

# Assessing the Impact of a Geriatric Clinical Skills Day on Medical Students' Attitudes Toward Geriatrics



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## ABSTRACT

### Background

The aging population requires an improvement in physicians' attitudes, knowledge, and skills, regardless of their specialty. This study aimed to identify attitude changes of University of Toronto pre-clerkship medical students towards geriatrics after participation in a Geriatric Clinical Skills Day (GCSA).

### Methods

This was a before and after study. The GCSA consisted of one large and four small interactive, inter-professional geriatric medicine workshops facilitated by various health professionals. A questionnaire, including the validated UCLA Geriatrics Attitudes Scale, was administered to participating pre-clerkship medical students before and after the GCSA. A one-sample *t*-test and signed rank parametric test were used to determine attitude changes.

### Results

42.1% indicated an interest in Geriatric Medicine, 26.3% in Geriatric Psychiatry, and 63.2% in working with elderly patients. Both pre- and post-mean scores were greater than 3 (neutral), indicating a positive attitude before and after the intervention ( $p < .001$ ). There was no significant difference in the change in mean total scores (signed rank test  $p \geq .12$ , Student's *t*-test  $p > .11$ ).

### Conclusions

The GCSA did not alter pre-clerkship students' attitudes towards geriatrics. This study adds to geriatric medical education research and warrants further investigation in a larger, multi-centred trial.

**Key words:** education, geriatrics, attitude, intervention

## INTRODUCTION

In 2011, seniors accounted for a record high of 14.8% of the population, increased from 13.7% in 2006.<sup>(1)</sup> By 2050, it is projected that seniors will make up more than one-quarter (27%) of the population.<sup>(2)</sup> This increase in the geriatric population will have important consequences and implications for planning in the field of medicine. In 2012, there were 230–242 certified geriatric medicine specialists and approximately 326.15 full-time equivalent functional specialists in geriatrics.<sup>(3)</sup> It is not just the expansion of geriatric specialists that is important; an improvement in attitudes, knowledge, and skills of all physicians is essential when caring for the elderly in everyday practice no matter the specialty.<sup>(4)</sup> This is an important concept in this investigation.

The literature suggests that medical students have a moderately positive attitude towards the elderly at best;<sup>(5)</sup> some even show a negative attitude.<sup>(6-8)</sup> It was found that positive attitudes was associated with a greater interest in geriatric medicine as a career.<sup>(4)</sup> Diachun *et al.*<sup>(9)</sup> found that only 20% of first-year medical students considered a career in geriatrics, and this decreased to 16% in the second year. They also noted that many students make postgraduate specialty decisions early in their third year of medical school. A U.S. study found that 69% of medical students chose their specialty at the end of second year.<sup>(10)</sup> Regardless of specialty choice, improving attitudes towards geriatrics is important in caring for the aging population. Multiple interventions to improve medical student attitudes towards geriatrics have been conducted in efforts to promote the expansion of geriatric medicine. A systematic review by Tullo *et al.*<sup>(11)</sup> which included Canadian data, demonstrated that interventions that last years or months rather than days or hours tend to show a greater change in positive attitudes. This finding is inconsistent since some shorter interventions also showed positive attitude improvement and more extensive interventions showed

no improvement.<sup>(11)</sup> For example, Diachun *et al.*<sup>(12)</sup> found that the intervention group with a two-week geriatric rotation did not worsen attitudes as much as the non-intervention group, but that attitudes worsened over clerkship in both groups. Further studies need to be conducted to identify factors that increase positive attitudes towards geriatric medicine. Almost every medical school in Canada has a Geriatrics Interest Group (GIG) which is organized by students for students to foster awareness of geriatric health issues, organize peer events, and improve student knowledge and understanding of working with older adults in the health-care system. In 2011, at least five of the GIGs organized a Geriatrics Clinical Skills Day (GCSD).<sup>(13)</sup> This study aims to evaluate changes in the attitudes of pre-clerkship medical students towards older persons and care of older persons before and after participation in an interdisciplinary GCSD.

