ABSTRACT

OBJECTIVE: This study was conducted to determine the attitudes of university students studying in different fields toward discrimination of the elderly.

METHODS: This descriptive study was conducted with students who were still studying in the 2015-2016 period. A sample size of 416 students was determined by the stratified sampling method, and students were selected by simple random sampling. Data were collected using an identifying information form and an Age Discrimination Attitude Scale (ADAS) by face-to-face interview. Statistical analysis was performed using the program SPSS 20.0.

RESULTS: The mean total ADAS score of students was 67.7±6.0. The total ADAS scores and the scores of male students on limiting the life of the elderly was significantly higher than those of female students (p<0.05).

CONCLUSION: It was determined that university students studying in different fields have a positive attitude toward the elderly. Action must be taken to remove discrimination of the elderly, and policies must be developed to increase social sensitivity.

Keywords: Attitude; discrimination; discrimination of elderly.
and their use of social resources are seen as problems. The idea that young and productive groups should be given priority in the use of resources is becoming more widespread [6, 8].

It has been reported in previous studies that the attitudes of young people to discrimination of the elderly may be negative, positive, or mixed [5, 8, 13, 15]. It was observed that the studies examined in the literature were mostly carried out on young people receiving health education. It is thought that the reason for this is that discrimination of the elderly is most often seen in health care services [8, 15, 16]. In order to enable the perceptions of young people toward discrimination of the elderly, it is important to determine the attitudes of students groups in different fields. For this reason, our study was conducted with the objective of determining the opinions of university students studying in different fields toward discrimination of the elderly.

**MATERIALS AND METHODS**

This research was conducted as a descriptive cross-sectional study with university students studying in different fields in the autumn term of the 2015-2016 academic year. The study population consisted of 22,677 university students. The size of the research sample was calculated as 378 by the method of stratified random sampling in relation to size. However, considering the problems of participants the number determined was increased by 10%, and 416 students were contacted. The students to be included in the sample were decided using a simple random number table, with numbers given to each of students in the beginning of the research days.

**Collection of Data**

Ethical approval has been obtained from the local Ethics Committee for research (50687469-1491-313-15/1648.4-794). Data were collected after obtaining a written permission certificate from the students who accepted to participate in the study. The data collection application was performed outside of class hours with oral permission from the teaching staff. This data collection process took approximately 20 min for each class.

**Instruments**

Data were collected by a descriptive information form containing the socio-demographic characteristics of the participants and information on their relations with elderly. The Age Discrimination Attitude Scale (ADAS) was used to determine the students’ attitudes to discrimination of the elderly. ADAS, which was developed in 2008 by Yılmaz Vefikuluçay, consists of 23 items [15]. Its Cronbach Alpha Reliability Coefficient was found to be 0.80. There are positive and negative attitude statements on the scale. The positive attitude statements were scored as follows: 5 = I agree completely, 4 = I agree, 3 = I am undecided, 2 = I don’t agree, 1 = I definitely disagree. The statements of negative attitude toward discrimination of the elderly were scored in the exact opposite way to the scoring described above. The maximum score obtainable was 115, and the minimum score was 23. A high score on the scale indicated a positive attitude in relation to discrimination of the elderly.

ADAS consists of three sub-dimensions. These are as follows: limiting the lives of elderly, positive discrimination toward elderly, and negative discrimination toward elderly. The sub-dimension of limiting the lives of elderly is the beliefs and attitudes relating to limiting the social lives of elderly. The highest possible score on this dimension is 45 and the lowest is 9. The dimension of positive discrimination to elderly is the positive beliefs and attitudes of society to elderly. The highest possible score on this dimension is 40 and the lowest is 8. The dimension of negative discrimination to elderly is the negative beliefs and attitudes of society to elderly. The highest possible score on this dimension is 30 and the lowest is 6 (Table 1).

