, agreeable and good humored.	0.15	0.66
6P	The elderly grow wiser with advancing age.	0.27	0.65
14P	The elderly are clean and neat.	0.21	0.65
4P	The elderly prefer to work as long as they can.	0.28	0.60
9P	It is nice when the elderly speak about their past.	0.15	0.58
16P	The elderly seldom complain about the young.	0.08	0.51
3P	The elderly are capable of new adjustment.	0.23	0.50

Item	Item content	Factor 1 Prejudice	Factor 2 Appreciation
1P	The elderly should live in special residences.	0.09	0.49
12P	Neighborhoods are nice when integrated with the elderly.	0.20	0.48
17P	The elderly need no more love than others.	0.01	0.46
13P	The elderly are different from one another.	0.07	0.45
11P	The elderly have the same faults as the young.	0.25	0.43
2P	The elderly are no different from anyone else.	0.02	0.43

Discussion

The limitation of this study is that it is confined to the population of medical and nursing students in central Taiwan. Therefore, these findings cannot be viewed as a good representation of all medical and nursing students in Taiwan. Further research with random sampling and increased sample size may be needed to be conducted for students with other majors, such as social work and physical therapy, who may also have opportunities to care for older people.

Students' Attitudes Towards the Elderly

This study was conducted to elucidate the initial attitudes of medical and nursing students towards the elderly in Taiwan. To our knowledge, no research as yet has been conducted to explore the attitudes of healthcare professionals or students towards the elderly in Taiwan. Since medical and nursing students are future aged care providers, understanding their attitudes towards the elderly is vital.

Taiwanese medical and nursing students (Mean, 144.30; SD, 17.89) who took part in this study were reported to have slightly more positive attitudes when compared with Jordanian students (Mean, 110.6; SD, 21.79).[10] Based on Hweidi et al,[10] male Jordanian students tended to report somewhat higher positive attitudes towards older people[10,15-17] which is not consistent with our findings. In Jordan, males are the sole breadwinners and females are homemakers who take care of the elderly which may be considered as an extra burden.[10] This extra burden in responsibilities might negatively influence female students' attitudes towards the elderly. Our result is consistent with Kwan and Law[15] and Stewart[18] who indicated that female students have more positive attitudes towards older people than male students. Studies have also indicated that the attitudes of students who enter into nursing training are more positive towards older people.[15,18] However, Slevin[19] found no such difference. This could be because based on Taiwanese culture and traditions, nursing students are taught to be patient and caring. However, a research

Table 3. Means, Standard Deviations and Matched Item Pair Correlations (Rp) for KAOP Items (N = 275)

Item	Item content	Mean	SD	Rp
1N	The elderly should live in special residences.	4.04	1.84	
1P	The elderly should live integrated with the young.	5.01	1.15	0.22
2N	The elderly are different.	3.12	1.56	
2P	The elderly are no different from anyone else.	4.11	1.45	0.20
3N	The elderly are unable to change.	5.29	1.19	
3P	The elderly are capable of new adjustment.	5.15	1.17	0.27
4N	The elderly quit work when they become pensioners.	5.01	1.28	
4P	The elderly prefer to work as long as they can.	5.21	1.13	0.33
5N	The elderly have shabby homes.	6.07	1.06	
5P	The elderly have clean, attractive homes.	4.56	1.36	0.22
6N	Wisdom does not come with advancing age.	3.42	1.55	
6P	The elderly grow wiser with advancing age.	3.99	1.51	0.50
7N	The elderly have too much influence in society.	3.20	1.39	
7P	The elderly should have more power in society.	4.57	1.45	0.42
8N	The elderly make others feel ill at ease.	5.20	1.37	
8P	The elderly are relaxing to be with.	4.43	1.43	0.38
9N	The elderly bore others with their stories.	5.01	1.56	
9P	It is nice when the elderly speak about their past.	5.46	1.12	0.21
10N	The elderly are always prying into the affairs of others.	4.89	1.41	
10P	The elderly mind their own business.	4.68	1.41	0.30
11N	The elderly have irritating faults.	4.64	1.53	
11P	The elderly have the same faults as the young.	5.40	0.97	0.11
12N	The elderly have a negative influence on a neighborhood.	5.24	1.35	
12P	Neighborhoods are nice when integrated with the elderly.	5.70	1.24	0.16
13N	The elderly are much alike.	4.50	1.64	
13P	The elderly are different from one another.	5.45	1.36	0.40
14N	The elderly are untidy.	5.76	0.94	
14P	The elderly are clean and neat.	4.71	1.34	0.44
15N	The elderly are irritable, grouchy and unpleasant.	5.48	1.16	
15P	The elderly are cheerful, agreeable and good-humored.	4.65	1.35	0.13
16N	The elderly complain about the young.	5.21	1.37	
16P	The elderly seldom complain about the young.	3.25	1.22	0.23
17N	The elderly have excessive demands for love.	2.25	1.33	
17P	The elderly need no more love than others.	2.17	1.15	0.16

