

ORIGINAL ARTICLE

The attitudes of graduate healthcare students toward older adults, personal aging, health care reform, and interprofessional collaboration

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Abstract

Healthcare reform has led to an increased emphasis on interprofessional healthcare models for older adults. Unfortunately, best practice education that focuses on the interprofessional healthcare of the elderly does not yet exist. As a prelude to implementing interprofessional geriatric educational initiatives, we developed a survey to identify potential attitudinal differences among graduate healthcare students regarding personal aging, caring for older adults, healthcare reform and the role of the physician on the interprofessional team. We surveyed third-year medical students, nurse practitioner students and graduate social work students. Attitudes regarding personal aging were similar among the professions. Nurse practitioner and social work students had higher positive attitudes toward the care of older adults. Concerns about the impact of healthcare reform on quality and healthcare costs differed significantly. There was also a significant difference in attitudes concerning the role of the physician as the leader of the interprofessional team. These results provide insights into gerontologic-focused attitudes of graduate healthcare professional students. In an era of dramatic healthcare change, these findings will assist educators in the development and implementation of educational programs to prepare graduate students for the interprofessional care of elderly patients.

Keywords

Education, geriatrics, interprofessional education, interprofessional policy

History

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Introduction

Currently, almost one out of eight Americans is 65 years of age and older (United States Census Bureau, 2011). Over the next 30 years, the number of elderly Americans is expected to more than double. Providing healthcare to this large segment of the population is difficult as many older adults have complex medical and psychosocial needs. The current fee-for-service Medicare system leads to healthcare that is often fragmented and of variable quality (Fisher, Staiger, Bynum, & Gottlieb, 2007). As a result, many older adult patients receive care from healthcare professionals who may not be aware of their multifactorial healthcare needs. In addition, half of all older adults have one or more geriatric syndromes (e.g. cognitive impairment, falls, incontinence and involuntary weight loss) which are often undiagnosed (Cigolle, Langa, Kabeto, Tian, & Blaum, 2007). Consequently, this group of patients is at high risk for healthcare-related iatrogenesis and unnecessary transitions in care (between outpatient, inpatient and post-acute settings) (Covinsky, Pierluissi, & Johnston, 2011; Golden, Tewary, Dang, & Roos, 2010).

Geriatric medicine has long recognized the importance of interprofessional collaborative care for complex older adult patients who often have more than one multifactorial health-related issue. Experience with “physician-directed” interdisciplinary teams is a requirement for geriatric medicine fellowship training in the United States (American College of Graduate Medical Education, 2006). However, in the current fee-for-service payment structure, there has been declining interest in geriatric medicine among physicians and nurse practitioners (Golden, Silverman, & Mintzer, 2012). Despite growing demand (Bureau of Labor Statistics, 2013) only 6.7% of master of social work graduates specialize in geriatrics (Council on Social Work Education, 2011).

Efforts to address the quality and financial stability of healthcare entitlement programs center on Medicare and Medicaid reform legislation (Social Security & Medicare Boards of Trustees, 2009; Sommers & Epstein, 2011; United States Senate, 2010; United States Congress, 2010) and the widespread implementation of emerging models of healthcare that rely on interprofessional care coordination (e.g. patient-centered medical home care, accountable care organizations, home- and community-based Medicaid waivers) (Boult et al., 2009).

While healthcare reform will stimulate further interest in these interprofessional healthcare models for older adults (Kagen, 2010), the evaluation of geriatric-focused longitudinal care programs often fails to demonstrate lower costs and improved

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clinical outcomes (Correia, 2011; Jackson, et al., 2012). Part of the problem is that best practice models for the interprofessional care management of frail older adults do not exist (Golden et al. 2010; Mitchell et al., 2012).

With fewer healthcare professionals specializing in geriatrics, the Institute of Medicine and others have stressed the need to “gerontologize” the curriculums of health professional students (Institute of Medicine, 2008; Golden et al., 2012). An important component of such gerontologizing efforts is to promote education regarding interprofessional collaborative care.

