

ORIGINAL RESEARCH

Nursing students' attitudes towards older people and future career choices in Macao-A pilot study

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ABSTRACT

Background: As global ageing, Macao also faces challenges with regards to an aging population. Not many nursing students are willing to choose gerontological nursing (GN) as a career choice. This pilot study was conducted on a small sample of Macao nursing students to assess nursing students' attitudes towards older people and their future career choices. Moreover, this pilot study is aimed to validate the survey questionnaire for the further study.

Methods: A cross-sectional survey to explore 30 Macao nursing students' attitudes towards older people and future career choices. Kogan's attitudes towards older people scale (KAOP) was adopted in this study.

Results: About 33.3% nursing students agreed to work in GN after graduation. Only 6.7% participants chose "aged care institute" as their first choice for future career. Participants have higher mean scores of KAOP that indicate more positive attitudes towards older people. "GN practice experience" and "personal preference" are confirmed as contributors for nursing students towards GN in this study.

Conclusions: Macao nursing students have positive attitudes towards older people but not many of them would choose GN as future career. This pilot study provided knowledge to current nursing educators and government for the situation among nursing students in Macao.

Key Words: Nursing student, Attitude towards older people, Career choice

1. INTRODUCTION

As global ageing, it is estimated that older population will be nearly double from 12% to 22% of the world between 2015 and 2050.^[1] Macao also faces challenges with regards to an aging population. In 2016, 9.1% of Macao's total population of approximately 644,900 people was aged 65 or older and the life expectancies at birth was 83.3 of age, for women and men were 86.4 years and 80.2 years of age respectively.^[2] It is estimated that by 2036, 23.7% of Macao's population will be aged 65 or older.^[2,3] As a result, there will be more health care professionals needed to provide direct care to older people in households, communities, and health care

settings including clinics, hospitals, and nursing homes.^[4,5] Ageing provides challenges and opportunities for the health-care professionals. The preparation to meet global ageing is important and essential especially for nursing students, as they will provide direct care to older population after graduation. As nursing students will play a critical role in caring for the increasing elderly population, it is important that they possess the necessary skills to care for the elderly and also maintain positive attitudes towards elderly people.

Studies concluded most new nursing graduates would be commonly and often working with older people^[6] such as

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nursing home and elderly adult day care centers, even though they do not want to choose gerontological nursing as their first job after graduation.^[6-9] Unfortunately, many countries are finding it difficult to recruit enough nurses to provide gerontological care^[4,10,11] or to provide direct care to older people. Some nursing students showed they have positive attitudes towards older people, but they did not want to work at gerontological setting after graduation.^[12,13] A study addressed relatively few nursing students are willing to choose gerontology as a career choice and nursing students having negative attitudes^[14] towards older people that would lead the consequence for not working in GN settings after graduation.

Nursing education has been reported to play a significant role in changing nursing students' attitudes towards older people and promoting their willingness to work in gerontological setting after graduation.^[13] A unique course in gerontological nursing (GN) including theory course and clinical practice delivered for Bachelor of Science in Nursing (BSN) programme have been linked to promote nursing students' attitudes and interests for working in GN settings after graduation.^[4,15,16] Given the situation of global ageing, GN course has been adopted and delivered as a compulsory unique subject in Macao since 2008 including theory class and clinical practice. Macao nursing students' attitudes towards older people and working in GN after graduation have been not yet explored. The more understanding in nursing students' attitudes towards older people and future career choices, the better preparation in GN course encouraging more nursing students working in GN after graduation.

This study was conducted on a small sample of Macao nursing students to assess nursing students' attitudes towards older people and their future career choices. Moreover, this pilot study was aimed to validate the survey questionnaire for the further main study.

2. METHODS

2.1 Design

This pilot study used a descriptive, non-experimental, cross-sectional survey to assess Macao nursing students' attitudes towards older people and future career choices. The convenience sampling method was used to collect data for this pilot study. All participants were invited and voluntary to join this pilot study. A test-retest design was utilized to examine the reliability of KAOP in Macao.

