

# Influence of Medical Education on Students' Attitudes towards the Elderly

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As life expectancy increases, the elderly population grows accordingly. Today, physicians interface with elderly patients more frequently and, therefore, geriatric education should be a part of medical training. Examining medical students' knowledge and attitudes about elderly will provide valuable information in planning the geriatric education in medical school. The aim of this study is to determine and compare the attitudes and knowledge of class-1, -4 and -6 Turkish medical students about the elderly. A questionnaire that included statements about physical and social situations of the elderly, developed by Reuben et al., was used. Five-hundred-thirty-five students educating in Hacettepe University Medical Faculty took part in the study. Age, gender and the number of people aged >65 living with the students were also asked. Gender and number of old people living with the students had no significant effect on the answers. Social statements were answered positively, and there were no significant changes among the classes. Statements about physical situations and illnesses were significantly associated with the students' years of education. Geriatric education in developing countries needs more attention because the students' attitudes towards elderly and caregiver preference are mostly affected by the students' own experiences and knowledge.

**Key words:** elderly health ■ education ■ developing countries

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## INTRODUCTION

With the increase in the life expectancy, the elderly component of the population is growing gradually. In Turkey, the proportion of people ≥65 years old was estimated to be 5.9% in 2005, and it

is expected to reach 10.9% by the year 2030.<sup>1</sup> Therefore, the provision of the care for the elderly should be an important aspect of medical training. Examining medical students' knowledge about old people, attitudes towards them and affecting factors will provide valuable information in planning the geriatric education in medical schools.

In Turkey, medical education lasts six years; basic medical science (biochemistry, biophysics, anatomy, pharmacology, etc.) takes part in the first three years; in the fourth and fifth years, there are rotations at different outpatient and inpatient clinics, and the sixth year is an internship program—a preparation to “real life.” As in some other developing countries, there are only a few people who can give geriatric education. Although there are some studies about medical students' attitudes towards and knowledge about the elderly in the literature,<sup>2,3</sup> they cannot predict Turkish students' attitudes.

In a classical Turkish family, elderly people usually stay with the family, mostly with their children, until death, and their care is usually given by the family no matter they are how much seriously ill or disabled. Because of the feeling of guilt, most people are reluctant to resign their old parents to a nursing home or such place even though they knew they would be given better care there. Because of this social structure when compared with their peers in developed countries, Turkish youth spend much more time with their old relatives. Therefore, one can assume that they are much more familiar with the illnesses and social problems of the elderly people.

The purpose of this study is to determine and compare the class-1, -4 and -6 Turkish medical students' attitudes towards aged people and knowledge about elderly patients. Beside these, with this study, we hope to get an idea about the factors that affect students' opinions about geriatric population and their illnesses. This is the first study carried out in Turkey about medical students' attitudes towards elderly, and it will give an opinion about a developing, European-Asian country.

**METHODS**

At the time of the study, there were 240 students in class 1, 276 students in class 4, and 287 students in class 6. The questionnaire was distributed to all of the students. Reply rates were 71.7% for class 1, 88.3% for class 4 and 52.6% for class 6.

The statements were taken from the geriatrics attitudes scale developed by Reuben et al.<sup>4</sup> They were asked to indicate their degree of agreement or disagreement with each of 14 statements about social and physical situations of the elderly. This is a recently developed scale, and its reliability, validity and sensitivity were studied before but cultural differences among the developing countries were not described. This scale is designed to measure and compare primary care residents' attitudes towards older people and caring for older patients. The questionnaire (the exact translation of the Turkish version with the same items) we used in this study is shown in Table 1. The students were also asked about their ages, genders and the number of people aged >65 living with them. The study was carried out in the winter. The statistical package of SPSS® for Windows® version 10.0 (SPSS Inc., Chicago, IL, 1999) was used to analyze results at the Biostatistics Department of Hacettepe University, Faculty of Medicine. Pearson Chi-squared test was used to determine whether answers differed significantly among the three classes. Again, all questions were tested according to students' genders, number of old people living with them and classes of the students.

**RESULTS**

Five hundred-thirty-five students—252 males and

283 females—educating the Hacettepe University medical faculty were included in this study. One-hundred-seventy-two of them were class 1, 212 of them were class 4 and 151 were class 6.

When the number of old people living with the students and genders were considered, classes were comparable with each other (Tables 2 and 3). There was no significant sex difference in the attitudes towards the elderly. The number of old people living with the students had no significant effect on the answers.

Questions can be divided into three groups; a) general social statements (questions 1, 4, 10, 13, 14), b) statements about financial support of the elderly (questions 2, 5, 12), and c) statements about the physical situations and healthcare of the elderly (questions 3, 6, 7, 8, 9, 11).