## METHODS

### Study Design

This was a before and after intervention pilot study using a modified version of the validated University of California Los Angeles (UCLA) Geriatrics Attitudes Scale.<sup>(14)</sup> The survey measured the attitudes of pre-clerkship medical students before and after participating in a GCSD organized by the GIG at the University of Toronto. The UCLA Geriatrics Attitude Scale, including demographic questions, was administered after registration via a link to a secure website where participants could complete the survey online.<sup>(15)</sup> The same survey, excluding demographic questions, was re-administered in paper format to the initial cohort immediately following the completion of the GCSD. The data collected from before and after the event were compared in order to understand any changes in attitudes towards geriatric care. The study was approved by the Research Ethics Board at the University of Toronto.

### Setting and Participants

Study participants were first- and second-year medical students at the University of Toronto. The study population was selected using the online registration for the GCSD. Twenty spots to participate in the GCSD were reserved for medical students and twelve spots were reserved for other health-care disciplines; students from other health-care disciplines did not participate in the study, as the UCLA Geriatrics Attitude Scale was only validated in medical training.<sup>(16)</sup> The sample size was limited by the capacity of the GCSD. Attendance for GCSD was optional and voluntary. Registration was opened first to the GIG members, and later was opened to all medical and allied health students.

### Intervention

The GCSD began with a large group case presentation facilitated by a geriatrician who described various challenges of

seniors. The group was then divided into four groups of eight. Each group was comprised of medical students and students from other health disciplines. Each group rotated through four 25-minute interactive workshops. A wound care workshop facilitated by an internal medicine physician taught students how to take a wound culture and how to dress a wound, and to identify particular wounds. A polypharmacy workshop, facilitated by a pharmacist, educated students on blister packs, practical tips, and common medication mistakes made in the elderly population. The adaptive equipment workshop, lead by an occupational therapist, gave students hands-on experience using various adaptive equipments that the elderly use. Lastly, a patient transfer workshop was facilitated by a physiotherapist who taught students safe methods to transfer elderly patients from various positions. The GCSD ended with a large group debriefing session applying the skills from the workshops to the original case, again facilitated by a geriatrician.

### Measurements

The survey consisted of basic demographic questions to gauge students' interest in geriatrics and the 14-item UCLA Geriatrics Attitudes Scale.<sup>(14)</sup> Each item in the UCLA Attitudes Scale is rated on a five-point Likert scale where answers ranged from "strongly agree" to "strongly disagree", with a "neutral" option. One item on the original scale was altered to reflect a Canadian context (Item 2 was changed from "Medicare" to "Elder Care"). Interest in certain medical fields was gauged on a scale of one to seven ("not interested" to "very interested", with a "neutral" option), where interest in the field was a score of five or higher and low interest in the field was a score of three or lower. LimeSurvey was used and was hosted on a secure server (<https://www.limesurvey.org/en/>).<sup>(15)</sup> The survey was also offered in paper form. The last four digits of the students' phone numbers were used to link pre- and post-test survey results.

Scores of the negatively worded items (2, 3, 5, 6, 8, 10, 11, 12, and 13) were reversed and added to the positively worded items to produce a total score. The personal mean score of the non-missing items were imputed for missing data. This method is a widespread practice.<sup>(17)</sup> The same procedure was done for both pre- and post-test data. The mean change in total scores was then examined for significance. Attitude change scores were calculated for each participant by subtracting the pre-score from the post-score. After examining skewness and kurtosis, the signed rank non-parametric test was used to determine any changes in attitudes. The signed rank non-parametric test was performed only for participants completing both the pre- and post-surveys.

To determine whether the participants in this study had an overall positive (mean score of higher than three) or negative (mean score of less than three) attitude, *t*-tests were used to compare the participants' mean scores to a hypothetical population mean score of three (neutral attitude).

All statistical analyses were performed using SAS, version 6.0 (SAS institute, Inc., Cary, NC). A *p* value of less than 0.05 was considered statistically significant. Descriptive statistics were used for all other parts of the analysis.

## RESULTS

There were 19 study participants in the study; however, four did not complete the post-test questionnaire. The age of the participants ranged from 22 to 30 years (mean 24.7 years); 15 were female and four were male; 13 were first-year medical students and six were second-year medical students. Four of 19 (21.1%) indicated that they were interested in specializing in Geriatric Medicine, two (10.5%) in general internal medicine, five (26.3%) in an internal medicine subspecialty, and two (10.53%) in psychiatry. When gauging participants' interests, eight (42.1%) indicated interest in Geriatric Medicine, five (26.3%) in Geriatric Psychiatry, and 12 (63.2%) in working with elderly patients. In comparison, three (15.8%) indicated low interest in Geriatric Medicine, 11 (57.9%) in Geriatric Psychiatry, and three (15.8%) in working with elderly patients.

