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**Attitudes of nursing and medical school students towards ageism****Medine Koc<sup>1</sup>, Aygul Kissal<sup>2</sup>, Riza Cilt<sup>3</sup>, Yalcin Onder<sup>3</sup>**<sup>1</sup>Tokat Gaziosmanpasa University Faculty of Health Sciences, Department of Psychiatric Nursing, Tokat Turkey<sup>2</sup>Tokat Gaziosmanpasa University, Faculty of Health Sciences, Department of Public Health Nursing, Tokat Turkey<sup>3</sup>Tokat Gaziosmanpasa University Faculty of Medicine, Department of Public Health, Tokat Turkey

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**Abstract**

The present study aimed to evaluate the attitudes of nursing and medical school students towards age discrimination and to determine the association between these attitudes and various variables. A total of 662 students, 328 from the Faculty of Nurse Education and 334 from the Faculty of Medicine, participated in the present descriptive and cross-sectional study. Data were collected using Data Form for socio-demographic characteristics and Ageism Attitude Scale (AAS). Descriptive statistics, t-test, Mann-Whitney U test, Chi-square test, One-Way ANOVA, and Kruskal Wallis test were used to evaluate the data using IBM SPSS Statistics for Windows (Version 20.0). Nursing school students had higher points in "restricting the life of elderly people", "positive discrimination towards them" and Ageism Attitude Scale, but had lower points in "negative discrimination towards them" compared to medical school students. While the points of "positive discrimination towards elderly" and Ageism Attitude Scale of the students of two schools were not significantly different ( $p>0.05$ ), points of "restricting the life of elderly people" and "negative discrimination towards elderly" varied significantly between the students of two schools ( $p<0.05$ ). In general, it was revealed that both nursing and medical school students had positive attitudes towards the elderly. It is necessary to work for maintaining and improving these positive attitudes during and after their education.

**Keywords:** Student, elderly, ageism, attitude**Introduction**

Similar to the world, the elderly population in Turkey has been increasing fast and it has been estimated to reach 10.2% of the general population in 2023 and to 16.3% in 2040 [1]. Studies showed that elderly individuals are subjected to discrimination because of physical, mental, and psychological changes that occur as a result of the aging process [2-4].

Age discrimination has been defined as a term that can be turned into action towards elderly people just like race and gender discriminations by gerontologist Robert Butler, president of the US National Ageism Institute [2,5-7]. Age discrimination refers to different actions, prejudices, attitudes, and behaviors towards a person just because of his/her age, and consists of both positive and negative attitudes [6-7]. Positive attitudes include elements such as tenderness, wisdom, confidence, political power, freedom and happiness, while the negative ones include elements such as sickness, impotence, ugliness, impairment in mental functions, uselessness, isolation, poverty, depression [3,6], evading of spending time and communicating with elderly people [8].

Positive age discrimination will allow the delivery of unprejudiced health care, early diagnosis, and prevention of ailments, improvement of life quality, and better use of the capacity of elderly people [8]. Health professionals deal with elderly individuals in a major part of their education period and professional life. It has been estimated that by 2020 nurses will spend 75% of their work time with elderly individuals [9]. Studies are showing both positive [4,10] and negative [2,11] attitudes of health care students towards elderly people. Negative prejudices, values, beliefs, and attitudes adopted by health care personnel towards aging reflect the efficiency and quality of health care provided [6-7]. However, dealing with elderly people seems to be prejudiced for health care professionals [6]. Nurses and physicians need to take training and gain experience to meet the needs of the aging population [12]. World Health Organization recommends that all health care workers should be trained about ageism related issues irrespective of their area of expertise [12]. Therefore, it is crucial to draw the attention of health care personnel to ageism and aging, to increase awareness and to work to improve the positive attitude in this respect [6-7]. If planning is made to improve training programs for elderly people, attitudes towards them may improve [11]. Since the studies dealing with age discrimination among nursing and medical school students are rare in literature, current attitudes of students towards the elderly are needed to be determined, and findings of this study could guide the training programs. The present study aimed to evaluate the attitudes of nursing and medical

**\*Corresponding Author:** Riza Cilt, Tokat Gaziosmanpasa University Faculty of Medicine, Public Health Department, Tokat Turkey, E-mail: [riza.cilt@gop.edu.tr](mailto:riza.cilt@gop.edu.tr)

school students towards age discrimination and to determine the association between these attitudes and various variables.