**General Social Statements**

All three classes thought that being with most of the old people was enjoyable (question 1) and were against the opinion that old people do not add much to society (question 10) (p>0.05). First- and last-year students agreed that looking after old people is a social duty (question 4) and listening to past experiences of old people is interesting (question 14). The positive answers to these questions were significantly less in the fourth year (p<0.001). The class-4 students agreed significantly more to “usually old patients are too slow according to modern society” (question 13) than class-1 and -6 students.

**Financial Support of the Elderly**

All three classes were against the idea that we are

**Table 1. Questionnaire**

Circle the most suitable answer for you. There are no wrong or right answers. The best answer is the answer that represents your own opinion. By saying “old,” people aged >65 is meant.

**1: Strongly disagree, 2: Disagree, 3: No idea, 4: Agree, 5: Strongly agree**

|  |   |   |   |   |   |
|--|---|---|---|---|---|
| 1. Being together with most of the old people is enjoyable.  | 1 | 2 | 3 | 4 | 5 |
| 2. Some of the health expenses of the old people must be directed to pediatric patients and AIDS research by the government. | 1 | 2 | 3 | 4 | 5 |
| 3. If I had a choice, I would prefer to deal with young patients than old ones.  | 1 | 2 | 3 | 4 | 5 |
| 4. Looking after old people is a social duty.  | 1 | 2 | 3 | 4 | 5 |
| 5. We spend too much human force and money for the health expenses of old people.  | 1 | 2 | 3 | 4 | 5 |
| 6. When people get older they get more disorganized and less conscious.  | 1 | 2 | 3 | 4 | 5 |
| 7. Old people appreciate the health service more than young ones.  | 1 | 2 | 3 | 4 | 5 |
| 8. Taking medical history from an old patient is hard.   | 1 | 2 | 3 | 4 | 5 |
| 9. I pay more attention, and I behave more understandingly to my old patients than my young ones.                            | 1 | 2 | 3 | 4 | 5 |
| 10. Old people do not add much to society.   | 1 | 2 | 3 | 4 | 5 |
| 11. Treatment of chronic diseases in the elderly is hopeless.  | 1 | 2 | 3 | 4 | 5 |
| 12. Old people cannot pay enough for their proportion of health costs.   | 1 | 2 | 3 | 4 | 5 |
| 13. Usually old patients are too slow according to modern society.   | 1 | 2 | 3 | 4 | 5 |
| 14. Listening to past experiences of old people is interesting.  | 1 | 2 | 3 | 4 | 5 |

Age: \_\_\_\_\_  
 Gender: Female  Male   
 Class: Number of old person living with you: \_\_\_\_\_

spending too much human force and money for the health expenses of old people (question 5). With an increasing percentage from the first year to the last year, students said no to "some of the health expenses of the old people must be directed to pediatric patients and AIDS research by the government" (question 2) statement. Most of the students did not think that old people cannot pay enough for their proportion of health costs (question 12), but the positive answers to this statement reached 48% (102) at the fourth year ( $p < 0.001$ ).

### Physical Situations and Healthcare of the Elderly

Class 1 strongly thought that when people get older they get more disorganized and are less conscious (question 6). Class 6 mostly answered yes to this statement but to a lesser degree. Class 4 had no clear majority of responses to this question. The difference between classes was significant ( $p < 0.001$ ). First- and last-year students agreed that old people appreciate the health service more than young people (question 7), but there was a significant decrease in the positive answers at the fourth year ( $p < 0.001$ ). More than half of the fourth class thought that treatment of chronic diseases in the elderly is hopeless (question 11). More than half of the sixth class was in opposition to this statement. Not surprisingly, the first class had mostly no clear majority of responses to this question. Again, class 1 had no clear majority of responses to this question about the difficulties of taking the medical history of an old patient (question 8), but classes 4 and 6 increasingly thought it was hard. The difference between these two classes were significant for this question ( $p < 0.001$ ). Most of the students thought that they were paying more attention and behaving more understandingly to their old patients than young ones (question 9). Class 6 significantly answered more positively than the others ( $p < 0.001$ ). More than half of the class-4 and -6 students mentioned

that if they had a chance to choose they would prefer to deal with younger patients than old ones (question 3). Both classes did not differ greatly. Class 1, again, had no clear majority of responses to this question. Table 4 summarizes the answers.