2.2 Participants and setting

The 4-year BSN programme in Macao provides a compulsory and stand-alone GN course including theory classes and clinical practice at Year III. This pilot study was conducted at one of higher nursing education institutes and including 30 un-

dergraduate nursing students as this institute produces 50-60 graduates to be registered nurses in Macao every year. This study was conducted on a small sample of Macao nursing students to have the basic understandings for their attitude towards old people and future career choices, furthermore to validate the survey questionnaire for the future study in Macao.

There were inclusion criteria for participants in this study: 1) A nursing student in the BSN program, 2) vulnerable to join this study and 3) willingness to participate this study for the test-retest survey. Exclusion criteria were 1) no interest in this study, and 2) lack of time to participate test-retest survey in the study.

2.3 Instrument

The questionnaire was designed as a self-administered questionnaire containing seven components: demographic, experience with older people, intention with older people, GN education, future career choices, and Kogan's attitude towards old people scale (KAOP). The questionnaire will take approximately 30 to 60 minutes for the completion.

The Chinese Version of Kogan's Attitude towards Older People is adopted to explore nursing students' attitude towards aging in Macao. KAOP (1961) was developed to assess attitude towards elderly people^[17] with respect to norms and individual differences, stereotypes of old people, and misconceptions about older people.^[18] KAOP is still the most commonly used questionnaire in attitudes towards older people, as its various translations have good content validity, construct validity, internal consistency and stability reliability which have been reported for both variants of the instrument.^[19] Reliability and concurrent validity have been addressed by Kogan (1961), who reported item-total scale correlations among undergraduate American subjects in the range of 0.10-0.70. For the Japanese version the Cronbach's alpha was 0.87 for the total scale,^[20] for the Greek version 0.80^[21,22] for the Turkish version 0.84^[19] and for the Swedish version 0.79.^[23]

The average of the content validity index (CVI) in Chinese version of KAOP was 0.92 in the final version indicating adequate content validity > .80.^[24,25] The Cronbach's alpha was 0.82 for the total (0.83 for Prejudice, 0.81 for Appreciation), stability was 0.86 for Prejudice and 0.91 for Appreciation, and adequate for Chinese version of Kogan's Attitude towards older people.^[25] The higher score of KAOP indicated more positive attitude toward older people.

Validity of instrument

This research adopted CVI as the indicator of validity. Content validity is indicated if the items in the tool sample the

complete range of the attribute under study. Five experts who have over ten-year experiences in clinical practice, long-term care center, education of gerontological nursing in Macao were invited to review the questionnaire items and validate that they are relevant indicators of the construct. Item-level Content Validity Index (I-CVI) and Scale-Level Content Validity Index (S-CVI) were calculated by the rating scores from experts. This study followed criteria a minimum I-CVI of 0.78 and it would have an average S-CVI of 0.90 or higher.^[24] The results of validity are I-CVI .988 and S-CVI .933 which represents this questionnaire has good and stable validity. According to the comments and suggestions from experts, the questionnaire has been modified words and items for better understanding to participants in this pilot study.

2.4 Data collection procedure

Data were collected via validated questionnaire to participants. Participants were recruited through invitation. Thirty nursing students were volunteers to join this study. This pilot study conducted in Jan 2015 and there was no major examination during data collection period. The investigator met participants and explained the purpose and procedure of this study to participants. Participants were guaranteed that their personal data will be replaced by codes, and all data would be kept as confidential. All participants signed and returned written consents. Thirty self-administrated survey questionnaires were distributed to participants. All questionnaires were finished and returned by participants within one hour. Two weeks following the first completion of pilot test, another KAOP form was given to 30 student nurses for the follow up.

2.5 Data analysis

This study used Statistical Package for the Social Sciences (SPSS) 20.0 for data analysis.

Descriptive statistics, including measurements of frequency distributions (percent of participant) and central tendency (mean) as well as measures of dispersion or variability (standard deviation), were utilized to organize and summarize findings, including demographic data to provide information about the characteristics of the participants, experience with older people, intention with older people, GN education, and future career choice.

