

RESEARCH

Pharmacy Students' Attitudes Toward Geriatric Nursing Home Patients

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Objective. To determine the attitudes of second-year pharmacy students toward older people in general and geriatric patients in particular after attending an Early Pharmacy Practice Experiences 2 course.

Methods. One hundred forty-four second-year pharmacy students completed the Geriatrics Knowledge Test and Attitudes Survey between 2008 and 2010.

Results. On 11 of 14 items, most students had a favorable opinion of older people and providing geriatric care (mean > 3.0 on a 5-point scale). For example, students believed that treatment of chronically ill elderly patients is not hopeless (4.2 ± 1.0) and that most older people are pleasant to be with (3.8 ± 1.0). Gender, age, race/ethnicity, marital status, having children, and rural or non-rural upbringing were not related to the students' attitudes for most items.

Conclusion. Although the majority of second-year pharmacy students had favorable attitudes toward older people and geriatric care, the lack of research in this area suggests that further studies are needed.

Keywords: pharmacy students, geriatrics, attitudes, elderly patients, experiential education, survey

INTRODUCTION

The percentage of the US population that is elderly is increasing, and by the year 2030, approximately 1 in 5 Americans will be over 65 years of age. A higher proportion of elderly people than younger people seek medical attention, suggesting that the "greying of America" will have a particularly significant impact on the health-care system. Patient care provided to the elderly is affected by providers' attitudes toward them, with healthcare professionals who hold favorable attitudes toward the elderly and aging providing better care.^{1,2} Medical students who had favorable attitudes toward the elderly were found to have a higher likelihood of considering a career in geriatric medicine than those who did not.^{3,4}

Many health professionals have negative attitudes towards older people and aging.⁵⁻⁷ While some studies found that medical students have negative attitudes towards the elderly^{2,8} and little interest in pursuing geriatric medicine, other studies found that they had neutral or favorable attitudes toward older people and aging.⁹⁻¹¹ Many factors were associated with medical students' attitudes toward elderly people, such as previous contact with elderly adults, type of contact, exposure to elderly faculty members in medical school who were positive role models,

peer support, and the students' gender and age.¹²⁻¹⁸ In addition, educational interventions such as clinical practice experiences in geriatrics also improve medical students' attitudes towards the elderly.^{13,17,19-22}

Little has been published about the attitudes of pharmacy students towards geriatric patients. In one previous study pharmacy students were found to have favorable attitudes toward the elderly.²³ A few previous studies found that geriatrics introductory and advanced pharmacy practice experiences and other education interventions improved pharmacy students' attitudes toward elderly patients.²⁴⁻²⁶ Consequently, the impact of educational interventions on the attitudes of pharmacy students about older persons is not completely understood.

The study was conducted to examine the attitudes of doctor of pharmacy (PharmD) students at Appalachian College of Pharmacy (ACP) towards elderly patients after completing the Early Pharmacy Practice Experience 2 course. All second-year students are required to take the Early Pharmacy Practice Experience 2 course which exposes students to long-term pharmacy practice care and is intended to positively impact the students' knowledge and attitudes toward geriatric patients. The course, which is spread over the fall and spring semesters, has a classroom component (lectures on basic pharmacy practice concepts in the long-term care setting, and independent and directed readings) and involves participation in pharmaceutical care team meetings. Students are also expected to complete assignments related to long-term care and meet with their team biweekly for group discussions.²⁷ Additionally, each

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student is randomly assigned to an elderly patient from 1 of 2 nursing homes located near the college. Students are expected to visit their assigned patient for a minimum of 1 hour per week for 24 weeks. During these visits, students undertake a series of assessments and are also expected to identify and address medication-related patient care needs when they arise in consultation with their faculty mentor and facility staff members.

METHODS

Ethical and review board approval of the study was obtained. The study population consisted of all second-year students in the 2009, 2010, and 2011 classes. A 2-part self-administered survey instrument was used to collect data. The first section consisted of 10 items that focused on demographic data and career expectations: demographic data (age, gender, race/ethnicity, country of birth, country of undergraduate education), personal characteristics (any grandparents alive, any children, marital status, and rural upbringing) and participants' anticipated work setting after graduation (residency/clinical pharmacy/research/teaching/retail). The second section of the questionnaire consisted of questions adapted from the 14-item Geriatrics Attitudes Survey developed at the University of California, Los Angeles.² This survey is a validated instrument with high reliability, validity, and sensitivity,²⁸ designed to measure primary care residents' attitudes toward older people and geriatric patient care² and has been used in previous studies.^{18,29} The 14 items were on respondents' beliefs concerning geriatrics, with responses rated on a scale of 1 to 5, with 1 = agree and 5 = disagree for the first 9 questions and 5 = agree and 1 = disagree for the remaining 5 questions.

