



Factors Affecting Radiology Student is Attitudes toward Elder Patients

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ABSTRACT:

Introduction: It is of value to comprehend and to evaluate the mindsets of students in radiography towards more elderly patients. Clinical medicine in this population contributes significantly to public health. The ability to offer optimised radiology services to older patients is dependent on the way in which radiology staff view and empathise with this cohort.

Objectives: The aim of this longitudinal qualitative study was to establish the factors which influence the mindsets of third-year university undergraduate radiology students to more elderly individuals with the use of a survey.

Methods A comparison was carried out between data obtained from students in various streams and from a range of levels, and also between students of different genders as they progressed through their practical training. Additionally, a training intervention, which was created specifically in order to enhance students' mindsets towards elderly patients, was implemented.

Results: 71.3% of the undergraduates failed to gain sufficient knowledge regarding the older population (mean score, 139.5 ± 16.0). Their mean score for their knowledge relating to ageing was 12.2 ± 2.7 . Positive attitudes (KoP > 102) were evident in 98.6% and 98.7% of first-year and third-year students, respectively, with a higher KoP score evident in the latter group ($P < 0.01$). Higher scores ($P < 0.01$) were also noted in students who took a particular interest in issues affecting the older population than in their less interested counterparts; the former were also more likely to pursue a career within radiology.

Conclusions: Most of the undergraduate radiography students surveyed exhibited a positive mindset towards older patients. It is recommended that improved access to geriatric medicine training courses should be achieved in order to meet the educational requisites relevant to this healthcare domain.

1. Introduction

The term 'attitude' can be defined as an ongoing collection of tenets, emotions and actions with respect to socially relevant items, cohorts, proceedings or representations. It indicates preferences for or against certain phenomena [1,2]. Currently, the ageing population presents a notable challenge to society, and creates an immediate burden on health and social care service provision [3]. Since staff working in these systems are becoming increasingly obligated to come into contact with more elderly patients, they may be

especially likely to evidence discriminatory attitudes towards these individuals [4].

Radiographers who work in the clinical domain, and who have gained qualifications which enable them to produce high-resolution X-ray images to support diagnostic and therapeutic services, may also be susceptible to exhibiting such behaviours. Diagnostic and therapeutic radiological procedures form essential components of modern clinical work [5]. Thus, staff working in this specialty contribute significantly to the welfare of ageing patients and consequently, their approach conveys



implicit messages to this population cohort, which may ultimately influence the results of their interactions with such patients in either a positive or detrimental manner. For example, if a radiographer were to become repulsed at the presence of a more elderly individual and fail to conduct themselves in an appropriate manner, then the patient's comfort may be compromised; if the staff member did not converse with the patient respectfully, then the patient could become aggressive [4,5,6].

Globally, each month, approximately 870,000 individuals attain the age of 65 years [7]. It has been predicted that by 2025, approximately 70% of the population within developing nations, i.e. 120,000,000, will be of advancing years [8]. In China, the percentage of elderly members of the population has risen quickly, i.e. from 4.9% in 1982 to 9.1% in 2011.

Becoming old per se is not a pathological condition, but it has diverse societal consequences and necessitates the availability of healthcare providers with specific skillsets in order to meet the arising needs. The impact of long-term non-infectious conditions is exacerbated by longevity [9]. Earlier research has demonstrated that healthcare workers who have been employed in the nursing profession for considerable time tend to develop a negative mindset with respect to more aged patients, which may be manifest by adverse approaches and behaviours when administering therapeutic interventions [11]. Few researchers have evaluated the perspectives of medical students in China towards older patients, how well they appreciate the needs of these individuals, and whether they show any interest in becoming gerontologists. Existing data suggest that although the elderly Chinese population is expanding, few medical students show any inclination towards pursuing this medical specialty [12]. Additionally, poor pay dissuades many nursing staff from working in the geriatric wards [13]. Healthcare careers related to the aged are therefore unpopular for both student doctors and nurses [14]. It has been demonstrated that training opportunities in nursing the elderly are infrequently incorporated into course syllabi [15,16]. It has been observed that on oncology units, clinical personnel may demonstrate a negative mindset towards older patients [4]. However, when greater exposure to the elderly population was provided through specific geriatric training initiatives, the negative attitude of medical students could be reversed [17], with

positive mindsets observed in a number of studies [18-22]. In Singapore, 98% medical students demonstrated positive mindsets towards this population subset, but failed to demonstrate specific knowledge regarding elderly patients and their issues [20]. A study from Greece determined that the elderly were more positively viewed by older individuals and females, findings that are in keeping with data published by a study from Switzerland [22].

These observations indicate that the course material delivered during education on gerontology should be modified [15,16,23].

2. Objectives

The aim of this longitudinal qualitative study was to establish the factors which influence the mindsets of third-year university undergraduate radiology students to more elderly individuals with the use of a survey.

3. Methods

Study design:

This research comprised a qualitative longitudinal study, which employed the scale described by Kogan (KoP) in order to assess participants' positive or negative mindsets with respect to elderly individuals.

Study population:

The study population comprised first and third year students of radiological sciences and clinical imaging. Students of both genders were included.