The KAOP tool consisted of 34 items regarding older people; one set of 17 items expressing negative statements (KAOP-), and another set of 17 items expressing positive statements (KAOP+). It is designed as a summed Likert attitude scale on a six-point response categories that ranges from 1 (strongly disagree) to 7 (strongly agree). These categories were scored 1, 2, 3, 5, 6, and 7, respectively, with a score of 4 assigned

in the rare case of failure to respond to an item.^[17] The KAOP instrument is uniquely constructed to yield three distinct measures; KAOP total score, and two subscales, the KAOP+ subscale and the KAOP- subscale. In the computation of scores, negatively worded items are reversed scored to obtain the KAOP total score. The possible score ranges from 34 – 238, and a higher score indicates a more positive attitude. For the Chinese version, the internal consistency reliability (Cronbach's alpha) was 0.82 for the total scale (0.83 for KAOP-, 0.81 for KAOP+).^[25] In this pilot study, internal consistency reliability and stability of KAOP were assessed. Cronbach's alpha was used to estimate the internal consistency reliability. Stability was assessed using a repeated measure design with a 2-week interval by Pearson correlations.

2.6 Ethical considerations

Ethical approvals for data collection were obtained and granted from The Education University of Hong Kong and Macao Polytechnic Institute ethics committees prior to commencing this pilot study. All participants have been provided the information sheets about the purpose, the procedure, and the opportunity to withdraw of the study. All participants provided informed consents after the brief introduction by principal investigator. Confidentiality and anonymous were assured. All personal data were replaced by codes and number in the study.

3. RESULTS

3.1 Descriptive data

Thirty nursing students completed survey questionnaires within one hour. Demographic data of nursing students are summarized in Table 1. Most participants were female nursing students (80%) in this study with mean age 21.6 (SD = 1.75). 80% (n = 24) nursing students in this study answered no religion. Nursing students' experiences with older people are addressed in Table 2. Most nursing students reported "getting along with 65+" with "good" or "very good" (80%) although only 46.7% nursing students reported they "lived with 65+". 30% (n = 9) participants were "raised up by 65+". As year III nursing students were doing clinical practice, so this pilot study did not have participant from year III nursing students.

In intention with older people (see Table 3), most nursing students (63.4%) reported "agree" or "strongly agree" to "live with 65+" in the future. Most nursing students expressed (see Table 4) "nursing is the first choice for studying in university" (86%). GN taught subject and clinical practicum were evaluated by nursing students as "fair" (53.3% and 43.3% respectively).

Table 1. Demographic data of participants (n = 30)

Variables	n	%	Mean	Standard Deviation
Age	30		21.6	1.75
Gender	Male	6	20	
	Female	24	80	
Education	BSN Year I	8	26.7	
	BSN Year II	8	26.7	
	BSN Year III	0	0	
	BSN Year IV	14	46.7	
Religion	None	24	80	
	Buddhist	1	3.3	
	Taoism	1	3.3	
	Catholic	3	10	
	Others	1	3.3	

Table 2. Experience with ageing (n = 30)

Variable	n	%	
Family status	Living with parents and sibling	29	96.3
	Living with grand-parents, parents and sibling	1	3.3
Living with 65+	No	28	93.3
	Yes	2	6.7
Neighbor with 65+	No	19	63.3
	Yes	11	36.7
Raised up by 65+	No	21	70
	Yes	9	30
Lived with 65+	No	16	53.3
	Yes	14	46.7
Getting along with 65+	Fair	6	20
	Good	17	56.7
	Very good	7	23.3

Table 3. Intention factor (n = 30)

Variable	n	%	
Like to spend time with 65+	Disagree	1	3.3
	Don't mind	8	26.7
	Agree	18	60
	Strongly Agree	2	6.7
To live with 65+ in the future	Disagree	1	3.3
	Don't mind	10	33.3
	Agree	17	56.7
	Strongly Agree	2	6.7
Filial Piety for every one	Don't mind	1	3.3
	Agree	12	40
	Strongly Agree	17	56.7

3.2 Future career choice and affecting factors

About 33.3% nursing students agreed to work in GN after graduation. Nursing students rated the first important factor to affect choice in working in GN were GN practice experience (33.3%) and personal preference (33.3%)(see Table 5

and Figure 1). Participants' first preference for future nursing work was midwifery (30%), only 6.7% participants chose "aged care institute" as their first choice for future career (see Table 6 and Figure 2).