Expanding geriatric-focused interprofessional education beyond geriatric specialist trainees runs the risk of encountering an audience with significant negative perceptions toward aging and the care of older adult patients. It is also important to know the areas where healthcare professional students share common values and where differences exist.

To guide the development of interprofessional geriatric educational initiatives, we developed a survey to identify potential attitudinal differences among graduate healthcare professional students regarding caring for older adults, personal aging, healthcare reform, the role of the physician on the interprofessional team, and anticipated clinical involvement with older adults. We posed three research questions to evaluate differences across the student groups:

- *Question 1:* Do attitudes toward personal aging and caring for older adults vary based on the professional discipline of the student?
- *Question 2:* Are there differences across the student groups in beliefs about the value of, and preferred leadership of, interprofessional healthcare teams?
- *Question 3:* Do beliefs about anticipated impacts of the Patient Protection and Affordable Care Act (PPACA) vary across the disciplines?

Methods

Study design

The study involved a cross-sectional survey, designed to assess attitudes among three categories of graduate health professions students (medicine, nurse practitioner and social work). Between April 2012 and August 2012 investigators distributed “paper and pencil” surveys containing no names or student identification numbers. We distributed the survey to medical students on the last day of their third year clerkships, to first-year nurse practitioner (NP) students during their adult and geriatric didactic sessions, and to master of social work students during their clinical year field practicum seminar. The survey was voluntary and was exempt from review by the Institutional Review Board at the University of Central Florida. The students did not receive any compensation for their participation in the survey.

Data sources

Self-reported demographic variables include gender, age, race/ethnicity, and graduate professional school. To assess student attitudes toward older persons and caring for older patients, we used the 14-item University of California at Los Angeles’ Geriatrics Attitude Scale (GAS) (Reuben et al., 1998). The GAS uses a 5-point Likert scale of positively and negatively worded items, with responses ranging from “strongly disagree” = 1 to “strongly agree” = 5). Higher mean scores are associated with more positive attitudes toward caring for older adults. Internal consistency of the GAS was established by Reuben et al., (1998) who reported a Cronbach’s alpha of 0.76. More recently, Stewart, Roberts, Eleazer, Boland, & Wieland (2006) noted that most published studies achieve levels just below

0.70 while Hollar, Roberts, & Busby-Whitehead (2011) also achieved a level of 0.76. In the study reported here we achieved a Cronbach’s alpha of 0.67, closer to the levels reported by Stewart et al., (2006). Although the GAS has been used in multiple studies involving medical students (Hughes et al., 2007; Kishimoto, Nagoshi, Williams, Masaki, & Blanchette, 2005) evaluations of its generalizability for use with other health professions students have not been examined closely (Hollar et al., 2011)

This study also included the Reactions to Aging Questionnaire (RAQ) (Gething, 1994). This 27-item attitudinal measure assesses positive and negative personal attitudes toward growing older and asks respondents to rate their own opinions on aging using a six-point Likert scale. Possible scores range from 27 to 162, with a higher score indicating a more positive attitude toward personal aging. The RAQ has been tested with a wide variety of healthcare professionals (Gething et al., 2004; Mandy, Lucas, & Hodgson, 2007; Ogbeide & Neumann, 2011). Evaluations of the psychometric properties of the RAQ report good convergent validity with similar attitudinal measures such as the Aging Semantic Differential Scale and discriminant validity with measures of knowledge such as Palmore’s Facts on Aging quiz (Gething, 1994). In this study we achieved a Cronbach’s alpha of 0.87, consistent with other evaluations reporting internal consistencies ranging from 0.81 to 0.87 (Gething, 1994; Gething et al., 2004).

To assess attitudes about health reform legislation and its anticipated role for controlling costs, increasing patient access to care, and improving access and healthcare quality, we used five items from a PPACA assessment tool that surveyed medical students from 10 medical schools (Huntoon et al., 2011). The five items use a 5-point Likert scale assessment tool with responses ranging from “strongly disagree” = 1 to “strongly agree” = 5. Huntoon et al., (2011) indicate the items were derived to evaluate medical student knowledge, understanding, and attitudes toward health reform but do not report evaluation of item reliability or validity. We achieved a Cronbach’s alpha of 0.71 for the five PPACA items.