SD: standard deviation; Note: $P < 0.001$

study indicated that gender differences were not found to be important in affecting students' attitudes towards older people.[20]

Our finding also showed younger students (Year 2 students) as having high scores, which is not consistent with Jordanian and New Zealand students. Usually, students' age was positively associated with their attitudes towards older people; as the age of the students increased, the students tended to develop more positive attitude.[10,21] However, Soderhamn et al[21] indicated that older students' answers tend to positively biased. In the present study, younger students reported to have more positive attitudes towards older people than senior students and reached a significant level ($P = 0.012$). Unproportional sample size

could be a possible explanation. For the unproportional sample size, the *t*-test was generally unclear and the significant level should be set at 0.001.[22,23] If based on this criterion, no significant difference existed between Year 2 students and seniors. Another possibility is that the older students (seniors) have heavier schoolwork loads. Also, the school work loads of the senior students are much more specialised and career-specific; they may not have time to volunteer at the university hospital. Year 2 students are needed, under a policy, to provide healthcare service to patients, including older ones, in the university hospital for a period of 1 year, thus giving them more opportunities to interact with older people. Haight et al[24] and Stewart et al[18] suggested that providing educational experiences with healthy older people, 1 year prior to clinical experience, has a positive influence on students' attitudes towards older people. Therefore, student volunteer scheme seems to yield positive benefits in this regard and deserves further exploration.

Approximately one-third of the medical students and two-thirds of the nursing students responded that they would consider geriatric medicine or gerontological nursing as a potential career choice in the future. These students showed higher scores than students who did not consider geriatrics, but this did not reach much significance. Compared to a British study[25] and a Jordanian study,[10] Taiwanese students show better attitudes and willingness towards geriatric medicine or gerontological nursing as a career choice.

Ambivalence Regarding Attitudes Towards Older People

Dr Nathan Kogan suggested that we analyse the 17 matched pairs to explore the student ambivalence towards older people. Endorsing positive items does not necessarily imply rejecting negative items. In order to obtain a better understanding of this ambivalence, Pearson correlations between the 17 matched pairs were calculated. Higher correlations indicate less ambivalence (Table 2). Several item pairs had low correlations, indicating greater ambivalence, including item pairs #1, 2, 3, 5, 9, 11, 12, 15, 16, and 17. The results indicate that students have ambivalent attitudes towards the elderly on these 10 pair items. The results also provide useful information for faculty and practitioners for gerontology curriculum design.

Future Research

This exploration can further help educators in their efforts to assist health-related students in gaining a better understanding of the ageing process. It can reduce fears about ageing, enhance relationships with ageing family members and help develop skills and abilities that will aid health professionals when working with older adults.

Higher attitude scores of students may reflect greater

enthusiasm. Even though Taiwanese students reported to have slightly more positive attitudes than students in other countries;[10] they are still fairly ambivalent towards older people. Educators, including those who design nursing and medical curricula, must better prepare students for the booming elderly population. A previous study has indicated that intensive gerontological/geriatric education may be necessary to promote positive attitudes towards elderly care.[26] Therefore, based on the findings of this study, further research should establish adequate gerontology/geriatric curricula to reduce student ambivalence, (i.e. the ambivalence of the 17 matched pair items).

Recommendations

To prevent biasness when attempting the questionnaire, personal information regarding names and student IDs must be kept confidential. Furthermore, different groups of researchers and research assistants were employed for the process of data collection.

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