Table 4. GN Study and GN clinical experience (n = 30)

Variable		n	%
Clinical practice experience with 65+	None	4	13.3
	Yes	26	86.7
Clinical practice experience with 65+	Fair	6	20
	Good	24	80
Nursing is my first study choice	No	4	13.3
	Yes	26	86.7
Working in GN after graduation	Disagree	3	10
	Don't mind	17	56.7
	Agree	10	33.3
Family working in Nursing	No	27	90
	Yes, not related to GN	3	10
	Not Applicable	10	33.3
Experience of GN taught subject	Fair	16	53.3
	Good	4	13.3
	Not Applicable	10	33.3
Experience of GN clinical practice	Poor	1	3.3
	Fair	13	43.3
	Good	6	20

3.3 Attitude towards old people scale (KAOP)

The internal consistency and stability were adopted to evaluate the reliability of KAOP. Cronbach's alpha was used to estimate the internal consistency reliability. Stability was assessed using a repeated measure design with a 2-week interval by Pearson correlations. The results of KAOP are shown in Table 6. Participants have higher mean scores of KAOP for the first time (Mean = 167.83, SD = 15.86) and the second time (Mean = 166.43, SD = 16.97). The higher mean scores indicated more positive attitudes towards older people among participants.

3.3.1 Stability reliability- test-retest reliability of KAOP

In order to determine the stability reliability of Kogan's attitude towards old people scale. The retest of KAOP was applied after two weeks to 30 nursing students. The correlation between the first time test and retest (two weeks later) was calculated with Pearson-Correlation Analysis (see Table 6). The correlation for the total score was $r = 0.73$ at a significance of $p < .01$. Stability reliability was adequate in this pilot study.

3.3.2 Reliability- internal consistency of KAOP

The internal consistency of KAOP was measured by the Cronbach alpha test (see Table 7). Cronbach alpha for the first time and 2nd time (two weeks later) were 0.84 and 0.86 respectively for the total items of KAOP that indicate good internal consistency reliability as coefficients of .80 or greater are highly desirable.^[24]

4. DISCUSSION

This pilot research provided the basic understanding in Macao nursing students' experiences with older people, in-

tentions with older people, experiences GN education, future career choices and contributors, and attitude towards older people among nursing students in Macao.

4.1 Future career choices

In this pilot study, Macao nursing students reported getting along with 65+ (80%) and like to spend time with 65+ (66.7%) in the future but only 33.3% (N = 10) nursing students will want to work in GN after graduation. The findings showed 33.3% Macao nursing students in this study agreed to work in GN after graduation, though previous studies concluded nursing students did not want to work at gerontological nursing settings.^[26-30] The finding is lower than previous two studies that concluded higher percentages of nursing students from China (72.1%), Australia (45.3%) and Sweden (58%) would like to work with older people after graduation.^[31,32] On the other hand, only 6.7% Macao nursing students in this study chose "aged care institute" as their first choice for future career. This finding has almost the same result which compared existing researches for working in gerontological nursing- in Belgium, 8.6% of qualified nurses;^[15] in Australia, 8% of nursing students for possible career choices;^[30] in Jordan, 62% of qualified nurses said they were positively uninterested in gerontological care.^[33] This study showed almost the same result with previous studies elsewhere. For the current situation, most nurses in Macao would like to work at the only public hospital or public care centers as more benefits and better future. Aged care centers or long-term care centers may not have the good benefits than public settings, thus not many nursing students in this study chose aged care center as their future career choices.

Table 5. Future career choices (n = 30)