The survey was administered on the last day of class in the spring semester to all students enrolled in the Early Pharmacy Practice Experiences 2 course. Students were assured that completion of the questionnaire was not related to their grade in the course. They were also told that no identifying information would be collected on the questionnaire and their responses would only be reported in aggregated form; thus, participation was anonymous.

A faculty member handed each student an envelope with a 2-page questionnaire and gave the class time to complete the survey instrument. Students were asked to place the completed questionnaire in the envelope and hand it to the faculty member when they were finished.

Data from the completed survey instruments were first entered in Microsoft Excel 2007 and then analyzed using PASW Statistics 18 (Statistical Package for the Social Sciences [SPSS], SPSS Inc, Chicago, Ill). Means, standard deviations, and frequency distributions were computed for all variables. The independent *t* test was used to compare

mean attitudes scores on all 14 items across the following variables: gender (male/female students); marital status (married/not married); having children (yes/no); rural upbringing (yes/no); and grandparents alive (yes/no). Analysis of variance was used to compare mean attitude differences on all 14 items between students of different races and ethnicities. For all analyses, the a priori alpha level was set at 0.05.

RESULTS

One hundred forty-four of 187 eligible students completed the questionnaire (77.0%). The response rate differed by year and ranged from 60.9% (class of 2011) to 96.6% (class of 2009). The mean age of respondents was 26.5 ± 4.9 years. Most of the students were female (54.8%), Caucasian (76.9%), not married (69.9%), and had a rural upbringing (72.4%) (Table 1).

Most students showed positive attitudes toward older people and geriatric patient care. On 11 of the 14 items on the second part of the survey, students had a favorable opinion about geriatrics (mean > 3.0). For example, students believed that treatment of chronically ill old patients is not hopeless (4.2 ± 1.0) (Table 2). There was no significant difference in mean attitude scores by gender over 11 of the 14 items ($p > 0.05$). However, there was a significant difference in attitude scores by gender over 3 items ($p < 0.05$) (Table 3). For example, female students were more likely to agree that "If I have the choice, I would

Table 1. Demographic Characteristics of Second-Year Pharmacy Students Who Participated in a Survey Regarding Attitudes Toward Geriatric Patients

Characteristic	Respondents, No. (%)
Sex (n = 135)	
Male	61 (45.2)
Female	74 (54.8)
Race/ethnicity (n = 130)	
Caucasian	100 (76.9)
Black	10 (7.7)
Asian	20 (15.4)
Grandparents alive (n = 136)	
Yes	107 (78.7)
No	29 (21.3)
Married (n = 136)	
Yes	41 (30.1)
No	95 (69.9)
Have children (n = 136)	
Yes	16 (11.8)
No	120 (88.2)
Rural upbringing (n = 133)	
Yes	97 (72.4)
No	36 (26.9)