## Material and Methods

This descriptive and cross-sectional study was carried out on nursing and medical school students of a University in Turkey. All students (N=941) in Nurse Education Department (N=445) and Medical School (N=496) currently enrolled constituted the population and sample of the present study. The study included a total of 662 students attending their schools and willing to participate in the study (328 nursing and 334 medical school students). The total participation rate of the study was low (70.4%).

## Data Collection Tools

Data used in the present study were collected using Data Form for socio-demographic characteristics and Ageism Attitude Scale (AAS).

Data form for socio-demographic characteristics:

The questionnaire form contains 23 questions about the socio-demographic characteristics of students and their parents and reflections of students on living with elderly people.

Ageism Attitude Scale (AAS):

This is a five-point Likert-type scale developed by Vefikuluçay Yılmaz and Terzioğlu (2011), and its validity and reliability were carried out. Ageism Attitude Scale consists of three dimensions. "Restricting the life of the elderly" dimension is beliefs and perceptions of society about restricting the social life of an elderly person. The maximum point for these dimensions is "45" and minimum "9" [13]. "Positive discrimination for elderly" dimension is positive beliefs and perceptions of society towards the elderly person. The maximum point in this dimension was "40" and minimum "8". "Negative discrimination towards elderly" dimension is negative beliefs and perceptions of society towards the elderly person. The maximum point in this dimension was "30" and minimum "6". The scale had expressions of both positive and

negative attitudes. Cronbach's Alpha Reliability Coefficient of the scale was calculated to be 0.80. The total maximum point of the scale was "115" and the minimum "23". Higher points meant positive attitudes about age discrimination [13]. Cronbach's Alpha Reliability Coefficient for the present study was calculated to be 0.74.

## Statistical Analysis

For the analysis of data in the study, IBM SPSS Statistics for Windows (Version 20.0) was used. Descriptive statistics (percentage, mean and standard deviation), t-test, Mann-Whitney U, Chi-square, One-Way ANOVA and Kruskal Wallis tests were used. The significance level was accepted as  $p < 0.05$ .

## Results

Of the 662 students who participated in the study, 328 were nursing school students and 334 were medical school students. Mean age of nursing school students who participated in the study was  $20.46 \pm 2.08$  years, 68% of them were female, 95.5% were single, 47.6% were residing in student dormitories, and 50.6% had lived in cities (central towns of provinces) in most of their lives before coming to university. Mean age of the medical school students, on the other hand, was  $21.12 \pm 2.12$  years, 63.5% of them were female, 99.7% were single, 40.1% were residing in student dormitories, and 72.7% had lived in cities in most of their lives before coming to university. Mean age, type of residence and longest-living place before coming to university differed significantly between the two groups of students ( $p < 0.05$ ), while gender and marital status percentages were not statistically different ( $p > 0.05$ ).

In terms of mean points of two student groups based on AAS and its dimensions, nursing students had higher points in "restricting the life of elderly", "positive discrimination towards elderly people" and AAS mean points and lower mean points for "negative discrimination towards elderly" compared to those of medical school students. Differences between students of two schools were not significant for positive discrimination and AAS mean points ( $p > 0.05$ ) but significant for points of "restricting the life of elderly" and "negative discrimination towards elderly" ( $p < 0.05$ ) (Table 1).

**Table 1.** Comparison of AAS\* mean points and its dimensions for nursing and medical school students

	Point interval of scale	Cronbach's alpha value	Nursing school students (n=328) $\pm$ SD	Medical school students (n=334) $\pm$ SD	p
Restricting the life of elderly	9-45	.67	37.56 $\pm$ 4.25	36.84 $\pm$ 4.10	t=2.190 p=0.029
Positive discrimination towards elderly	8-40	.76	31.59 $\pm$ 4.78	31.02 $\pm$ 4.26	t=1.631 p=0.103
Negative discrimination towards elderly	6-30	.50	17.37 $\pm$ 3.42	17.92 $\pm$ 3.08	t=-2.176 p=0.030
AAS	23-115	.74	86.51 $\pm$ 8.22	85.78 $\pm$ 8.52	t=1.128 p=0.260

\*AAS: Ageism Attitude Scale

Among nursing school students, differences between genders were significant for AAS and all of its dimensions except for "positive discrimination towards elderly" ( $p < 0.05$ ) (Table 2). The gender difference was significant among medical school students only for "restricting the life of elderly" dimension ( $p < 0.05$ ). In terms of gender difference of all students combined for AAS and its

dimensions, the difference between genders was significant for "restricting the life of elderly" and "negative discrimination towards elderly" dimensions ( $p < 0.05$ ), while the difference was not significant for "positive discrimination towards elderly" ( $p > 0.05$ ) (Table 2).

