



Turkish Journal of Geriatrics
DOI: 10.31086/tjgeri.2022.315
2022; 25(4): 568-578

- Ece SAĞEL-ÇETİNER¹ 
- Hacer HARLAK¹ 

CORRESPONDANCE

¹ Ece SAĞEL-ÇETİNER

Phone : +905369141638
e-mail : ece.sagel@adu.edu.tr

Received : Aug 29, 2022
Accepted : Nov 29, 2022

¹ Aydın Adnan Menderes University,
Psychology, Aydın, Turkey

RESEARCH

UNDERGRADUATES' KNOWLEDGE, ATTITUDES, AND ANXIETY ABOUT AGING, AND INTEREST IN WORKING WITH OLDER ADULTS THE ROLE OF PARTICIPATION IN A COURSE ON AGING

ABSTRACT

Introduction: This study aimed to investigate the efficacy of attending a course on Aging Psychology on decreasing ageism and aging anxiety and increasing knowledge of and interest in working with older adults among undergraduate psychology students.

Materials and Method: The study participants included 160 college students aged between 19 and 30. A questionnaire including "the Facts on Aging Quiz", "the Anxiety about Aging Scale", "the Fraboni Scale of Ageism", a question of interest in working with older adults, and a Sociodemographic Information Form was administered at the beginning and end of the semester to two groups of students enrolled in two courses, namely, Aging Psychology and Introduction to Developmental Psychology II.

Results: Analyses partially supported the study hypotheses: Over the semester, ageism declined, whereas knowledge of aging increased. Ageist attitudes of participants who completed the Aging Psychology course declined more than those who completed the Introduction to Developmental Psychology II course. In addition, the level of knowledge of the participants who completed the Aging Psychology course significantly increased at the end of the semester, whereas that of the participants who completed the Introduction to Developmental Psychology II course did not change. The two groups of participants did not differ in aging anxiety and working interests with older adults over the semester.

Conclusion: Interventions in the level of knowledge on aging and the elderly through college courses increase the level of knowledge about aging and decrease ageist attitudes.

Keywords: Ageism; Attitude; Knowledge; Anxiety; Students.



INTRODUCTION

Worldwide, life expectancy has increased, and the population is aging. The emergence of aging societies leads to various social changes, necessitates reconstructing beliefs about aging, and affects individuals' lifestyles. As in the rest of the world, there is an increase in the number of older adults in Turkey's population. Despite the increase in the elderly population, ageism continues to be a worldwide phenomenon (1). The changes in population distribution by age underline the need for individuals who have proper knowledge about, positive attitudes toward, and interest in working with older adults (2). Previous studies have shown that poor knowledge about aging is associated with both negative attitudes and feelings about aging and low interest in working with older adults (3, 4). It is expected that psychology graduates will be working with older adults on aging problems more than ever. Therefore, psychology students' attitudes toward and interest in working with older adults are important issues.

Turkey as an Aging Society

Since it was thought that Turkey had a young population, old age has not been regarded as a primary research concern in the last few years (5). As the world gets older, however, Turkey's population is also getting older. Turkey's population is proportionally much younger than those of many other countries', the number of older adults in the population is increasing. The elderly population, those aged 65 and older, has increased by 24% in the last five years (6). The proportion of the elderly in the total population, 8.3% in 2016, has increased to 9.7% in 2021 (6).

Turkey is a collectivist society in many ways, and intergenerational contact is likely to be more common than in an individualistic society. Surprisingly, however, negative attitudes toward aging and older adults and psychological concerns about aging were higher in Turkey than in the United States, a comparatively individualistic society (7). The impor-

tance of studies on age discrimination has increased with the increase in the elderly population in Turkey. Older adults in Turkey face age discrimination in various aspects of life. A study comparing ageist attitudes in 15 Organization for Economic Cooperation and Development (OECD) countries found that the country with the highest ageism score was Turkey (8). A detailed examination of the results reveals that older people in Turkey experience age discrimination in various social areas, such as employment, health, environment, and social participation (8). Considering the changes in the structure of Turkey's population and age discrimination toward the elderly, the necessity of studies that will contribute to reducing the effect of ageism on the elderly has become more evident. To enhance the quality of elderly people's care, education on aging, which involves understanding the factors that influence the individual's perceptions of aging, both their own and others', can play an important role in the training of competent health professionals who will work with the elderly.