The investigators developed additional interprofessional-focused 5-point Likert questions (responses ranging from “strongly disagree” = 1 to “strongly agree” = 5). One question assessed attitudes toward designating the physician as the leader of the interdisciplinary healthcare team. A second question assessed agreement with the belief that care provided by an interprofessional healthcare team was better than care provided by a physician. Two other “yes/no” questions were designed to identify the intended career focus of the respondent. The first of these identified students who see themselves “primarily specializing in geriatrics.” The second identified students who see themselves “primarily specializing in children and young adults.” As such, these students anticipate careers that will not involve the care of older adults.

Data analysis

We calculated the mean attitudinal score \pm standard deviation of the GAS. The scores for the negatively worded GAS items were reversed. For each respondent, the nine reversed scores were then added to scores for the six positively worded items to produce an average Likert score (Eskildsen & Flacker, 2009). We also calculated the mean total RAQ score. Statistical analyses were conducted using IBM SPSS Statistics. For each analysis we included all participants with complete responses.

We used nonparametric tests, multivariate analysis of variance (MANOVA), and multivariate analysis of covariance (MANCOVA) to identify potential differences between nursing students, medical students and social work students with a significance level of 0.05 to evaluate results. To assess research

question 1, we used multivariate analysis of covariance with profession as the between-subjects factor, student age as the covariate, and RAQ and GAS score as the combined dependent measure. Assumptions for each multivariate analysis were tested. Attitudes about interprofessional team functioning, the focus of research question 2, were evaluated with a one-way MANOVA using the interprofessional attitudes questions about physician leadership and the value of interprofessional care as the combined dependent variable. Inverse transformations were conducted for the age and preference for interprofessional care variables as both distributions were skewed.

Results

The voluntary survey was completed by 31 of 40 third-year medical students, 70 of 97 nurse practitioner students, and 131 of 160 master of social work students. Demographic information for each group in Table I shows that the student groups differed overall on average age ($p < 0.001$), with nurse practitioner students older than medical ($p = 0.001$) and social work students ($p = 0.001$). Gender ($p = 0.001$) and race/ethnicity ($p < 0.001$) also differed across the groups. The percentage of medical, nurse practitioner, and social work students who anticipate pursuing a career that will not involve the care of older adults is 32%, 30% and 51%, respectively.

Table I. Demographics of health professional graduate students.

	MD	NP	MSW
Number	31	70	131
Mean Age* (years, \pm SD)	26.1 \pm 2.5	35.4 \pm 10.8	30.0 \pm 8.9
Gender**			
Men	12 (39%)	6 (9%)	25 (19%)
Women	19 (61%)	64 (91%)	106 (81%)
Race/Ethnicity***			
White	19 (61%)	61 (87%)	66 (49%)
Non-white	11 (36%)	9 (13%)	65 (49%)
Primary focus on pediatrics and young adults	10 (32%)	21 (30%)	67 (51%)
Primary focus on geriatrics	0 (0%)	19 (27%)	20 (15%)

MD, medical students; NP, nurse practitioner students; MSW, master of social work students. Race/ethnicity categories have been collapsed into "White" or "Non-white" and eliminate four respondents who chose not to indicate their race/ethnicity.

*Kruskal-Wallis $\chi^2 = 24.354$, $p < 0.001$, $df = 2$.