**Table 1. Aged discrimination attitude scale sub-dimensions distribution**

| Aged discrimination attitude scale sub-dimensions | Scale items | Min points | Max points |
|--------------------------------------------------|-------------|------------|------------|
| Life limitation of the elderly                   | 1, 5, 12, 14, 17, 19, 21, 22, 23 | 9          | 45         |
| Positive discrimination towards elderly          | 2, 4, 6, 7, 8, 9, 13, 20         | 8          | 40         |
| Negative discrimination towards elderly          | 3, 10, 11, 15, 16, 18             | 6          | 30         |
| ADA overall score                                | 23                                     | 115        |
Statistical Analysis
The Statistical Package of Social Sciences (SPSS 20.0 for Windows version; SPSS, Chicago, IL, USA) was used to manage and analyze the collected survey data. Normality of the data to share house with an old person was examined with the Shapiro–Wilk test. In comparisons of two groups, t-test in independent groups was used for variables showing normal distribution; whereas the Mann–Whitney U-test was used for variables that did not show normal distribution. In comparing three or more groups, One-way ANOVA was used for variables showing normal distribution, whereas Kruskal–Wallis analysis was used for variables that did not have a normal distribution. The level of significance for statistical tests was considered as $p<0.05$. Also, in the evaluation of the findings of the research, standard deviation, median, minimum and maximum values, and percentage numbers were used. In statistical calculations, the students' fields of study were grouped under the headings Physical Sciences, Social Sciences, and Health Sciences for ease in determining the level of significance.

RESULTS
The mean age of the students included in the study was found to be $20.54\pm 2.01$ years, and more than half students (59.6%) were females. Almost half of the participants (46.2%) were second-year students. More than half of the participants (61.6%) had a nuclear family, and more than a third of the participants (38.2%) reported that they had experience of living in the same house with an elderly. The proportion of the students who had lived in the same house as an old person for at least one year was 14.4%, whereas 28.9% had lived in the same house as an old person all their lives. It was found that 75% of the students who stated that they lived with an old person lived with at least one old person, and 37.5% of these stated that they only lived with their grandmothers. Of the participants who lived in the same house with more than one old person (25%), it was found that 92.5% lived with their grandfather and grandmother.

Table 2 shows the students' mean scores for ADAS total and sub-dimensions. It was found that according to the total mean scores on the scale, the students' attitudes to elderly were positive.

It was found that male students included in the study had higher average scores on ADAS than female students and that the difference was statistically significant ($p<0.005$). No statistically significant difference was found between the ADAS total scores and the mean subscale scores according to the place where they had lived the most ($p>0.005$).

The difference between the students according to their field of study was not found to be statistically significant although their mean scores for positive attitudes toward elderly were high. The difference between the total ADAS and mean subscale scores according to the students' year of study was not found to be statistically significant ($p>0.005$) (Table 3).

The total ADAS score and mean scores of positive discrimination toward elderly of students who stated that they lived in the same house as an old person were

| Table 2. Distribution of the students according to their ADAS and subscale mean scores (n=416) |
|-----------------------------------------------|
| ADAS Sub-Scales | X±SD* | Med (Min-Max)** |
|-----------------------------------------------|
| Life limitation of the elderly | 20.4±4.7 | 20.0 (9-43) |
| Positive discrimination towards elderly | 30.1±5.4 | 31.0 (8-40) |
| Negative discrimination towards elderly | 18.8±3.6 | 19.0 (9-28) |
| ADAS overall score | 68.0±6.0 | 68.0 (44-88) |
|-----------------------------------------------|
| *SD: Standard Deviation; ** Med: Medium; Min.: Minimum; Max: Maximum. |

| Table 3. Comparison of ADAS and subgroup scores according to the fields of learning of students participating in the survey (n=416) |
|---------------------------------------------------------------|
| Fields of learning | n=416 | Life limitation of the elderly | X±SD | Positive discrimination towards elderly | X±SD | Negative discrimination towards elderly | X±SD | ADAS overall score | X±SD |
|---------------------------------------------------------------|
| Department of science | 150 | 20.6±5.1 | | 29.7±5.8 | | 18.5±3.6 | | 67.8±6.1 |
| Department of social sciences | 223 | 20.1±4.4 | | 30.0±5.2 | | 18.8±3.5 | | 67.3±5.9 |
| Department of health sciences | 43 | 20.5±4.9 | | 31.8±4.17 | | 19.4±3.5 | | 68.9±5.8 |
| p *** | 0.676 | 0.074 | 0.267 | 0.252 |
|---------------------------------------------------------------|
| *SD: Standard deviation; ** Med: Median; Min.: Minimum; Max: Maximum; *** p <0.05 Significance Level.
found to be significantly higher than those of students who did not live with elderly (p<0.005). The difference between the total ADAS score and mean sub-dimension scores of students who stated that there was an old person in their family was not found to be significant (p>0.005) (Table 4).