Knowledge About Aging, Aging Anxiety, and Ageism

Ageism refers to prejudice against one group based on their age and includes both stereotypes and discrimination based on age (9). While age-associated stereotypes about elders can be positive (e.g., older adults are wise) as well as negative (e.g., older adults are sick), negative stereotypes are more common (10).

Ageism is like racism and sexism; however, it has been distinguished from them because everyone can become a target of age discrimination (11). According to terror management theory (TMT; e.g., 12), ageism arises from the effort to distance oneself from older people via negative attitudes and behaviors due to the anxiety created by the awareness of one's mortality (12). Several studies have demonstrated that anxiety about aging, which is defined as a combination of concerns and anticipations of losses due to the aging process (13), is one

of the predictors of ageist attitudes toward elderly people (14, 15). Higher levels of anxiety about aging are associated with increasingly ageist attitudes toward older adults (14, 15).

Other research has found knowledge about the aging process to be another predictor of ageist attitudes; knowledge about aging is related to positive attitudes toward aging (3), and a lack of knowledge about aging is associated with higher levels of ageist behaviors (16). Students who take courses on aging during their university education have more knowledge about aging and less ageist attitudes and behavior than those who do not attend such courses (17). Additionally, a study conducted with nursing students found that watching documentaries about aging and being in contact with healthy older adults increased the level of knowledge about aging and positive behaviors toward the elderly (18). Turkish undergraduate nursing students who had completed a course on the health of elders exhibited significantly less ageist behavior than their peers (19). Although education about aging is effective in reducing ageist behavior, there are few courses on aging and ageism (15, 18) in university programs.

Psychology is one of the main professions through which people are cared for. Due to the aging population in Turkey, many members of this profession will be in contact with older people in their practice more than ever before. Providing training to psychology students to reduce ageism is important for the well-being of older adults. This study aimed to examine the effectiveness of the Psychology of Aging and the Introduction to Developmental Psychology II courses on psychology undergraduates to change their ageism, anxiety about aging, knowledge, and interest in working with older adults. It was expected that participants' ageist attitudes and aging anxiety would decrease, while their knowledge of aging and interest in working with older adults would increase at the end of the course.

MATERIALS AND METHODS

1. Sample

The participants were 160 psychology undergraduates who enrolled in courses related to aging at Aydın Adnan Menderes University in Turkey. Ninety-seven were second-year students who enrolled in Introduction to Developmental Psychology II (IDP), a course that discusses the physical, cognitive, and socioemotional development of adolescents and young, middle-aged, and older adults. Sixty-three were fourth-year students who enrolled in Psychology of Aging (PA), a course that discusses aging in late adulthood; these participants had already taken and passed the IDP course in their second year. The sample was 69.4% female and 31.6% male and ranged in age from 19 to 30 ($M = 21.18$, $SD = 1.65$). At least one of the grandparents was involved in the care of 41.9% of the participants when they were children.

2. Measures

Ageism. The participants' ageist attitudes toward elderly people were measured using the Fraboni Scale of Ageism (20). The Turkish adaptation of the reliability, validity, and psychometric properties of the Fraboni Scale of Ageism (FSA) was provided by Kutlu, Küçük, and Yıldız Fındık (21). The original scale had 29 items; however, four items (2, 8, 22, and 24) of the original FSA were excluded because they had low item-total correlations in the Turkish version (21). The FSA is a 25-item (e.g. "*Many elderly people just live in the past*") Likert-type scale ranging from 1 (strongly disagree) to 4 (strongly agree). Higher scores on the scale indicate a greater level of ageism. The Cronbach's α coefficient of the FSA is 0.84 (21). In this study, the Cronbach's α coefficients were 0.83 in the pretest and 0.86 in the posttest.