Variable	n	%	
1. The first important factor to affect choice in working in GN	GN practice experience	10	33.3
	Personal preference	10	33.3
	Past experience with 65+	5	16.7
	Working environment	3	10
	Salary	1	3.3
	Society factor and social value	1	3.3
2. The second important factor to affect choice in working in GN	Working environment	6	20
	Salary	6	20
	Past experience with 65+	4	13.3
	Role model-affected by teacher or preceptors	4	13.3
	Personal preference	4	13.3
	GN Practice experience	3	10
	Society factor and social value	2	6.7
	Peer group-affected by classmates	1	3.3
3. The Third important factor to affect choice in working in GN	Society factor and social value	7	23.3
	Past experience with 65+	5	16.7
	Working environment	5	16.7
	Salary	4	13.3
	GN practice experience	3	10
	Suggestion by parents and family	3	10
	Personal preference	2	6.7
	Peer group-affected by classmates	1	3.3
4. The first preference future nursing work	Midwifery	9	30
	Publichealth nursing	6	20
	Medical/surgical nursing	3	10
	Psychiatric nursing	3	10
	Aged care institute	2	6.7
	Critical care nursing	2	6.7
	Paediatric nursing	2	6.7
	Other-ER nurse anesthetist	2	6.7
5. The second preference future nursing work	nurse anesthetist	1	3.3
	Critical care nursing	7	23.3
	Publichealth nursing	5	16.7
	Paediatric nursing	4	13.3
	Psychiatric nursing	4	13.3
	Medical/surgical nursing	3	10
	Home care nursing	2	6.7
	Operating room nursing	2	6.7
	Aged care institute	1	3.3
	Midwifery	1	3.3
6. The third preference future nursing work	Oncology nursing	1	3.3
	Psychiatric nursing	5	16.7
	Critical care nursing	4	13.3
	Midwifery	4	13.3
	Aged care institute	3	10
	nurse anesthetist	3	10
	Paediatric nursing	3	10
	Medical/surgical nursing	2	6.7
	Operating room nursing	2	6.7
	Publichealth nursing	2	6.7
Home care nursing	1	3.3	
Oncology nursing	1	3.3	

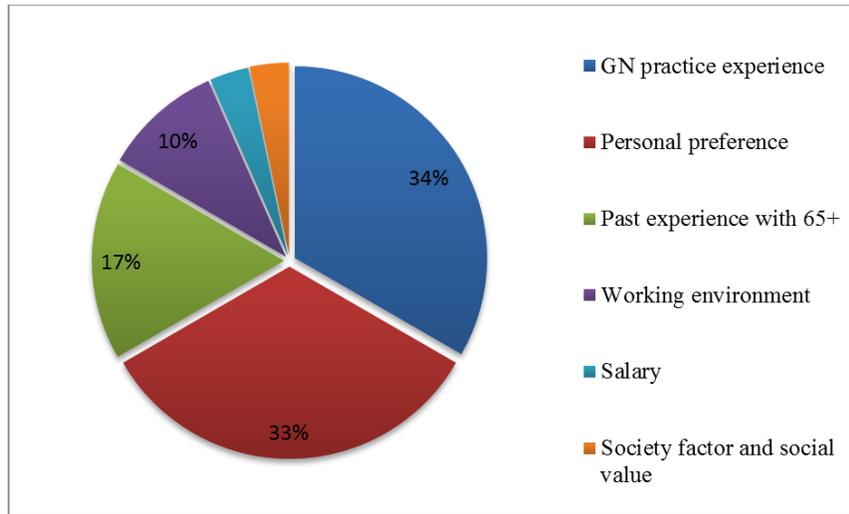


Figure 1. The first important factor to affect choice in working in GN

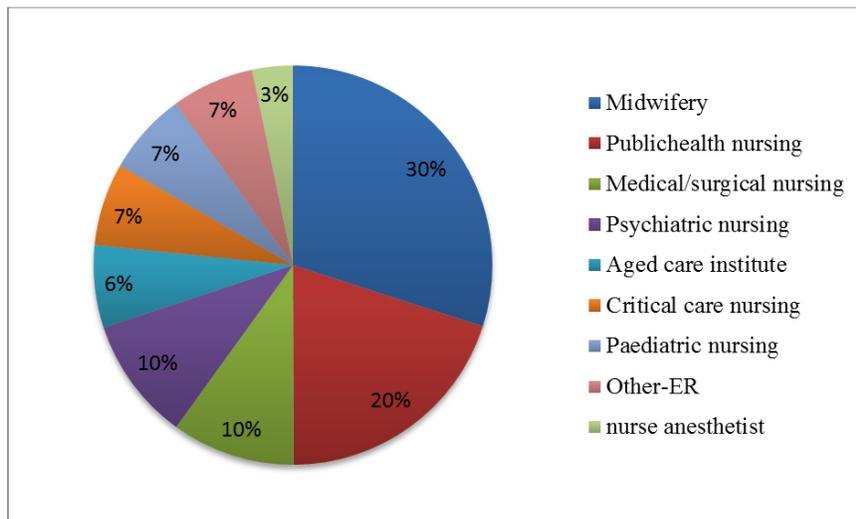


Figure 2. The first preference future nursing work

Nursing students in Macao reported their first preference future nursing work should be midwifery (30%), second preference working place was critical care nursing (23.3%), and the third preference was psychiatric nursing (16.7%) which showed different from the finding about nursing students tend to work in “high-tech” settings such as surgical nursing, intensive care and operating.^[30] The results could be related to the stable birth rates in Macao, though critical care nursing was also rated the secon preference future work in Macao.