** $\chi^2 = 12.985$, $p = 0.002$, $df = 2$.

*** $\chi^2 = 26.510$, $p < 0.001$, $df = 2$.

Overall scores for the attitudes of three groups of healthcare professional students are listed in Table II. The full one-way MANCOVA indicated that both the main effect of profession (Wilks' $\lambda = 0.869$, $F(4,422) = 7.652$, $p < 0.001$, multivariate $\eta^2 = 0.068$) and the covariate age (Wilks' $\lambda = 0.928$, $F(2,211) = 8.222$, $p < 0.001$, multivariate $\eta^2 = 0.072$) significantly impacted attitudes toward personal aging and caring for older adults. The post hoc follow-up univariate ANOVA results showed age ($F(1,212) = 12.301$, $p = 0.001$, partial $\eta^2 = 0.055$) and profession ($F(1,212) = 5.241$, $p = 0.006$, partial $\eta^2 = 0.047$) influenced RAQ. GAS was also influenced by both age ($F(1,212) = 8.522$, $p = 0.004$, partial $\eta^2 = 0.039$) and profession ($F(1,212) = 13.631$, $p < 0.001$, partial $\eta^2 = 0.114$). The influence of profession on GAS showed the strongest effect size.

Results indicated a significant influence of profession on overall attitudes about interprofessional team functioning (Wilks' $\lambda = 0.882$, $F(4,456) = 7.398$, $p < 0.001$, multivariate $\eta^2 = 0.061$). In the univariate ANOVA professional differences were significant for both attitudes about MD leadership ($F(2,229) = 12.462$, $p < 0.001$, partial $\eta^2 = 0.098$) and the value of interprofessional teams ($F(2,232) = 4.787$, $p = 0.009$, partial $\eta^2 = 0.040$). Post hoc analysis employed the Tamhane statistic to account for the significant Levene's test for interprofessional care attitudes ($p < 0.001$) and revealed significant differences regarding whether the physician should be the "leader" of the team. Compared to medical students, nurse practitioner ($p < 0.001$) and social work students ($p < 0.001$) were less likely to agree that the physician should be the leader of the interprofessional team. Compared to the medical students, the nursing students had a higher perceived value of interprofessional care ($p = 0.022$).

There is a strong agreement that healthcare reform is needed, but there was no consensus as to whether the Patient Protection and Affordable Care Act (PPACA) will improve access to care. Understanding of its major provisions rated lowest of all the PPACA items across all professions. A one-way MANOVA evaluated student attitudes about access, quality, and cost impacts of PPACA. Results indicated an overall significant difference for student profession (Wilks' $\lambda = 0.877$, $F(6,442) = 5.015$, $p < 0.001$, multivariate $\eta^2 = 0.064$). In the univariate ANOVA, profession of the student was significant for attitudes about PPACA quality ($F(2,223) = 7.498$, $p = 0.001$, partial $\eta^2 = 0.063$) and cost ($F(2,223) = 10.866$, $p < 0.001$, partial $\eta^2 = 0.089$) impacts. Homogeneity of variance was violated for the measure of cost ($p = 0.039$) so the Tamhane procedure was used to conduct *post hoc* contrasts. Nurse practitioner students ($p = 0.014$) and social work ($p = 0.005$) students were more optimistic than medical students concerning the future impacts of PPACA on healthcare quality. A similar pattern was found for attitudes about cost. Medical students were less likely than nursing students

Table II. Attitudinal scores of health professional graduate students.

	MD ($n = 31$)	NP ($n = 70$)	MSW ($n = 131$)
Mean total RAQ score	90.8 \pm 12.8	108.5 \pm 19.2	102.3 \pm 18.4
Mean GAS score	3.4 \pm 0.4	3.9 \pm 0.4	3.9 \pm 0.4
Health reform questions			
I understand the major provisions of recently enacted PPACA	2.4 \pm 1.1	2.8 \pm 1.3	2.6 \pm 1.2
The current American healthcare system needs to be reformed	4.3 \pm 0.6	4.1 \pm 0.8	4.1 \pm 1.0
PPACA will improve healthcare quality	2.5 \pm 1.04	3.2 \pm 0.9	3.2 \pm 0.9
PPACA will expand access to healthcare	3.1 \pm 1.2	3.5 \pm 0.9	3.4 \pm 1.0
PPACA will contain healthcare costs	2.3 \pm 1.1	3.2 \pm 0.9	3.2 \pm 0.9
Interdisciplinary team questions			
An interdisciplinary team of healthcare professionals will provide better care than a physician alone.	4.4 \pm 0.8	4.8 \pm 0.6	4.6 \pm 0.7
The physician should always be the leader of the interdisciplinary health care team.	3.7 \pm 1.1	2.6 \pm 1.2	2.7 \pm 1.1

MD, third year medical students; NP, nurse practitioner students; MSW, masters of social work students; RAQ, Reaction to Aging questionnaire; GAS, Geriatric Attitudinal scale; PPACA, Patient Protection and Affordable Care Act.