Table 2. Comparison of AAS\*\* mean points and its dimensions for male and female students

	Nursing school female $\pm$ SD	Nursing school male $\pm$ SD	Medical school female $\pm$ SD	Medical school male $\pm$ SD	Nursing and medical school combines female $\pm$ SD	Nursing and medical school combines male $\pm$ SD
Restricting the life of elderly	37.93 $\pm$ 3.83	36.75 $\pm$ 4.95	37.21 $\pm$ 3.82	36.21 $\pm$ 4.48	37.58 $\pm$ 3.84	36.46 $\pm$ 4.70
	*2.158	<b>0.032</b>	*2.176	<b>0.030</b>	*3.101	0.002
Positive discrimination towards elderly	31.56 $\pm$ 4.92	31.64 $\pm$ 5.36	30.86 $\pm$ 4.11	31.28 $\pm$ 4.51	31.22 $\pm$ 4.32	31.45 $\pm$ 4.91
	*-.154	*-.878	-.858	0.392	-.616	0.538
Negative discrimination towards elderly	17.67 $\pm$ 3.36	16.72 $\pm$ 3.47	18.05 $\pm$ 3.01	17.70 $\pm$ 3.20	17.86 $\pm$ 3.20	17.25 $\pm$ 3.36
	*2.361	<b>0.019</b>	*1.001	0.317	*2.285	<b>0.023</b>
Ageism Attitude Scale	87.17 $\pm$ 7.59	85.12 $\pm$ 9.30	86.12 $\pm$ 7.94	85.18 $\pm$ 9.45	86.66 $\pm$ 7.77	85.15 $\pm$ 9.36
	*2.111	<b>0.036</b>	*.973	0.331	*2.199	<b>0.028</b>

\*=t test and p value \*\*AAS: Ageism Attitude Scale

No association was found between AAS mean points, age, and longest-living place of the student before coming to school among nursing and medical school students ( $p>0.05$ ). AAS mean points were not significantly different between nursing and medical school students in different age groups and school years ( $p>0.05$ ). Except for the second year of school, AAS mean points increased from the first to the last school year in nursing school students,

and the difference among school years was statistically different ( $p<0.05$ ). AAS mean points of medical school students increased from the first to the last school year, and the difference was significant ( $p<0.05$ ). AAS mean points of nursing school students who spent the longest time of their lives in cities were higher than those of medical school students and the difference was significant ( $p<0.05$ ) (Table 3).

Table 3. Comparison of AAS\* mean points of nursing and medical school students for some variables

	Nursing school students (n=328) $\pm$ SD	Medical school students (n=334) $\pm$ SD	p
<b>Age (year)</b>			
21 and under	86.10 $\pm$ 7.95	85.35 $\pm$ 8.55	t=.941 p=0.347
22 and over	87.76 $\pm$ 8.90	86.33 $\pm$ 8.48	t= 1.185 p=.238
	t=-1.587 p=0.114	t=-1.043 p=0.298	
<b>School year</b>			
1st year	84.39 $\pm$ 7.42	82.85 $\pm$ 6.61	t=1.377 p=0.170
2nd year	87.91 $\pm$ 7.60	87.67 $\pm$ 8.33	t=.164 p=0.870
3rd year	86.45 $\pm$ 7.65	86.40 $\pm$ 8.84	t=.034 p=0.973
4th year	87.46 $\pm$ 9.48	84.60 $\pm$ 10.56	t=1.809 p=0.072
5th year	-	85.94 $\pm$ 5.99	-
6th year	-	89.27 $\pm$ 7.41	-
	F=3.151 p=0.025	F=4.312 p=0.001	
<b>Longest living place</b>			
Village	86.48 $\pm$ 7.90	87.06 $\pm$ 8.61	t=-.262 p=0.794
District	84.50 $\pm$ 9.90	85.42 $\pm$ 7.80	t=-.659 p=0.511
City	87.71 $\pm$ 6.96	85.80 $\pm$ 8.74	U=17.476 p=0.022
	KW=6.044 p=0.049	KW=.253 p=0.881	

\*AAS: Ageism Attitude Scale

As can be seen in Table 4, there was no significant association between AAS mean points and family characteristic of both student groups such as the situation of parents, living together of parents, education levels of both parents, occupation status of both

parents, family type, economic status of household ( $p>0.05$ ), while several siblings were significantly associated with AAS points in medical school students ( $p<0.05$ ) (Table 4).