### DISCUSSION

During the first year of the medical education in Hacettepe University, there is no contact with the patients. The basic scientific lessons are carried out at this year. Therefore, class-1 students practically have no information about diseases. We thought their answers would nearly reflect the attitudes of Turkish population to the elderly. The fourth year is the time to interact with the patients, but exposure is limited to receiving a medical history and performing certain parts of physical examination or doing minor procedures such as taking a venous blood sample. Sixth-year students are with the patients all day. They act as primary doctors of the patients and find the opportunity to follow up the patients for longer time. Because these three classes are the three stages of medical education, we chose them to follow the changes in attitudes towards the elderly in medical school. None of these students had received formal teaching in gerontology, but it can be assumed that the knowledge about geriatric patients will improve by clinical experiences and general information given by the usual medical training.

The first and second groups of questions, which asked about social and financial statements of the elderly, were positively answered by most of the students. There were no significant changes from the first to last years, but in the fourth year there is a significant negative attitude. The general positive attitude is a reflection of the attitude of Turkish society. In the literature, the attitude towards the elderly is controversial.<sup>5-7</sup> It is hard to comment on why the fourth-year students had negative opinions. In a recent study, Griffith and Wilson<sup>8</sup> found that there was a loss of idealism towards the elderly in the third-year clinical clerkships, but we do not have enough data to support that. The questionnaire was answered by them in the busiest time of the year, and most of the students were at their first clinical rounds. We think this may have been a reason.

The third group of questions, which were about the physical and clinical situations, seemed to be affected

**Table 2. Proportion of male and female students according to classes**

|         | Males (%) (n=252) | Females (%) (n=283) |
|---------|-------------------|---------------------|
| Class 1 | 44                | 56                  |
| Class 4 | 47                | 53                  |
| Class 6 | 49                | 51                  |

**Table 3. Classes and number of elderly people living with the students**

| Number of Elderly | Class-1 Students (%) (n=172) | Class-4 Students (%) (n=212) | Class-6 Students (%) (n=151) |
|-------------------|------------------------------|------------------------------|------------------------------|
| None              | 78                           | 76                           | 77                           |
| 1                 | 11                           | 16                           | 14                           |
| 2                 | 7                            | 6                            | 6                            |
| >3                | 4                            | 2                            | 3                            |

by the student's class. Class 1 had no formal experience with clinical history taking or chronic illnesses of the elderly. As the education year grows, the answers become more realistic as they do in the questions about medical history taking, chronic illnesses and consciousness. Year after year, maybe after dealing with the chronic diseases of the elderly and realizing the difficulties of geriatric medicine, the students tend to choose young patients to old ones. This may affect their career preferences and decrease the general interest in geriatrics. The influence of education on career preference has been studied before.<sup>9</sup> The students mostly thought they were paying attention and being kind to their older patients. It is interesting that class 4, which had the most negative answers, had the higher score in this question.

There were some limitations to our study. Although the sample size is adequate, this was a single-center study in a single academic year. Because this study was not prospective, differences between classes could be attributed to the parameters such as cultural background and personality of the students. We plan to give the same questionnaire this year to class 6 (which was class 4 when this study was going on) and next year to class 4 (which was class 1). By doing so, we hope to modify the effects of personality, culture and such parameters on the results and since the formal geriatric education began two years ago in Hacettepe University. Last-year students have had four hours of lessons on geriatric medicine during their fourth grade, so if we had applied the questionnaire to them, we would have determined the effects of formal education on attitudes towards the elderly.

Another limitation was about the scale used in this study. The Turkish version of the 14-item questionnaire requires validation among Turkey practitioners and/or medical students before its application in Turkey. Also,

it is designed for testing primary care residents' attitudes towards the geriatric population, and its external validity in medical students warrants further investigation. But there was not a questionnaire that could be applied among medical students that was validated in Turkey. For this reason, we used that scale in our study.

Medical students' attitudes towards old people seem to be mostly effected by the experiences and knowledge they have in medical school. Therefore, geriatric education should begin at least from class 4. A class-6 student educated about the elderly must be encouraged to give healthcare to the geriatric patient. Early exposure may increase awareness of geriatrics and comfort with older people,<sup>10</sup> but exposure first to healthy old people, rather than very ill ones in nursing homes, is suggested because beginning with very ill patients may lead to stereotyping all old people as unhealthy.<sup>11</sup>

Because of the faster declines in fertility, developing countries are aging at a much more rapid pace than most developed nations. Treating older people needs an interdisciplinary point of view, and there is a need for well-trained people in every discipline, especially in developing countries. Well-trained healthcare staff will also be good role models for medical students because they learn by observing others.<sup>12</sup> The World Health Organization (WHO) strongly suggests that all future medical doctors be well trained in the care of older people, since most future doctors will see increasing numbers of older people in daily practice.