Macao nursing students addressed “GN practice experience” and “personal preference” would be important as the first important factor to affect their choices in working GN. These two findings match with previous findings^[34,35] that the effect of clinical experiences was the most profound factor influencing career choice after graduation. GN practice experience

and personal preference are important factors among nursing students in this study for working in the GN, the results provided evidence to nursing educators in the better arrangement of GN practice setting, as well as in promoting nursing students’ interests to GN. This pilot study was conducted in small sample of 30 nursing students; the results will provide evidences for the further study.

4.2 Attitudes towards older people

KAOP was applied to explore Macao nursing students’ attitudes towards older people. The result of KAOP scores indicated high internal consistency reliability and adequate stability reliability, as well as good content validity. The mean scores of KAOP among 30 Macao nursing students were 167.83 (SD = 15.86) for the first time and 166.43 (SD

= 16.97) for the second time that represented more positive score than recently studies in Korean,^[36] Taiwan,^[37] and China.^[38] In item “6N. Wisdom does not come with advancing age” was the lowest score while “13P. The elderly are different from one another.” had the higher score among participants. Participants showed more positive attitudes in “the elderly are different from one another”, but they did not think “wisdom comes with advance age”. This results provide directions to nursing educators for the course preparation of GN programme in the future.

Table 6. Attitude towards old people scale (n = 30)

Variable	First time				2nd time (2 weeks later)			r	p
	n	Min-Max	Mean	SD	Min-Max	Mean	SD		
Total score	30	122-206	167.83	15.86	127-207	166.43	16.97	0.729**	.00
1N. The elderly should live in special residences.	30	2-7	4.9	1.42	2-7	4.9	1.54	0.783**	.00
2N. The elderly are different.	30	2-7	4.17	1.56	2-6	4.37	1.43	0.469**	.00
3N. The elderly are unable to change.	30	3-7	5.17	1.12	3-6	5.23	0.90	0.717**	.00
4N. The elderly quit work when they become pensioners.	30	1-7	5.1	1.21	3-7	5.43	0.73	0.379*	.039
5N. The elderly have shabby homes.	30	3-7	5.87	1.22	2-7	5.63	1.22	0.614**	.00
6N. Wisdom does not come with advancing age.	30	2-6	3.43	1.35	2-6	3.20	1.10	0.404*	.027
7N. The elderly have too much influence in society.	30	2-6	3.87	1.36	2-6	3.90	1.32	0.549**	.002
8N. The elderly make others feel ill at ease.	30	3-6	5.37	0.85	3-7	5.50	1.04	0.525**	.003
9N. The elderly bore others with their stories.	30	2-7	4.97	1.59	2-7	4.97	1.47	0.840**	.00
10N. The elderly are always prying into the affairs of others.	30	3-7	5.47	1.33	2-7	5.20	1.24	0.775**	.00
11N. The elderly have irritating faults.	30	3-7	5.43	1.01	2-7	5.23	1.14	0.422*	.02
12N. The elderly have a negative influence on a neighborhood.	30	2-7	5.57	0.97	2-7	5.40	1.16	0.769**	.00
13N. The elderly are much alike.	30	2-7	4.47	1.46	2-7	4.53	1.36	0.724**	.00
14N. The elderly are untidy.	30	3-7	5.80	0.85	3-7	5.77	0.86	0.787**	.00
15N. The elderly are irritable, grouchy and unpleasant.	30	3-7	5.60	0.93	3-7	5.53	1.07	0.771**	.00
16N. The elderly complain about the young.	30	3-7	5.50	1.08	3-7	5.23	1.28	0.590**	.001
17N. The elderly have excessive demands for love.	30	1-5	2.37	0.93	1-6	2.57	1.22	0.358	.05
1P. The elderly should live integrated with the young.	30	3-6	4.77	1.07	2-6	4.47	1.11	0.60**	.001
2P. The elderly are no different from anyone else.	30	2-7	2.37	0.93	2-7	4.63	1.50	0.57**	.001
3P. The elderly are capable of new adjustment.	30	3-7	5.30	0.84	2-7	4.93	1.29	0.597**	.001
4P. The elderly prefer to work as long as they can.	30	3-7	5.43	0.86	3-7	5.17	1.02	0.427*	.019
5P. The elderly have clean, attractive homes.	30	2-6	4.97	1.10	2-6	4.77	1.33	0.561**	.001
6P. The elderly grow wiser with advancing age.	30	1-6	3.73	1.36	1-6	3.93	1.39	0.428*	.018
7P. The elderly should have more power in society.	30	2-6	4.47	1.11	1-6	4.47	1.38	0.552**	.002
8P. The elderly are relaxing to be with.	30	2-6	4.80	1.19	3-7	4.97	1.13	0.716**	.00
9P. It is nice when the elderly speak about their past.	30	2-7	5.53	1.07	3-7	5.60	1.04	0.508**	.004
10P. The elderly mind their own business.	30	3-6	4.87	1.14	2-6	5.03	1.03	0.503**	.005
11P. The elderly have the same faults as the young.	30	3-7	5.20	1.03	3-7	5.40	0.97	0.712**	.00
12P. Neighborhoods are nice when integrated with the elderly.	30	3-7	5.77	0.82	3-7	5.47	1.04	0.375*	.041
13P. The elderly are different from one another.	30	5-7	6.00	0.70	3-7	5.80	0.89	0.392*	.032
14P. The elderly are clean and neat.	30	3-7	4.60	1.25	2-6	4.67	1.27	0.305	.101
15P. The elderly are cheerful, agreeable and good-humored.	30	2-6	4.83	1.02	3-6	4.77	1.07	0.531**	.003
16P. The elderly seldom complain about the young.	30	2-6	4.03	1.25	2-6	4.00	1.29	0.474**	.008
17P. The elderly need no more love than others.	30	3-7	5.83	1.12	3-7	5.77	1.28	0.31	.095