Knowledge about Aging. Palmore's 25-item True or False Facts on Aging Quiz 1 (FAQ1) was used to measure participants' knowledge of the physical, mental, and social effects of aging and common



myths about aging (22). The FAQ1 was adapted into Turkish by Maner, Mertan and Husnu (23). Each correct answer is scored one and the false answer is scored zero. Higher scores indicate a greater knowledge of aging. A sample item was *"The majority of old people – age 65- plus – are senile."*

Anxiety about Aging. Participants' anxiety about aging was measured by a 20-item Likert-type (1 = strongly disagree to 4 = strongly agree) Anxiety about Aging Scale (AAS) (13). High scores on the AAS indicate a high level of aging anxiety. The AAS was adapted into Turkish by Aydın and Kabasakal (24). In adaptation study, the Cronbach's alpha coefficients was 0.85. A sample item was *"I worry that people will ignore me when I am old"*. In this study, the Cronbach's alpha coefficients were 0.85 in the pretest and 0.83 in the posttest.

Interest in Working with Older Adults (IWOP). Participants' interest in working in a setting that provides services to old adults in the future was measured with a single question with 5-point, Likert-type answer options (1 not at all interested, 5 very interested).

Socio-Demographics. In the socio-demographic form, information was obtained about participants' gender, age, class, socioeconomic status, the frequency of contact with grandparents and whether grandparents were involved in their care when they were children. Social contact with grandparents was measured by asking, "How often are you in contact with your grandparents including face to face meetings, visits, phone calls, text messages, or electronic mail messages?" This question was asked four times for each grandparents. A total score was obtained by averaging the answers given. Participants give their answer based on 7-point scale (7= not alive to 1= Several times a day) (25).

3. Procedure

Data were collected during class time at the beginning (pretest) and end (posttest) of the semester, and extra credit points were offered as incentives

for participation. The participants were told that two measurements would be taken in the study and they were asked to create a code name to match the pretest posttest data. Both courses spanned 14 weeks, with the IDP and AP course durations being 3 and 2 hours per week, respectively. Both courses had only theoretical content. In the first week of the courses, questionnaires were administered before the courses were introduced. In the IDP course, physical, social, and cognitive development processes were mentioned in adolescence for 3 weeks, young adulthood for 3 weeks, middle adulthood for 3 weeks, and late adulthood for 3 weeks. In the last week of the course, death and mourning topics were covered, and the posttest application of the study was made. Meanwhile, in the AP course, the late adulthood period was discussed in detail. First, the concepts of aging and late adulthood were mentioned, followed by the theories of aging, methodology of aging studies, physical changes and health in elderly people, cognitive processes, personality, resilience, role of individuals in the family and society, retirement, leisure-time activities, mental disorders, successful aging, and mourning and death topics. The two courses were given by the same instructor. The lecturer who teaches the course is a research assistant with a doctorate in developmental psychology.

4. Data Analysis

The analyses of the study were performed using the SPSS v. 22 program. Independent t-tests were employed to make comparisons between the two study courses (IDP and AP courses) in the pretest measures. Afterward, to address the associations between the study variables, Pearson correlation analysis was run separately for each course group. Furthermore, to determine whether the courses that the participants attended affected their level of knowledge about aging, ageist attitudes, aging anxiety, and interests in working with elderly people were tested using a repeated-measure analysis of variance (ANOVA). Since the ageism scores of men

were higher than those of women in previous studies (20), 2x2 repeated measures for last factor analysis of covariance (2-way ANCOVA) was conducted to examine whether the effectiveness of education differed according to gender.

5. Ethical Issues

This study was approved by the Social and Human Sciences Research Ethics Committee of Aydın Adnan Menderes University (reference number: 31906847/050.04.04-081001).