**Table 4.** \*AAS mean points of nursing and medical school students based on family characteristics

Family characteristics		Nursing school students		Medical school students	
		Number (%)	± SD	Number (%)	± SD
Condition of parents	Both parents are alive	304 (92.7)	86.60±8.32	321(96.1)	85.69±8.51
	Either parent has passed away	24 (7.3)	85.38±6.89	13(3.9)	87.92±8.97
		U=3.271 p=0.399		U=2.372 p=0.402	
Living together of parents	Together	298(90.9)	86.58±8.38	315(94.3)	85.68±8.49
	Divorced	6(1.8)	87.83±4.75	6(1.8)	86.17±9.83
	Either parent has passed away	24(7.3)	85.38±6.89	13 (3.9)	87.92±8.97
		KW=.827 p=0.661		KW=.787 p=0.675	
Education level of mother	Primary school and under	237(72.3)	86.55±8.29	141(42.2)	86.26±8.54
	Secondary school	57(17.4)	85.77±8.33	38(11.4)	84.67±7.58
	High school and over	34(10.4)	87.50±7.64	155(46.4)	85.62±8.74
		KW=.474 p=0.789		KW=1.585 p=0.453	
Employment of mother	Employed	30 (9.1)	87.60±6.63	74 (22.2)	85.31±9.57
	Homemaker	298 (90.9)	84.40±8.36	260 (77.8)	85.91±8.21
		t=.760 p=0.448		t=-.535 p=0.593	
Education level of father	Primary school and under	120(36.6)	86.48±8.79	50(15.0)	87.64±8.17
	Secondary school	67 (20.4)	85.91±8.22	34(10.1)	85.88±8.55
	High school and over	141(43.0)	86.83±7.74	250(74.9)	85.39±8.57
		F=.285 p=0.752		F=1.458 p=0.234	
Employment of father	Employed	236(72.0)	86.78±8.00	250(74.8)	85.76±8.26
	Retired	79(24.0)	86.17±8.99	81 (24.3)	85.65±9.28
	Unemployed	13(4.0)	86.51±7.05	3 (0.9)	90.33±10.69
		KW=1.747 p=0.417		KW=.512 p=0.774	
Family type	Nuclear family	253(77.1)	86.52±7.91	294(88.0)	85.61±8.32
	Extended	62(18.9)	86.87±9.78	32 (9.6)	86.28±9.66
	Separate	13(4.0)	84.69±6.10	8(2.4)	90.00±10.90
		KW=2.202 p=0.332		KW=3.065 p=0.216	
Economic status of family	Income is less than expenses	43(13.1)	85.12±7.45	14(4.2)	86.71±9.82
	Income is equal to expenses	230(70.1)	86.63±8.63	208(62.3)	85.98±8.25
	Income is more than expenses	55(16.8)	87.13±6.92	112(33.5)	85.30±8.89
		KW=1.992 p=0.339		KW=.188 p=0.910	
Number of siblings	Two or less	90(27.4)	86.13±7.89	142(42.5)	86.89±8.39
	Three and more	238 (72.6)	86.66±8.35	192(57.5)	84.95±8.54
		t=-.513 p=0.608		t=332 p=0.039	

\*AAS: Ageism Attitude Scale

AAS mean points were not significantly associated with the success level of students, their willingness to study in their majors, having courses for age discrimination in their curriculum, and their experience with elderly care in their practical training ( $p>0.05$ ) in both medical school and nursing students. There was no relationship between the experience of living together with elderly people and AAS mean points in nursing school students. However, AAS mean points of medical school students who had the experience of living

together with elderly people were statistically higher than those who did not have this experience ( $p<0.05$ ). In both student groups, AAS mean points of students wanting to share a house with elderly people, students wanting to share a house with elderly people after getting married after graduation, students wanting to work in an institution serving elderly people after graduation and students wanting to work in an institution where elderly people work were statistically higher than other students ( $p<0.05$ ) (Table 5).