Table 2. Second-Year Pharmacy Students Attitudes Regarding Geriatric Patients

Item ^a	Mean (SD)	Agree (1), No. (%)	Somewhat Agree (2), No. (%)	Neutral (3), No. (%)	Somewhat Disagree (4), No. (%)	Disagree (5), No. (%)
The federal government should reallocate financial resources from Medicare to pediatric and AIDS research (+)	3.3 (1.2)	13 (9.0)	21 (14.6)	48 (33.3)	39 (27.1)	23 (16.0)
If I have the choice, I would rather see younger patients than elderly ones (-).	2.8 (1.0)	18 (12.5)	26 (18.1)	70 (48.6)	21 (14.6)	9 (6.3)
Medical care for the elderly uses up too much human and material resources (+).	3.9 (1.0)	3 (2.1)	11 (7.6)	36 (25.0)	49 (34.0)	45 (31.3)
As people grow older, they become less organized and more confused (-).	2.7 (1.1)	18 (12.5)	45 (31.3)	45 (31.3)	29 (20.1)	7 (4.9)
Taking medical history from elderly patients is frequently an ordeal (n).	3.0 (1.0)	7 (4.9)	43 (30.1)	49 (34.3)	35 (24.5)	9 (6.3)
Old people in general do not contribute much to society (+).	4.1 (1.0)	3 (2.1)	7 (4.9)	24 (16.7)	53 (36.8)	57 (39.6)
Treatment of chronically ill old patients is hopeless (+)	4.2 (1.0)	3 (2.1)	6 (4.2)	25 (17.4)	41 (28.5)	69 (47.9)
Old persons don't contribute their fair share in paying for their healthcare (+).	4.1 (1.0)	-	8 (5.6)	33 (22.9)	47 (32.6)	56 (38.9)
In general, older people act too slow for modern society (+).	3.9 (1.1)	3 (2.1)	14 (9.8)	31 (21.7)	45 (31.5)	50 (35.0)
	Mean (SD)	Disagree (1), No. (%)	Somewhat Disagree (2), No. (%)	Neutral (3), No. (%)	Somewhat Agree (4), No. (%)	Agree (5), No. (%)
Most older people are pleasant to be with (+)	3.8 (1.0)	3 (2.1)	10 (6.9)	30 (20.8)	66 (45.8)	35 (24.3)
It is society's responsibility to care for its elderly patients (+).	3.9 (1.1)	6 (4.2)	10 (6.9)	29 (20.1)	48 (33.3)	51 (35.4)
I tend to pay more attention and have more sympathy for elderly than younger patients (+).	3.2 (1.2)	10 (6.9)	22 (15.3)	61 (42.4)	33 (22.9)	18 (12.5)
Elderly patients appreciate medical care more than younger patients (+)	3.5 (1.0)	5 (3.5)	13 (9.0)	57 (39.6)	38 (26.4)	30 (20.8)
It is interesting listening to old people's accounts of their past experiences (+)	4.4 (0.9)	-	5 (3.5)	25 (17.6)	28 (19.4)	84 (59.2)

^a A plus sign (+) after an item indicates that students had a positive attitude about that item, while a minus sign (-) indicates students had a negative attitude about that item. An n indicates students were neutral about the item, having neither a positive nor negative attitude).

rather see younger patients than elderly ones" (3.0 ± 1.0) than male students (mean = 2.6 ± 1.1).

There was no significant correlation between age and students' mean attitude scores on most items except on the

following 2 items: "If I have the choice, I would rather see younger patients than elderly ones" ($p = 0.017$) and "It is interesting listening to old people's accounts of their past experiences" ($p = 0.02$). There was no significant

Table 3. Relationship Between Second-Year Pharmacy Students' Attitudes Toward Geriatric Patients and Gender

Item	Male, n = 61, Mean (SD)	Female, n = 74, Mean (SD)	P
Most older people are pleasant to be with	3.8 (0.9)	3.9 (0.9)	0.60
The federal government should reallocate financial resources from Medicare to pediatric and AIDS research.	2.9 (1.2)	3.6 (1.0)	0.002
If I have the choice, I would rather see younger patients than elderly ones	2.6 (1.1)	3.0 (1.0)	0.024
It is society's responsibility to care for its elderly patients.	4.0 (1.2)	3.9 (1.0)	0.55
Medical care for the elderly uses up too much human and material resources.	3.8 (1.1)	4.0 (1.0)	0.25
As people grow older, they become less organized and more confused.	2.7 (1.1)	2.8 (1.1)	0.51
Elderly patients appreciate medical care more than younger patients.	3.6 (1.0)	3.5 (1.0)	0.60
Taking medical history from elderly patients is frequently an ordeal.	3.0 (0.9)	2.9 (1.1)	0.63
I tend to pay more attention and have more sympathy for elderly than younger patients.	3.2 (0.9)	3.2 (1.2)	0.89
Old people in general do not contribute much to society.	3.9 (1.0)	4.2 (0.9)	0.06
Treatment of chronically ill old patients is hopeless	4.1 (1.0)	4.3 (0.9)	0.39
Old persons don't contribute their fair share in paying for their healthcare.	3.9 (1.0)	4.2 (0.8)	0.045
In general, older people act too slow for modern society.	3.8 (1.1)	4.0 (1.1)	0.19
It is interesting listening to old people's accounts of their past experiences	4.4 (0.9)	4.4 (0.8)	0.55

Possible mean range: 1-5.

difference in mean attitude scores by race or ethnicity on all items except on one: "It is interesting listening to old people's accounts of their past experiences" ($p = 0.029$). Caucasian students (4.5 ± 0.1) more strongly agreed with this item than Asian students (4.0 ± 1.0). No other mean differences between groups were significant.