RESULTS

Independent samples t-tests were performed to explore the similarities and differences between the two courses (IDP and AP courses) in the pretest. No significant differences were found between the two courses in the pretest scores. Also, no significant differences were found between the two courses in the frequency of contact with grandparents and

the involvement of their grandparents in their care when they were children. Moreover, the independent samples t-tests were performed to examine the gender-related similarities and differences in the pretest measurements. The FSA pretest scores showed a significant gender-related difference ($t_{(142)} = -2.56$; $p = .012$). The FSA scores of male students ($M = 67.86$; $SD = 9.66$) in the pretest were significantly higher than those of female students ($M = 63.20$; $SD = 10.36$) (Table 1). An additional independent samples t-test was conducted to determine whether there is a difference in pretest scores between those whose grandparents involve their care as children and those whose not. It was found that there was no statistically significant difference.

The relationships between age and pre- and posttest FSA, FAQ1, AAS, and IWOP scores were calculated separately for the two study courses using Pearson's correlation analysis. The results of the correlation analysis for AP groups are as follows. The

Table 1. Demographic Variables and Pretest Scores Comparison Between Courses

		M	SD	M	SD	t
Education		Aging Psychology (AP, n = 63)		Developmental Psychology II (DP, n = 97)		
	FSA	63.66	11.27	65.33	9.68	.956
	FAQ1	13.72	2.68	13.30	2.85	-.886
	AAS	56.16	9.60	56.43	10.70	.160
	IWOA	3.73	4.77	3.06	.98	-1.338
Gender		Female (n = 111)		Male (n = 49)		
	FSA	63.20	10.37	67.87	9.66	-2.56*
	FAQ1	13.58	2.70	13.24	2.96	.677
	AAS	55.91	10.26	57.26	10.26	-.765
	IWOA	3.06	1.07	3.92	5.35	-1.619

Not 1. * $p < .05$, ** $p < .001$

Not 2. FSA: Fraboni Scale of Ageism, FAQ1: The Facts on Aging Quiz, ASS: Anxiety about Aging Scale, IWOA: Interest In Working With Older Adult



pretest FSA was moderately and positively correlated with the pretest ASS and posttest FSA. The pretest FAQ1 scores were negatively and moderately correlated with the pretest FSA and pretest AAS. Furthermore, a moderate positive correlation was noted between the pre- and posttest FAQ1. Lastly, the posttest FAQ1 was negatively and moderately correlated with the posttest FSA (Table 2).

The results of correlation analysis for the IDP group are as follows (Table 3). The pretest IWOP scores showed a weak negative correlation with age and pretest FSA. The pre- and posttest IWOP scores showed a positive and weak relationship. A moderate positive correlation was noted between the pre- and posttest AAS and between the pretest AAS and posttest FSA scores. The pretest FSA scores are moderately positively correlated with the posttest FSA and negatively correlated with the pretest FAQ1. The pretest FAQ1 scores showed a weak negative correlation with the posttest AAS scores. The pre- and posttest FAQ1 scores were moderate-

ly positively correlated. Lastly, the posttest AAS was moderately correlated with the posttest FSA (positively) and posttest FAQ1 (negatively).

GLM repeated measures analyses were conducted to test the effectiveness of IDP and AP courses over the semester. Between- and within-group factors were education (IDP course and AP course) and time (pre- and posttest), respectively. Results revealed that the main effect of time is statistically significant (Wilks' $\lambda = .866$; $F_{(1, 158)} = 24.542$; $p < .001$; $\eta^2 = .13$). However, this effect is qualified by a significant time X group interaction (Wilks' $\lambda = .957$; $F_{(1, 158)} = 7.071$; $p = .009$; $\eta^2 = .04$). The interaction indicates that the variation in the mean score of FSA over the repeated measurement occasions varies as a function of an education group membership. The main effect of the course group on the mean FSA score across time was statistically significant ($F_{(1, 158)} = 8.698$; $p = .004$; $\eta^2 = .05$). Accordingly, the FSA scores in the posttest (IDP course group: $M = 63.32$; AP course group: $M = 57.30$) were lower than those