Multiple studies have shown that geriatric education improves medical students' attitudes towards the elderly.<sup>13-16</sup> We believe that providing a good education about geriatric patients to medical students will improve their perspective towards the elderly. This is important, especially in developing countries, in which geriatric medi-

**Table 4. Percentage of answers according to the classes**

|   | No | Class 1 |       |         | Class 4 |       |         | Class 6 |       |         |
|---|----|---------|-------|---------|---------|-------|---------|---------|-------|---------|
|   |    | 1,2 (%) | 3 (%) | 4,5 (%) | 1,2 (%) | 3 (%) | 4,5 (%) | 1,2 (%) | 3 (%) | 4,5 (%) |
| Questions about general social statements | 1  | 19      | 17    | 64      | 28      | 11    | 61      | 20      | 18    | 62      |
|   | 4  | 1       | 2     | 97      | 24      | 13    | 63      | 5       | 3     | 92      |
|   | 10 | 50      | 10    | 40      | 48      | 12    | 40      | 58      | 15    | 27      |
|   | 13 | 34      | 19    | 47      | 19      | 14    | 67      | 43      | 19    | 38      |
|   | 14 | 6       | 3     | 91      | 24      | 15    | 61      | 7       | 8     | 85      |
| Questions about financial support         | 2  | 24      | 40    | 36      | 55      | 30    | 15      | 32      | 44    | 24      |
|   | 5  | 38      | 51    | 11      | 20      | 48    | 32      | 50      | 22    | 28      |
|   | 12 | 42      | 37    | 21      | 32      | 20    | 48      | 40      | 30    | 30      |
| Questions about healthcare                | 3  | 43      | 21    | 36      | 35      | 11    | 54      | 30      | 13    | 57      |
|   | 6  | 7       | 10    | 83      | 35      | 31    | 34      | 23      | 14    | 63      |
|   | 7  | 9       | 20    | 71      | 26      | 22    | 52      | 10      | 10    | 80      |
|   | 8  | 10      | 62    | 28      | 34      | 14    | 52      | 16      | 8     | 76      |
|   | 9  | 27      | 20    | 53      | 22      | 24    | 54      | 21      | 11    | 68      |
|   | 11 | 39      | 42    | 19      | 39      | 10    | 51      | 54      | 11    | 35      |

cine is newly developing.

**REFERENCES**

1. Kocaman T. Plan Nufus Projeksiyon Yontemleri (Turkish). Ankara, Turkey: The Republic of Turkey, Prime Ministry, State Planning Organization Press; 2002:73.
2. Thorson JA, Powell FC. Medical students' attitudes towards ageing and death: a cross sequential study. *Med Educ.* 1991;25:32-37.
3. Shahidi S, Devlen J. Medical students' attitudes to and knowledge of the aged. *Med Educ.* 1993;27:286-288.
4. Reuben DB, Lee M, Davis J, et al. Development and validation of a geriatrics attitudes scale for primary care residents. *J Am Geriatr Soc.* 1998;46:1425-1430.
5. Green SK. Attitudes and perception about the elderly: current and future perspectives. *Int J Aging Hum Dev.* 1981;13:99-119.
6. Palmore EB. Knowledge about aging: what we know and need to know. *Gerontologist.* 1992;32:149-50.
7. Coccraro EF, Miles AM. The attitudinal impact of training in gerontology/geriatrics in medical school: a review of the literature and perspective. *J Am Geriatr Soc.* 1984;32:762-768.
8. Griffith CH III, Wilson JF. The loss of student idealism in the third-year clinical clerkships. *Eval Health Prof.* 2001;24:61-71.
9. Wattis JP, Smith CW, Binns V. Medical students' attitudes to old people and career preference: a comparison of two universities. *Med Educ.* 1986;20:498-501.
10. Alford CL, Miles T, Palmer R, et al. An introduction to geriatrics for first-year medical students. *J Am Geriatr Soc.* 2001;49:782-787.

11. Linn BS, Zeppa R. Predicting third year medical students' attitudes toward the elderly and treating the old. *Gerontol Geriatr Educ.* 1987;7:167-175.
12. Lookinland S, Anson K. Perpetuation of ageist attitudes among present and future health care personnel: implications for elder care. *J Adv Nurs.* 1995;21:47-56.
13. Warren DL, Painter A, Rudisill J. Effects of geriatric education on the attitudes of medical students. *J Am Geriatr Soc.* 1983;31:435-458.
14. Tarbox AR, Connors GJ, Faillace LA. Freshman and senior medical students' attitudes toward the elderly. *J Med Educ.* 1987;62:582-591.
15. Smith CW, Wattis JP. Medical students' attitudes to old people and career preference: the case of Nottingham Medical School. *Med Educ.* 1989;23:81-85.
16. Intrieri RC, Kelly JA, Brown MM, et al. Improving medical students' attitudes toward and skills with the elderly. *Gerontologist.* 1993;33:373-378. ■

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