The most prevalent pre- to post-test score change was zero (i.e., no change). Both pre- and post-mean scores were significantly greater than a score of three (neutral) on a five-point Likert scale, indicating a positive attitude in both groups ( $p < .001$ ). The difference in mean total score is 1.333 (S.D., 3.06) using the signed rank non-parametric test ( $p \geq .12$ ) (see Table 1). The difference in mean total scores varied from -4 to +7 (Figure 1).

## DISCUSSION

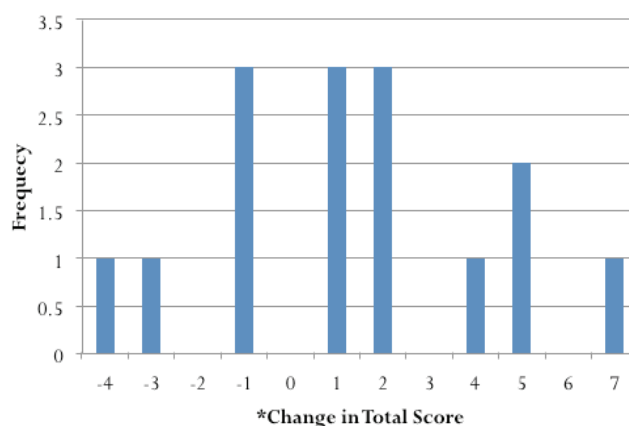
We found an overall positive attitude towards geriatrics and care of older persons among study participants. However, consistent with most short-term interventions,<sup>(5)</sup> the one-day GSCD did not alter attitudes negatively or positively towards geriatrics and care of older persons. There was a trend towards a positive attitude change. Additionally, one study showed an increased interest in a career in geriatrics even though there was no change in attitudes after an intervention.<sup>(4)</sup>

Even though this study may have recruited participants with a bias favouring an interest in geriatrics, not everyone demonstrated an interest in working with the elderly. Torrible *et al.*<sup>(18)</sup> found in their study that the attractiveness of caring for elders, complexity of the patients, the intellectual challenge, and dealing with chronic illness were a few parameters that influenced careers in working with geriatric patients. Regardless of the number of students interested in specializing in geriatric medicine, we aim to see more students with positive attitudes towards working with the elderly due to demographic imperative.

There were various limitations to this investigation. This small study may have been under-powered to detect a difference in attitudes. An exploration of factors that may be

Table 1.  
Summary of pre- and post-total and mean scores

Variable	N	Mean	Std. Dev.	Range
Pre-test total score	19	54.0	5.5	43.1, 65.0
Pre-test mean score	19	3.9	0.4	3.1, 4.6
Post-test total score	15	55.3	5.2	47.0, 64.0
Post-test mean score	15	3.9	0.4	3.4, 4.6



\*The change in score of 4 is actually 3.9.

Figure 1. Frequency of participants and change in total scores (post-pre)

associated with attitudes towards geriatrics must be done, such as level of study, sex, and interest in geriatrics. Also, modifications to the GSCD may be considered by replacing or adding proven interventions in attitude change. For example, including discussions with a senior may be beneficial since it has been shown that early exposure to healthy seniors improves attitudes.<sup>(5)</sup> Attitudes may have also been influenced by varying discussions within groups due to inconsistencies in the proportion of students from other health disciplines. Survey exhaustion may have influenced the responses and attitudes of the students. Our study only examined one institution, which may limit the generalizability of our findings. Those who are interested in geriatrics may have been more likely to participate in the study, resulting in a selection bias. One way to address this bias would be to include a non-intervention control group by surveying the students on the waitlist for the event.

This study is timely and adds to the literature on geriatrics education, as most Geriatrics Interest Groups across Canada implement some variation of a Geriatrics Clinical Skills Day. It is important for the future of geriatric care not only to increase interest in geriatric medicine, but also to improve attitudes towards caring for the elderly, as there is a growing and essential need for more geriatric care. In particular, since most GIGs organize a GSCD, there is opportunity to evaluate this intervention in a larger multi-centred trial.

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## CONFLICT OF INTEREST DISCLOSURES

The authors declare that no conflicts of interest exist.

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