**DISCUSSION**

Aging is a physiologically occurring part of the lifecycle. This natural process includes physical, social, and psychological changes [17]. These changes should be accepted by society, but elderly are often seen as a social and economic burden. The prejudices caused by this kind of perception form the basis of discrimination of the elderly, which is seen at individual, cultural, and structural levels [6]. At the individual level, discrimination of the elderly stems from the cultural interaction between the individual and society.

Examining the literature, it is seen that the attitudes of young people regarding discrimination of the elderly have been more researched [5, 8, 13, 15, 17]. It has been found that young people display a more negative attitude toward old age than other age groups [18-20]. In the present study, the attitudes of university students studying in different fields toward discrimination of the elderly were examined, and it was found that they generally had a positive attitude. There are many other similar studies with similar results in literature [11-13, 21-26]. The results of various studies carried out with university students have yielded higher ADAS scores than in the present study and a positive attitude toward elderly [5, 13, 15, 26, 27]. The results of a study by Uysal et al. [17] are similar to our study.

A significant difference was found between the total ADAS scores and the scores on the sub-dimension of negative discrimination toward elderly of the male and female students included in the study (p<0.005). In a study by Uysal et al., [17] which was similar to the present study, male students were reported to have a more positive attitude toward elderly than female students. It is thought that this is because women take on more of a

| Variables                              | n  | Life limitation of the elderly X±SD | Positive discrimination towards elderly X±SD | Negative discrimination towards elderly X±SD | ADAS overall scores X±SD |
|----------------------------------------|----|------------------------------------|---------------------------------------------|---------------------------------------------|--------------------------|
| Gender                                 |    |                                    |                                             |                                             |                          |
| Female                                 | 248| 19.8±4.7                           | 29.8±5.3                                    | 18.7±3.4                                    | 66.9±5.8                 |
| Male                                   | 168| 21.1±4.7                           | 30.5±5.5                                    | 18.9±3.7                                    | 68.7±6.0                 |
|                                        |   | MWU= -3.231                         | MWU= -1.719                                  | MWU= -0.567                                  | MWU= -3.454              |
| *p=0.001                               |    |                                    |                                             |                                             |                          |
| Living in the same House with elderly Individuals |    |                                    |                                             |                                             |                          |
| Yes                                    | 159| 20.1±4.4                           | 30.8±4.8                                    | 19.1±3.2                                    | 67.8±5.4                 |
| No                                     | 257| 20.5±4.9                           | 29.7±5.6                                    | 18.6±3.8                                    | 67.6±6.3                 |
| t= 1.168                               |    | t= 2.744                           | t= 3.666                                    | t= 3.930                                    |                          |
| *p= 0.280                              |    |                                    |                                             |                                             |                          |
| Elderly individual in the family       |    |                                    |                                             |                                             |                          |
| Yes                                    | 211| 20.13±4.2                          | 29.9±5.7                                    | 18.7±3.7                                    | 67.3±5.9                 |
| No                                     | 179| 20.6±5.11                          | 30.3±5.09                                   | 18.9±3.6                                    | 68.0±6.2                 |
| There was                              | 26 | 20.6±5.9                           | 30.1±5.4                                    | 18.9±2.2                                    | 67.8±4.6                 |
| KW= 0.471                              |    | KW= 0.132                          | KW= 0.493                                   | KW= 1.491                                   |                          |
| *p= .790                               |    |                                    |                                             |                                             |                          |

*p<0.05
caring role, and this affects their attitude to elderly negatively. In contrast to these results, it was reported in a study by Güven et al. [27] that female students’ attitudes to elderly were more positive than those of male students. Studies by Yılmaz Vekifuluçay and Soyuer et al. [5, 15] report different results: in these studies, no difference was found between the males and females in terms of attitudes toward discrimination of the elderly, and this does not accord with our study.

No statistically significant difference was found between the ADAS scores of the students who participated in the study according to their year of study. Different from our study, it was found in some other studies that as students’ age and education level increased, their positive discrimination toward elderly also increased [5, 13, 15, 17, 27]. This is explained as an understanding of old age with the maturity of individuals with increasing age.