* $p < .05$; ** $p < .01$.

Table 7. The internal reliability of KAOP (n = 30)

Item	Cronbach alpha (First time)	Cronbach alpha (Two weeks later)
Total items of KAOP	0.84	0.86
KAOP-	0.69	0.68
KAOP+	0.85	0.87

Macao nursing students showed more positive attitudes towards older people in this pilot study. As this pilot study only included 30 Macao nursing students, it is needed to explore Macao all nursing students' attitudes towards older people. This result also provided information to compare with related studies among nursing students elsewhere, as well as to provide the basic understanding for the future study.

4.3 Limitations of this study

There were some limitations in this study. This study was conducted at one institution in Macao, and 30 participants may not be representatives of nursing students in general. This pilot study did not involve Year III nursing students as they were out of campus for clinical practice. Moreover, nursing students were voluntary to join this survey who may have positive attitudes towards older people and lead to the positive results in this study. Finally, this pilot study did not adopt qualitative part to explore nursing students' views and thoughts towards GN or working with older people.

4.4 Suggestion for future study

It is suggested that the future study might explore all nursing students in Macao for their attitudes towards older people and career choices. The future study might consider using longitudinal design to follow up nursing students' changes

from year 1 to 4 during their BSN study. Moreover, nursing students' views and perception for GN education need to be explored in the future.

5. CONCLUSION

The pilot study provided information as evidences for the further study including the method for data collection, analysis, and validity and reliability of instrument. The finding from this pilot study indicated Macao nursing students have positive attitudes towards older people but not many of them would choose GN as future career. The results provided knowledge to educators for the better preparation of GN programme.

The contributors towards working in GN after graduation among Macao nursing students include GN practice experiences and personal preferences. As a result, there would be a need to further explore all nursing students' attitudes towards older people and their future career choices in Macao. This study concluded the survey questionnaire has the adequate validity and reliability; it will be suitable to survey all nursing students' career choices and attitudes towards older people in Macao. Moreover, findings from this pilot study also provided knowledge to current nursing educators and government for the situation among nursing students in Macao.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

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