Table 2. Correlation Matrix for AP Group

		1	2	3	4	5	6	7	8	9	10
	1.Age	1									
	2.Social Contact	.35**	1								
Pretest	3.FSA	-.01	-.09	1							
	4.FAQ1	-.03	.08	-.34**	1						
	5.AAS	.19	.09	.67**	-.42**	1					
	6.IWOA	-.01	-.14	.17	-.17	.17	1				
Posttest	7. FSA	-.02	-.17	.44**	-.44**	.22	.26	1			
	8.FAQ1	.02	.02	.07	.44**	.14	-.17	-.35*	1		
	9.AAS	.09	.01	.14	-.05	.23	.19	.18	-.01	1	
	10.IWOA	-.01	-.20	-.12	.07	-.02	.10	-.18	-.03	.00	1

Not 1. * $p < .05$, ** $p < .001$

Not 2. FSA: Fraboni Scale of Ageism, FAQ1: The Facts on Aging Quiz, ASS: Anxiety about Aging Scale, IWOA: Interest In Working With Older Adult

Not 3. AP group Aging Psychology course group

Table 3. Correlation Matrix for IDP Group

		1	2	3	4	5	6	7	8	9	10
	1.Age	1									
	2.Social Contact	-.01	1								
Pretest	3.FSA	-.06	-.30	1							
	4.FAQ1	.07	.22*	-.32**	1						
	5.AAS	-.07	-.08	.21*	-.16	1					
	6.IWOA	-.23*	.10	.06	-.08	-.10	1				
Posttest	7.FSA	-.10	-.02	.59**	-.12	.32*	-.01	1			
	8.FAQ1	.16	-.10	-.17	.37**	-.15	-.23	-.33	1		
	9.AAS	-.14	-.18	.20	-.28*	.65**	-.09	.34**	-.30*	1	
	10.IWOA	-.02	.12	.29*	-.02	-.01	.25*	.25	-.05	-.09	1

Not 1. *p < .05, **p < .001

Not 2. FSA: Fraboni Scale of Ageism, FAQ1: The Facts on Aging Quiz, ASS: Anxiety about Aging Scale, IWOA: Interest In Working With Older Adult

Not 3. IDP group Introduction to Developmental Psychology II course group

in the pretest for both groups (IDP course group: M = 65.26; AP course group: M = 63.73). However, the difference between the pre- and posttest FSA scores was more evident in the AP course group (Table 4).

Regarding the effect of education on the FAQ1 scores, the main effect of time (Wilks' $\lambda = .901$; $F_{(1, 158)} = 17.379$; $p < .001$; $\eta^2 = .10$) and the time X group interaction (Wilks' $\lambda = .949$; $F_{(1, 158)} = 8.421$; $p = .004$; $\eta^2 = .05$) were significant. The main effect of the course group on the mean FAQ1 scores across time was statistically significant ($F_{(1, 158)} = 10.928$; $p = .001$; $\eta^2 = .07$). The results revealed a significant increase in the knowledge of aging over the repeated measure. The level of knowledge reported by AP course students in the posttest (M = 15.44) was higher than that in the pretest (M = 13.71), whereas the FAQ1 scores of the IDP group students in the pretest (M = 13.33) and posttest (M = 13.64) did not differ.

The results of the statistical analysis examining the effect of education on AAS scores showed no significant effect of time X group interaction ($F_{(1, 158)} = .163$; $p = .687$). Moreover, taking a course did not significantly affect individual interest in working with older people ($F_{(1, 114)} = .427$; $p = .482$).

Following these analyses, a two-way analysis of covariance was performed to investigate the main effects of education condition (IDP and AP) and gender on the FSA scores controlling the effects of prior FSA scores. This statistical procedure also tested the interaction between the two education conditions and gender. The main effect of gender was not significant ($F_{(1, 156)} = 1.57$; $p = .212$). The interaction between education condition and gender was also not statistically significant ($F_{(1, 156)} = 0.417$; $p = .519$). Therefore, the effectiveness of education on FSA scores did not differ by participants' gender.