($p=0.004$) and social work students ($p=0.001$) to endorse the notion that the PPACA will contain healthcare costs.

Discussion

A recent Institute of Medicine-sponsored report identified the personal values and principles of high-functioning teams in healthcare (Mitchell et al., 2012). However, this same report noted that the implementation of team-based healthcare has not consistently led to an improvement in the quality and cost of healthcare (Mitchell et al., 2012). What remains unclear is whether differences in attitudes among healthcare professionals could negatively impact the effectiveness of team-based care of vulnerable older adults. This study provides important insights into gerontologic-focused attitudes among students enrolled in three graduate health professions programs. In a relatively young, predominantly female population, the group means for RAQ and GAS are lower for medical students relative to nursing and social work students. However, all scores remain within the neutral range of attitudes on both measures (Gething, 1994).

There was strong agreement across all student professional groups that interprofessional teams provide better service than physicians alone. Many healthcare professionals may view interprofessional collaboration as a threat to their professional identity (Khalili, Orchard, Laschinger, & Farah, 2013). For those educators involved in the development of student interprofessional models, our findings are encouraging.

With a change in healthcare delivery from a “traditional” hierarchal structure to a collaborative approach by interprofessional teams, the issue of physician leadership remains unresolved (Lingard et al., 2012). The strong interprofessional identity of physicians involves an emphasis on decisive decision-making and personal responsibility. Given the differences in opinion as to whether the physician should be the leader of the healthcare team, it is imperative to establish clear roles for each member’s responsibility and accountability (Mitchell et al., 2012). Interprofessional education also needs to emphasize the value systems of the professions of all team members.

Attitudes toward the care of older adults have been assessed among first-year medical students (Reuben et al., 1998) and beginning nursing and pharmacy students (Burg et al., 2001). In this study, one-third of respondents were at least somewhat interested in the field of geriatrics (Burg et al., 2001). In the current study, the mean GAS scores for three groups were similar to the mean score of 3.9 among fourth year medical students (Hughes et al., 2007) and 3.6 among third-year medical students (Hughes et al., 2007; Kishimoto et al., 2005).

To our knowledge, this is the first study to compare attitudes regarding the care of older adults among clinically experienced graduate healthcare professions students. This is also the first study to link survey data regarding attitudes toward the care of older adults, personal aging, healthcare reform and interdisciplinary team leadership. The multiple domains of our survey allowed for a comprehensive assessment of student attitudes that could potentially impact the care of older adults. We found that student profession and age had an impact on attitudes regarding caring for older adults and personal aging.

The findings of this survey are limited by the small size of the medical student sample and variability in race/ethnicity and gender across the professional groups. Because this survey involved students at a single university, the results could be influenced by the actions of one or several instructors. Although the GAS and RAQ have been used and validated in previous studies, by joining the scales along with other questions, we could have changed the psychometric properties of these assessment instruments. Whether this action affects the reliability of the GAS

and RAQ remains unknown. In addition, the five items assessing attitudes regarding the PPACA have not been evaluated for their reliability and validity. Similarly, the two questions on teams leadership developed by our interdisciplinary team were not validated either. The team leadership questions also do not address potential causes for differences in attitudes (e.g. salary disparity, medical legal risk).

Concluding comments

With the “graying of America,” healthcare professionals need to be skilled in the care of elderly patients (Institutes of Medicine, 2008). Given the emerging focus on the development of interprofessional models of care, effective collaboration among healthcare professionals is essential. An understanding of similarities and differences in attitudes will help in the development, implementation, and assessment of a competency-based interprofessional curriculum that teaches the fundamentals of systems-based practice and effective teamwork.

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Declaration of interest

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