**Table 5.** AAS\*mean points of nursing and medical school students based on education characteristics

Characteristics	Nursing school students		Medical school students		
	Number (%)	±SD	Number (%)	±SD	
<b>Level of school success</b>	Weak	26(7.9)	86.46± 8.87	22(6.6)	84.86±6.49
	Moderate	237(72.3)	86.35± 8.27	191(57.2)	86.13±8.36
	Outstanding	65(19.8)	87.10± 7.83	121(36.2)	85.33±9.09
		KW=664 p=0.718		KW=.856 p=0.652	
<b>Willingness to select education in the current department</b>	Yes	218 (66.5)	86.59±8.32	305(91.3)	85.90±8.47
	No	110 (33.5)	86.36±8.05	29 (8.7)	84.55±9.13
		t=.249 p=0.803		t=.762 p=0.451	
<b>Presence of age discrimination courses in curriculum</b>	Yes	51 (15.5)	87.57±6.97	25 (7.5)	81.92±12.13
	No	277(84.5)	86.32±8.42	309(92.5)	86.09±8.10
		t=.999 p=0.318		t=-1.688 p=0.103	
<b>Experience with providing care for elderly people in practice training</b>	Yes	187(57.0)	87.23±8.59	88(26.3)	86.51±7.82
	No	141(43.0)	85.57±7.63	246(73.7)	85.52±8.75
		t=1.815 p=0.066		t=.940 p=0.348	
<b>Cohabitation with elderly so far</b>	Yes	181(55.2)	86.76±8.64	157(47.0)	86.97±7.57
	No	147(44.8)	86.20±7.68	177(53.0)	84.72±9.17
		t=.611 p=0.541		t=2.421 p=0.016	
<b>Willingness to live together with elderly person</b>	Yes	214 (65.2)	87.99±8.23	185(55.4)	86.83±7.71
	No	114 (34.8)	83.75±7.47	149(44.6)	84.47±9.29
		t=4.585 p=0.000		t=2.540 p=0.012	
<b>Willingness to live together after graduation and getting married</b>	Yes	201 (61.3)	87.34±8.41	153(45.8)	86.80±7.65
	No	127 (38.7)	84.42±7.47	181(54.2)	84.92±7.47
		t=3.743 p=0.00		t=2.019 p=0.044	
<b>Willingness to work in a unit providing care for elderly</b>	Yes	200 (61.0)	87.83±8.35	203(60.8)	87.00±7.95
	No	128 (39.0)	84.45±7.59	131(39.2)	83.90±9.04
		t=3.701 p=0.000		t=3.297 p=0.001	
<b>Willingness to work at a unit where elderly people are employed</b>	Yes	208 (63.4)	87.44±8.57	260(77.8)	86.95±7.92
	No	120 (36.6)	84.90±7.32	74 (22.2)	81.66±9.30
		t =2.725 p=0.007		t=4.869 p=0.000	

\*AAS: Ageism Attitude Scale

## Discussion

Attitudes towards elderly people and ageism vary in cultures. The present study investigated the attitudes of nursing and medical school students towards age discrimination and to determine the association between these attitudes and various variables. The limitations of this study were the lack of sample selection and the low participation rate. Numerous studies similar to the present one conducted on nursing and medical school students showed that attitudes of students towards age discrimination were positive [4,14-21]. However, unlike the present study, Köse et al. (2015) reported a negative attitude of students towards elderly people [2]. Another study revealed that nursing school students had a lack of knowledge regarding the care of elderly people, and held a negative attitude toward them [22]. Although students have positive attitudes towards the elderly, there is research showing that nurses may have negative attitudes in working life. A study reveals that even in a country with high close family ties, ageism exists in healthcare settings because of nurses' poor knowledge and attitudes toward older adults [23]. For this reason, curricula should be created for students to develop positive age discrimination during their education. Our findings could be a result of Turkish traditional cultural attitudes that elderly people should be respected, their advice should be kept and they should be taken care of. To sustain these positive attitudes and to prevent negative attitudes to develop in the future, education curricula should have courses informing students about the increasing old age population, their caring needs, and the importance to eliminate prejudiced opinions towards them. Indeed, it has been found out that specific training programs for this aim improved the ability of students to take better care of elderly people and to improve their cultural sensitivities [20].

Studies about age discrimination reported that attitudes towards elderly people are most affected by age, gender, and level of education variables [18]. In the present study, however, no association was found between the age of both student groups and their attitudes towards elderly people. Similar to the present study, some other studies carried out on nursing and medical school students reported that the age of students was not correlated with their attitudes towards elderly people [2,4,13,17,24]. The small age range in both student groups in the present study might have been the cause of lack of a correlation between the age of students and their attitudes towards elderly people.