Table 4. 2x2 Repeated Measures ANOVA Results

Variable	AP		IDP		Effect	F ratio	ANOVA η ²
	M	SD	M	SD			
FSA							
Time 1	63.73	10.81	65.26	9.11	T	24.04**	.13
Time 2	57.31	9.59	63.32	8.78	T x E	7.07*	.04
FAQ1							
Time 1	13.71	2.63	13.33	2.62	T	17.38**	.10
Time 2	15.44	2.256	13.64	2.57	T x E	8.42*	.05
AAS							
Time 1	56.16	9.60	56.43	10.70	T	8.37**	.05
Time 2	53.48	10.18	54.40	8.60	T x E	.163	.00
IWOA							
Time 1	3.64	5.35	2.95	1.01	T	.497	.00
Time 2	3.16	1.18	2.95	.95	T x E	.497	.00

Not 1. N = 160. AP, Aging Psychology; IDP, Introduction to Developmental Psychology II course group; ANOVA= analysis of variance; T= time, E=Education; *p < .05, **p < .001

Not 2. FSA: Fraboni Scale of Ageism, FAQ1: The Facts on Aging Quiz, ASS: Anxiety about Aging Scale, IWOA: Interest In Working With Older Adult

DISCUSSION

This study investigated the effects of aging-related two different courses (during a semester-long) on the participants' knowledge, attitudes, and anxiety about aging and on their interest in working with older adults. As expected, each of the predictors was correlated with ageism in both the IDP course group and the AP course group. Consistent with many other studies, a higher level of aging anxiety was associated with higher levels of ageist attitudes (15, 16), a finding that substantiates the terror management theory of ageism, and a lower level of knowledge about aging was associated with higher levels of ageist attitudes (16).

It was hypothesized that the ageist attitudes of participants would decline throughout their respective courses. Studies have found mixed results

regarding the effects of education on ageism. Although some have indicated that education has a positive effect on ageist attitudes (17, 19), others have found no effect (26). In the present study, neither IDP course group nor AP course group reported significantly less ageism at the end of the semester, but a decrease in ageist attitudes was more evident in those who had taken the AP course. The findings suggest that AP education may be an effective intervention for reducing the ageist attitudes of health professionals. This conclusion can be opened up by a more detailed consideration of the concepts of old age and aging in the AP course compared to the IDP course. While the physical, cognitive and socio-emotional dimensions of old age are discussed with a three-week curriculum in the IDP; in AP course besides the individual processes of aging (physical, emotional and cognitive

changes) social dimensions of aging (such as the transition to retirement, the regulation of family relations and the place of the elderly in the society) to be addressed through whole semester that may have influenced the ageist attitudes of individuals.

It was also hypothesized that the aging-related knowledge of participants would increase as a result of the courses. Only the results for the AP course group supported this hypothesis; these participants reported significantly greater knowledge about aging at the end of the semester. In the case of the IDP group, though, knowledge about aging had not increased by the end of the semester. The results are consistent with the findings of other studies, which show that taking courses specifically focused on aging or on the health of older adults increases knowledge about this period of life (17, 19).

In light of the possibility that gender is relevant to one's knowledge of aging and ageism, the present study investigated whether there was a gender difference in the effects of the courses. Although the ageism scores in the pre-test of the male students were higher than those of the female students, the effectiveness of the courses on ageism and on knowledge of aging did not vary in relation to the gender of the participants. Educational interventions in this subject are thus an appropriate and effective method for both women and men.

Contrary to our hypothesis, we found no significant difference between pre-test and posttest scores of aging anxiety in the two groups. Nor did the interest of the participants in working with the elderly differ by the end of the semester. These findings are contrary to those of other studies, which have suggested that interventions designed to improve knowledge of aging also reduce ageism and aging anxiety and increase interest in working with the elderly (2). However, these studies have also been inconsistent in what they show about the relationship between aging anxiety and level of knowledge. Allan and Johnson (14) found that greater knowledge about aging was significantly associated

with a decrease in aging anxiety. But Harris and Dollinger (17) found that education about gerontology produced no significant changes in aging anxiety. These mixed results highlight the need for further research to elucidate the factors that affect aging anxiety. Another study found that participation in education programs about gerontology is associated with greater interest in aging-related careers (4), an association not confirmed by our own study. One explanation may be that courses with field practice that naturally increase students' interactions with the elderly are more effective than purely theoretical coursework in reducing anxiety about aging and increasing the desire to work with the elderly.