There was a significant difference in mean attitude scores of students by marital status on 3 of the 14 items. Non-married students (3.3 ± 1.0) more strongly agreed than married students (2.9 ± 1.2) with the item: "I tend to pay more attention and have more sympathy for elderly than younger patients" (Table 4)

There was no significant difference in mean attitude scores between students who had children (4.5 ± 0.7) and those who did not (3.8 ± 1.1) on the item: "In general, older people act too slow for modern society" ($p = 0.014$). Those students who had children (4.5 ± 0.7) more strongly agreed than those students who did not have children (3.8 ± 1.1). Additionally, there was no significant difference in the students' mean attitudes scores across all 14 items by whether their grandparents were alive ($p > 0.05$) or whether they had a rural upbringing.

DISCUSSION

Second-year pharmacy students had predominantly positive attitudes towards the elderly and geriatric patients. This finding is consistent with the other studies found in the literature that investigated the attitudes of pharmacy students toward the elderly.²³⁻²⁶ These findings are encouraging given that students' attitudes toward elderly people and aging may determine the appropriateness of the care they

provide when they become pharmacists. The study's findings, however, conflict with those of studies conducted among medical and dentistry students which reported that these students held negative attitudes towards the elderly.^{2,8} It is unclear why pharmacy students have favorable attitudes towards the elderly. In our study, the early pharmacy practice experience course in geriatrics may have contributed to the positive attitudes of students towards the elderly given that previous studies found that exposing students to a course in geriatrics improved their attitudes towards the elderly.^{13,17,19-22} As Hughes and colleagues found, students' comfort levels with the elderly probably increased as a result of interacting with geriatric patients during the course.³

Study findings show that for most items, gender, age, race/ethnicity, marital status, having children, and type of upbringing (rural or not) were not related to the students' attitudes. Similarly, a previous study among pharmacy students found that all demographic factors except gender were not related to the students' attitudes.²³ In addition, several studies among medical and dental students did not find a relationship between demographic factors and attitudes.^{3,15,17}

The study had some limitations. First, this study included students from only 1 institution so the results may not be generalizable to other pharmacy students at other institutions. Second, the study did not have a control group or pretest data of the students, making it difficult to accurately estimate the extent to which students' attitude could be attributed to the course. Future studies should be conducted to address the question of how long pharmacy students'

Table 4. Relationship Between Second-Year Pharmacy Students' Attitudes Toward Geriatric Patients and Marital Status

Item	Not Married, n = 95, Mean (SD)	Married, n = 41, Mean (SD)	P
Most older people are pleasant to be with	3.8 (1.0)	4.0 (1.0)	0.32
The federal government should reallocate financial resources from Medicare to pediatric and AIDS research.	3.2 (1.2)	3.4 (1.1)	0.46
If I have the choice, I would rather see younger patients than elderly ones	2.8 (1.0)	3.0 (1.0)	0.40
It is society's responsibility to care for its elderly patients.	3.9 (1.1)	4.0 (1.1)	0.67
Medical care for the elderly uses up too much human and material resources.	3.9 (1.0)	3.9 (1.0)	0.74
As people grow older, they become less organized and more confused.	2.8 (1.2)	2.7 (0.9)	0.71
Elderly patients appreciate medical care more than younger patients.	3.5 (1.1)	3.5 (0.9)	0.82
Taking medical history from elderly patients is frequently an ordeal.	3.0 (1.0)	2.9 (1.0)	0.79
I tend to pay more attention and have more sympathy for elderly than younger patients.	3.3 (1.0)	2.9 (1.2)	0.021
Old people in general do not contribute much to society.	4.1 (1.0)	4.2 (0.8)	0.55
Treatment of chronically ill old patients is hopeless	4.1 (1.0)	4.4 (0.8)	0.16
Old persons don't contribute their fair share in paying for their healthcare.	4.0 (1.0)	4.3 (0.9)	0.029
In general, older people act too slow for modern society.	3.8 (1.1)	4.2 (0.8)	0.012
It is interesting listening to old people's accounts of their past experiences	4.3 (1.0)	4.5 (0.7)	0.15

Possible mean range: 1-5.

attitudes persist over time and whether they persist beyond graduation and into practice.

CONCLUSION

Second-year pharmacy students had positive attitudes towards elderly patients after completing an early pharmacy practice experience course. Most demographic and personal factors were not correlated with students' attitudes. Future studies are needed to explore this subject further.

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