In terms of gender differences for points of AAS and its dimensions, there were significant differences in both student groups for "restricting the life of elderly" and "negative discrimination towards elderly" dimensions, while no difference was observed for "positive discrimination towards elderly" dimension. On the other hand, some studies reported that gender differences were not significant for attitudes about age discrimination [17,21]. Despite the lack of a difference between genders for attitudes towards elderly people, the rate of female students willing to work in the area of geriatric medicine was found to be higher than male students [16]. By the present study, Vefikuluçay Yılmaz and Terzioglu (2011) found gender differences for the attitudes towards elderly people [13]. Similarly, Altay and Aydin (2015) observed that gender factor significantly affected points of "restricting the life of elderly" and "positive discrimination towards elderly" dimensions

and that female student adopted a more positive attitude towards elderly people compared to male students [14]. Nevertheless, there are also studies reporting more negative attitudes of female students [2,25]. These findings could be related to cultural values and beliefs and explained by the assumption that female students are more accepting of the caring role for elderly people because of the tendency that care for elderly people is generally provided by women in Turkish society.

Previous studies showed that health care students in later school years had more positive attitudes towards elderly people [4,17,19]. In the present study, it was revealed that both groups of students in a school year had significantly higher AAS scores than the students in the previous school year except for the second school year of nursing students. AAS mean points of medical school students were lowest in the first school year and highest in the last, and the difference was statistically significant. Relatively lower AAS mean points in the second school year of nursing students could be due to the possible negative effects of their interaction with dependent elderly people during their Internal Medicine and Surgery Clinics practice in this school year. More positive attitudes in their later school years, on the other hand, could be a result of their increased awareness and their thinking that not all elderly people are dependent. Increasing knowledge and maturation of medical school students in their later school years might have helped them to adopt a more positive attitude towards elderly people. It could be stated that clinical practices improve the abilities of geriatric nurses and increase their caring and cultural sensibilities towards elderly people.

Findings of the present study indicated that cultural characteristics of the place where students lived before coming to health care schools could contribute to the formation of students' attitudes towards elderly people. Altay and Aydin (2015) found a significant association between the place where students lived the longest time before coming to school and negative discrimination points towards elderly people and total discrimination points and reported that the lowest negative discrimination was displayed by students who lived most in districts [14]. Yılmaz and Özkan (2010) revealed that students born in villages/small rural towns had higher positive discrimination points [4]. Some other studies, on the other hand, found no associations between the place students lived most and AAS point means [17,24].

While AAS mean points were not significantly associated with the condition of parents, cohabitation of parents, education level and employment status of the mother, education level and employment status of the father, family type, income level of household in the present study, number of siblings had a positive relationship with AAS mean points in medical school students. Studies conducted so far did not indicate any effect of the education level of parents on students' attitudes towards elderly people [24]. Similar to the present study, Köse et al. (2015) found no relationships between the family structure of students, education levels, occupation, and income of their parents and their attitudes towards elderly people [2]. The absence of the relationship between family characteristics and AAS mean points was also reported by Vefikuluçay Yılmaz and Terzioglu (2011). Another study by Yılmaz and Özkan (2010), on the other hand, reported that AAS mean points were higher in students whose parents had lower education levels [4]. These

findings could indicate the willingness of Turkish society to look after and to take on the care of elderly people. Although some studies carried out in Turkey found no association between AAS total mean points of students and their family type [4], some others [17] found a significant effect of family type on AAS mean points [4,17]. These findings point that despite fast changes in economic and social structure in Turkey, students have positive thoughts about elderly people because of their characters originating from Turkish culture.

AAS mean points were not significantly affected by the success level of students, satisfaction status with their majors, having courses about age discrimination in their curricula, and their experience of providing care for the elderly in their practice training in either student groups. To our best knowledge, there is no report in literature about the association between AAS mean points and success level of students, satisfaction status with their majors, and having courses about age discrimination in their curricula. Unlike our expectations that AAS mean points would be affected by these variables, lack of such associations could be explained by the fact that changes in cultural and traditional teachings are difficult and these teachings sustain their effects on our lives. It was reported that the experience of providing care for elderly people in clinics positively affected the positive discrimination of students [14]. In a review by Hovey et al. (2017), it was mentioned that clinic environments positively affected the attitudes of nursing students towards elderly people [26]. Another study, on the other hand, found no association between AAS mean points and students' experience of providing care for the elderly in practice training [17]. Previous cohabitation status of nursing students with elderly people did not significantly affect AAS mean points in the present study. Unlike our study, Ünalan et al. (2012) found that positive discrimination was higher in people who cohabited with the elderly in the household in any period of their life than those who did not [7]. A study by Ünsar et al. (2015) found that students who lived together with people 65 years of age and over had more positive views towards elderly people, and had higher points in "restricting the life of elderly" and "positive discrimination towards elderly" dimensions [21]. Students who lived together with elderly people also had higher AAS mean points than students who did not have such an experience. Altay and Aydin (2015) reported significantly higher points for "restricting the life of elderly" dimension in students who lived together with the only grandmother compared to students who did not live together with an elderly person [14]. In the present study, AAS mean points of medical school students who lived together with elderly people were significantly higher compared to those who did not cohabit with elderly people. Such an outcome could result from the positive effect of sharing the environment with elderly people and a better understanding of them. Thus, the creation of opportunities for the young to spend time with elderly people starting from their childhood could help to develop positive attitudes towards elderly people.