This study has several limitations. One is the lack of gender diversity in the sample, likely due to the convenience-based nature of the sampling. Most participants were female, and all were psychology undergraduates. In future studies, it would be beneficial to include students from a variety of departments, including nursing, physiotherapy, and social services, who may be working with the elderly after they graduate. If theoretical instruction is supplemented by field practice, students' interactions with the elderly will increase a change that may also increase the effectiveness of the intervention. The courses were given by a single faculty member. Therefore, the results are affected by the professional skills of the lecturer teaching the course as well as the course syllabus. This limits the generalizability of the results. Other limitation of the study that draws attention is related to measurement tools. Working interest with old people was measured with a single item indicator and may not have been sensitive to the subtleties of working interest. More extensive measurement strategies should be utilized in future studies. Measurement of a broad range of working interests with old people could shed light on how different factors may be more salient in the career plans of university students. Since there is no psychometric information about the Turkish adaptation of the FAQ measurement, these results therefore



need to be interpreted with caution. In future studies, measurement tools with psychometric information should be preferred.

Despite such limitations, this study suggests that educational interventions to change student attitudes and knowledge are working, and it confirms the potential value of increasing knowledge of aging as a means of reducing negative attitudes about the elderly. The findings are consistent with those of other research (3, 16, 17). Although taking a course on aging fostered more positive attitudes toward

older adults, doing so did not reduce aging anxiety or increase interest in working with the elderly. More research is needed to understand how ageism and aging anxiety are correlated and what influences them. Enhanced educational interventions may improve the attitudes about aging and aging-related subjects of students preparing for a career working with the elderly.

Conflict of Interest: We have no conflicts of interests to disclose.

REFERENCES

1. McConatha JT, Schnell F, Volkwein K, Riley L, Leach E. Attitudes toward aging: A comparative analysis of young adults from the United States and Germany. *Int J Aging Hum Dev* 2003; 57(3): 203-15. (PMID: 15176668)
2. Cottle NR, Glover RJ. Combating ageism: Change in student knowledge and attitudes regarding aging. *Educ Gerontol* 2007; 33(6): 501-12. (DOI: 10.1080/03601270701328318)
3. Darling RM. Knowledge of aging and attitudes toward older people by communication sciences and disorders students. *Contemp Issues Commun Sci Disord* 2016; 43: 50–63. (DOI: 10.1044/cicsd_43_S_50)
4. Cummings SM, Adler G, DeCoster VA. Factors influencing graduate social work students' interest in working with elders. *Educ Gerontol* 2005; 31:643–55. (DOI: 10.1080/03601270591003382)
5. Imamoglu EO, Imamoglu V. Life situations and attitudes of the Turkish elderly toward institutional living within a cross-cultural perspective. *J Gerontol* 1992; 47: 102–8. (PMID: 1538068)
6. Turkish Statistical Institute. Elders with Statistics. 2021 [Internet]. Available from: <https://data.tuik.gov.tr/Bulten/Index?p=Istatistiklerle-Yaslilar-2021-45636> Accessed: 18.03.2022. (in Turkish)
7. McConatha JT, Hayta V, Rieser-Danner L, McConatha D, Polat, TS. Turkish and U.S. attitudes toward aging. *Educ Gerontol* 2004; 30: 169–83. (DOI: 10.1080/03601270490272106)
8. Kim JH, Song A, Chung S, Kwak KB, Lee Y. The comparative macro-level ageism index: An international comparison. *J Aging Soc Policy* 2021; 33(6): 571-84. (PMID: 32279608)
9. Butler RN. Age-ism: another form of bigotry. *Gerontologist* 1969; 9: 243–246. (PMID: 5366225)
10. Hummert ML. Multiple stereotypes of elderly and young adults: a comparison of structure and evaluations. *Psychol Aging* 1990; 5: 182–93. (PMID: 2378684)
11. Palmore E. The ageism survey: first findings. *Gerontologist* 2001; 41(5): 572–5. (PMID: 11574698)
12. Martens A, Greenberg J, Schimel J, Landau MJ. Ageism and death: Effects of mortality salience and perceived similarity to elders on reactions to elderly people. *Pers Soc Psychol Bull* 2004; 30:1524–36. (PMID: 303179187)
13. Lasher KP, Faulkender PJ. Measurement of aging anxiety: Development of the anxiety about aging scale. *Int J Aging Hum Dev* 1993; 37(4): 247–259. (PMID: 8307644)
14. Allan LJ, Johnson J. Undergraduate attitudes toward the elderly: The role of knowledge, contact, and aging anxiety. *Educ Gerontol* 2009; 35(1): 1–14. (DOI: 10.1080/03601270802299780)
15. Boswell SS. Predicting trainee ageism using knowledge, anxiety, compassion, and contact with older adults. *Educ Gerontol* 2012; 38: 733–41. (DOI:10.1080/03601277.2012.695997)
16. Stahl ST, Metzger A. College students' ageist behavior: The role of aging knowledge and perceived vulnerability to disease. *Gerontol Geriatr Educ* 2013; 34: 197–211. (PMID: 23383652)
17. Harris LA, Dollinger S. Participation in a course on