Data collection and instrumentation

An educational intervention, which included detailed lectures and practical activities aimed towards enhancing students' appreciation and understanding of the elderly, was prepared and implemented. The KoP scale was instigated at baseline, before the intervention, and at monthly intervals after the intervention. At the final assessment, subjective data were also gathered in order to facilitate data triangulation.

Pilot study:

A pilot was carried out on 10% of the enrolled participants in order to establish that the questions posed had clarity and how long the online survey would take to complete.



Statistical analysis:

The Statistical Package for Social Sciences software, version 25.0, was used for data analysis. An Excel spreadsheet was utilised to organise the data. Baseline demographic parameters were expressed as mean and standard deviation (SD); their distribution was noted, and analysis performed using Pearson's chi-squared test. Independent sample t-tests were carried out in order to determine age differences for education levels (equal variance). The students' KoP scores were expressed as mean \pm SD. A Gaussian distribution was evident in

relation to varying level and stream students' attitudes and knowledge scores, and to data from students of both genders. The two samples were compared using independent sample t-tests. Analysis of variance (ANOVA) independent samples and the Kruskal-Wallis rank test were utilised for multiple comparisons for data with equal and unequal distributions, respectively. Logistic regression analysis was applied to appraise the interdependence of the following variables; age; gender and desire to work in gerontology. A P-value < 0.05 was deemed to denote statistical significance.

4. Results

Of the initial 335 online surveys disseminated, 325 (97.0%) were completed, giving a return rate of 99.7%. 68 (21%) and 256 (79%) male and female students, respectively, sent in completed questionnaires. The students were aged between 18 and years; mean ages \pm SD for first-year and third-year student cohorts were 18.4 ± 1.1 years and 21.4 ± 1.0 years, respectively. Most students (71.3%) exhibited poor knowledge of the aged; 97.8% admitted to hardly ever viewing television programmes or reading press pieces about this population cohort. 64.8% expressed an interest in older patients; 54% stated that they were amenable to following a career in geriatric medicine.

Item	Year 1 n (%)	Year 3n (%)	t	P	Total n (%)
Mean age (year) (SD)	18.4 (1.1)	21.4 (1.0) –	24.7	0.000*	19.8 (1.8)
Sex	42 (26.3)	26 (15.7)	5.5	0.019*	68 (21)
Male					
Female	117 (73.7)	139 (84.2)	5.5	0.019*	256 (79)
Willing to live with the elderly	92 (57.7)	77 (46.6)	4.1	0.056	169 (52.2)
Yes					
No	67 (42.3)	88 (53.2)	4.1	0.056	155 (47.7)
Previous knowledge about the elderly					
Yes	45 (28.2)	48 (29.1)	0.2	0.876	93 (28.6)
No	114 (71.6)	117 (70.8)	0.2	0.875	231 (71.2)
Frequently watch TV or read newspaper articles about the elderly	5 (3.2)	2 (1.3)	0.7	0.415	7 (2.3)
Yes					
No	154 (96.8)	163 (98.7)	0.7	0.416	317 (97.6)
Interest in the elderly	109 (68.5)	101 (61.3)	1.8	0.166	210 (64.7)
Yes					
No	50 (31.4)	64 (38.8)	1.8	0.166	114 (35.3)
Willing to pursue a career in gerontology	91 (57.3)	84 (50.8)	1.7	0.254	175 (54)
Yes					
No	68 (42.7)	81 (49.2)	1.7	0.253	149 (46)
KAOP > 102	157 (98.6)	163 (98.7)	0.0	1.000	320 (98.6)

*P < 0.05



5. Discussion

Owing to the rapidly expanding ageing population, globally, radiology is likely to play an increasingly significant role in clinical medicine specialties relating to this patient cohort. Consequently, clinical staff working in geriatric medicine, and specifically, in radiology, face a number of difficulties; their approach and appreciation of the issues facing older patients are important factors in optimising service provision. Nevertheless, this topic is poorly covered within the syllabi offered to undergraduate radiology students, and there are few resources available to these students to facilitate their education in this area.

These issues led to radiology students expressing a range of perspectives. A number of students felt that the older population was a burden to society and stated that they did not wish to follow a career in geriatric medicine. This mindset adds further difficulties to enhancing training in this speciality worldwide. Third-year students were found to lack knowledge regarding the ageing population, demonstrating that education in this speciality is inadequate and additionally, does not form a core topic within curricula. Although it has been observed that a logical study of geriatric medicine can enhance students' mindsets with respect to this population, this change is not enduring [17]. One random controlled study showed that 71.3% undergraduate radiology students failed to learn sufficient information regarding the aged [25]. A mean KoP score of 139.5 ± 16.0 was observed, and a mean knowledge score of 12.2 ± 2.7 . Positive attitudes (KoP > 102) were evident in 98.6% and 98.7% first- and third-year undergraduates, respectively, with a higher KoP score evident in third-year students ($P < 0.01$). Higher scores ($P < 0.01$) were also noted in students who took a particular interest in issues affecting the older population than in their less interested counterparts; the former were also more likely to pursue a career within radiology.

6. Conclusion

The survey data indicated that most undergraduate radiology students exhibited a positive mindset with respect to older patients, but had poor knowledge of the issues affecting this population cohort. The authors recommend that the rising requisite for staff within this healthcare domain should be addressed through the

increased provision of educational opportunities in geriatric medicine.

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