In both schools covered in the present study, AAS mean points of students who were willing to live with elderly, who were willing to live together with elderly after graduation and getting married, who were willing to work after graduation in an institution providing care for elderly people and who were willing to work in an institution which employs elderly employees were statistically higher than those students who were not willing. Another study

showed that students wanting to live with their parents to support them had more positive attitudes towards elderly people [4]. By the present study, Altay and Aydin (2015) reported that willingness to provide care for elderly people in a hospital environment after graduation significantly affected mean points of positive discrimination and AAS mean points [14]. In a study conducted on nursing school students, Darling et al. (2017) found that students who were willing to work with elderly people had more positive attitudes towards elderly people [27]. Investigating the attitude of medical school students, Chua et al. (2008) observed that nearly one-third of them wanted to select the geriatrics department for work in the future [16]. Conversely, many types of research stated that nursing school students' desire to work with the elderly was low [2,28-29]. Observed positive attitudes of students towards elderly people in the present study could be a result of the fact that Turkish society has high respect for the elderly that students in the present study are attending to schools involving health care and that professions involving health care highlight helping humans. Özdemir and Bilgili (2016) found that students who were willing to work with elderly people after graduation, who were living with elderly people and who had the experience of providing health care for elderly people as a part of their clinical practice had more positive attitudes towards elderly people [19]. In their study dealing with attitudes of medical school students and physicians employed in hospital towards elderly people, Samara et al. (2015) found out that elderly people had unique needs [30].

The present study showed that both nursing and medical school students had positive attitudes towards elderly people. For nursing school students, gender differences were significant for the AAS score and all of its dimensions except for "positive discrimination towards elderly". For AAS mean points and dimension points of medical school students, the gender difference was significant only for "restricting the life of elderly" dimension. For both nursing and medical school students, gender differences were significant for "restricting the life of the elderly" and "positive discrimination towards elderly" dimensions. Nursing students had higher points of "restricting the life of elderly" and "positive discrimination towards elderly" dimensions and higher AAS mean points compared to medical school students, while points of "restricting the life of elderly" and "positive discrimination towards elderly" were not significantly different between two groups of students. It could be useful to carry out comparative studies in the future that can reveal the cultural differences better. Also, studies should be conducted on the difficulties of dealing with elderly people and on experienced anxiety levels. Besides, curricula need to be improved for nursing and medical school students to acquire a more holistic view of the care of elderly people.

#### Conflict of interests

*The authors declare that they have no competing interests.*

#### Financial Disclosure

*There are no financial supports*

#### Ethical approval

*Permission was taken from Tokat Gaziosmanpaşa University Medical Faculty Ethical Board for Clinical Research (15-KAEK-186). Verbal approval was taken from all nursing and medical school students before the enrollment after explaining the purpose of the study. Questionnaire forms were filled by the students themselves who were willing to participate in the study.*