- aging: Knowledge, attitudes, and anxiety about aging in oneself and others. *Educ Gerontol* 2001; 27: 657–67. (DOI: 10.1080/036012701317117893)
18. McCleary R. Using film and intergenerational colearning to enhance knowledge and attitudes toward older adults. *Educ Gerontol* 2014; 40: 414–26. (DOI:10.1080/03601277.2013.844034)
 19. Usta YY, Demir Y, Yönder M, Yıldız A. Nursing students' attitudes toward ageism in Turkey. *Arch Gerontol Geriatr*. 2012; 54(1): 90-3. (PMID: 21353316)
 20. Fraboni M, Saltstone R, Hughes S. The Fraboni scale of ageism (FSA): An attempt at a more precise measure of ageism. *Can J Aging* 1990; 9: 56–66. (DOI: 10.1017/S0714980800016093)
 21. Kutlu Y, Küçük L, Yıldız Fındık U. Psychometric properties of the Turkish version of the Fraboni Scale of Ageism. *Nurs Health Sci* 2012; 14(4): 464-71. (PMID: 23186521)
 22. Palmore EB. Ageism: Negative and Positive, In: Helvi G, Sandi B (Eds). *Introduction and Basic Definitions*. 2nd ed. New York, Springer Publishing Company, USA 1999, pp 3-18.
 23. Maner U, Mertan B, Husnu S. Reducing ageism in Turkish-speaking university students: The roles of intergroup contact and perspective taking. *Turkish Journal of Geriatrics* 2020; 23(3): 401-9. (DOI:10.31086/tjgeri.2020.176)
 24. Aydin A, Kabasakal E. Turkish Adaptation of the Aging Anxiety Scale for Middle-Aged Women: Validity and Reliability Study. *J Basic Clin Health Sci* 2022; 6: 173-180. (DOI:10.30621/jbachs.974023)
 25. Brooks KP, Gruenewald T, Karlamangla A, Hu P, Koretz B, Seeman T. Social Relationships and Allostatic Load in the MIDUS Study. *Health Psychology* 2014; 33(11): 1373-1381. (DOI: 10.1037/a0034528)
 26. Knapp JL, Stubblefield P. Changing students' perceptions of aging: The impact of an intergenerational service learning course. *Educ Gerontol* 2000; 26: 611–21. (DOI:10.1080/03601270050200617)