## References

1. Turkish Statistical Institute, 2018. Seniors with Statistics 2018. Available from: <http://www.tuik.gov.tr/PreHaberBultenleri.do?id=30699>.
2. Köse G, Ayhan H, Taştan S, et al. Determination of the attitudes of students from a different department in the field of health on the discrimination against the elders. *Gulhane Med J*. 2015;57:145-51.
3. Yıldız R, Ömeroğlu G, Terim N. Elderly discrimination from the perspective of the elderly: The Bursa and Yalova examples. *AEÜ SBED*. 2017;3:313-29.
4. Yılmaz E, Özkan S. Attitudes of nursing students towards ageism. *e-J Nurs Sci Art*. 2010;3:35-53.
5. Altun A, Demirel B. Attitudes of university students on elderly discrimination: the case of Keskin Vocational School MJSS. 2020;9:423-34.
6. Özdemir Ö, Bilgili N. Ageism in health care. *Gulhane M J*. 2014;56:128-31.
7. Ünalan D, Soyuer F, Elmalı F. Evaluation of the attitudes of the geriatric care center workers towards elderly patients. *Kafkas. J Med Sci*. 2012;2:115-20.
8. Ucun Y, Mersin S, Öksüz E. Attitudes towards elderly of youngs. *J Int Soci Res*. 2015;8:1143-49.
9. Potter G, Clarke T, Hackett S, et al. Nursing students and geriatric care: The influence of specific knowledge on evolving values, attitudes, and actions. *Nurse Educ Prac*. 2013;13:449-53.
10. Yılmaz MÇ, İnce FZ. Relationship between nursing and elderly care students' attitudes towards ageism. *BNJ*. 2017;3:281-96.
11. Koh LC. 2012. Student attitudes and educational support in caring for older people - A review of literature. *Nurse Educ Pract*. 2017;12:16-20.
12. Özcan S, Duyan V, Koç F, et al. Third-year medical students' attitudes towards the elderly: evaluation of the effect of an educational program. *Turk J Geriatr*. 2013;16:210-15.
13. Vefikuluçay Yılmaz D, Terzioğlu F. Development and psychometric evaluation of ageism attitude scale among the university students. *Turk J Geriatr*. 2011;14:259-68.
14. Altay B, Aydin T. Evaluation of the attitudes of nursing students towards ageism. *HEAD*. 2015;12:11-8.
15. Bakan AB, Karadag Arli S, Varol E. Identification of nursing students' attitudes toward older people. *Contemp Nurse*. 2018;54:284-92.
16. Chua MP, Tan CH, Merchant R, et al. Attitudes of first year medical students in Singapore towards older people and willingness to consider a career in geriatric medicine. *Ann Acad Med Singapore*. 2008;37:947-51.
17. Demir G, Bicer S, Bulucu-Böyüksoy GD, et al. Attitudes of nursing students about ageism and the related factors. *J Caring Sci*. 2016;9:900-8.
18. Liu, Y, Norman IJ, While AE. Nurses' attitudes towards older people: A systematic review. *Int J Nurs Stud*. 2013;50:1271-82.
19. Özdemir Ö, Bilgili N. Attitudes of Turkish nursing students related to ageism. *J Nurs Res*. 2016;24:211-16.
20. Shellman J. Making a connection: BSN students' perceptions of their reminiscence experiences with older adults. *J Nurs Educ*. 2006;45:497-503.
21. Ünsar S, Erol Ö, Kurt S, et al. Evaluation of ageism attitudes of nursing students. *Cumhuriyet Nurs J*. 2015;4:61-7.
22. Mohammed RF, Omar A.A.A. Knowledge about elderly care and its relation to ageism attitude among undergraduate nursing students. *American J Nurs Res*. 2019;7:73-8.
23. Rababa M, Hammouri AM, Hweidi IM, et al. Association of nurses' level of knowledge and attitudes to ageism toward older adults: Cross-sectional study. *Nurs Health Sci*. 2020;22:593-601.
24. Yazıcı SÖ, Kalaycı I, Kaya E, et al. Attitudes of students in elderly care program towards ageism. *Elderly Issues Res J*. 2015;2:77-87.
25. Şahin H, Erdem Y. Determining the attitudes of nursing students toward the elderly. *Turkish J Soc Res*. 2017;1:219-32.
26. Hovey S, Dyck MJ, Reese C, et al. Nursing students' attitudes toward persons who areaged: An integrative review. *Nurse Educ Today*. 2017;49:145-52.
27. Darling R, Sendir M, Atav S, et al. Undergraduate nursing students and the elderly: An assessment of attitudes in a Turkish university. *Gerontol Geriatr Educ*. 2017;39:283-94.
28. Abudu-Birresborn D, McCleary L, Puts M, et al. Preparing nurses and nursing students to care for older adults in lower and middle- income countries. A Scoping Review. *Int J Nurs Studi*. 2019;92:121-34.
29. Dobrowolska B, Jedrzejkiewicz B, Pilewska-Kozak A. Age discrimination in healthcare institutions perceived by seniors and students. *Nurs Ethics*. 2017;26:443-59.
30. Samara R, Griffiths A, Cox T, et al. Medical students' and doctors' attitudes towards older patients and their care in hospital settings: a conceptualization. *Age Ageing*. 2015;44:776-83.