It was found in our study that the total ADAS scores and the mean scores for negative discrimination toward elderly of students who stated that they lived in the same house as an old person were significantly higher than those who did not live in the same house as an old person (p<0.005). The students who lived with an old person, have an opportunity to observe old age directly, to establish a relationship with an old person, and to see their family as a role model in becoming accustomed to living with an old person. This may have an effect. It is shown in the studies by Yılmaz Vekifuluçay and Soyuer et al. that living with an old person causes a positive attitude toward elderly [15, 17]. The results of our study are similar to results in the literature [28, 29].

Most studies of discrimination of the elderly have been conducted on students in health education [5, 8, 13, 17, 26, 27]. It is thought that factors such as the education that these students receive on geriatric health, illnesses, the process of aging, their contact with old patients during their hospital experience, and their care giving affect their attitude toward elderly. In contrast to studies showing health education students with positive attitudes toward elderly [5, 13, 17, 27], a study was found showing that they had a negative attitude [8]. In contrast to the large number of studies that have been carried out on students in the field of health, there have been few studies conducted with students in different fields of study [27]. Although the mean scores on positive discrimination toward elderly of students participating in our study were found to be high, these were not statistically significant. This result shows that the education received by young people in school does not affect their attitudes toward elderly. It is thought that the education received within the individuals’ families and the culture of the society in which they live contribute to their attitudes toward elderly.

**Limitations of the Study:** The fact that the research included only the students of one university campus can be seen as its most important limitation. If it were to be carried out in different areas with larger sample groups the results obtained might be different. Because data collection was performed on weekdays between 08.00 and 17.00, it was not possible to include evening batches. Foreign students were not included in the sample, because it was thought that they might have difficulty with completing the forms at the data collection stage and that they might have cultural differences.

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**REFERENCES**

1. Ucun Y, Mersin S, Öksüz E. Youth attitudes toward elderly people. Int J Soc Res Methodol 2015;8:1143–49.
2. World Health Organization. The World Health Report 2003-Shaping the Future. Available at: http://apps.who.int/iris/bitstream/10665/42789/1/9241562439.pdf. Accessed Jan 9, 2018.
3. General Population Census Results, 1935-2000 and Addresses Based Population Registration System Results, 2007-2014. Available at: http://www.tuik.gov.tr/. Accessed Jan 9, 2018.
4. van den Heuvel WJ, van Santvoort MM. Experienced discrimination amongst European old citizens. Eur J Ageing 2011;8:291–9.
5. Soyuer E, Ünal D, Güleser N, Elmali F. Attitudes of elderly students of health vocational schools on elderly discrimination and its relation to some demographic variables. Mersin University J Health Sci 2010;3:20–5.
6. Buş S. Age discrimination for elderly persons. Electronic J Soc Sci 2015:14:268–78.
7. Özdemir Ö, Bilgili N. Elderly discrimination in health services. Gülhane Med J 2014;56:128–31.
8. Köse G, Ayhan H, Taştan S, İyigün E, Hatipoğlu S, Açikel C. Determining the attitudes of the students who study in different sectors to the elderial discrimination in the field of health. Gülhane Med J 2015;57:145–51.
9. Arun Ö, Panuk D. Ageism in Institutional Care: Causes of the Discriminatory Attitudes of Older Care Staffs towards Ageing and Old Age and Intervention Strategies. Med J Humanities 2014;IV/2:19–33.
10. Liu YE, Norman IJ, While AE. Nurses’ attitudes towards older people: a systematic review. Int J Nurs Stud 2013;50:1271–82.
11. Hughes NJ, Soiza RL, Chua M, Hoyle GE, MacDonald A, Primrose WR, et al. Medical student attitudes toward older people and willingness to consider a career in geriatric medicine. J Am Geriatr Soc 2008;56:334–8.

12. Kishimoto M, Nagoshi M, Williams S, Masaki KH, Blanchette PL. Knowledge and attitudes about geriatrics of medical students, internal medicine residents, and geriatric medicine fellows. J Am Geriatr Soc 2005;53:99–102.

13. Yılmaz E, Özkan S. Attitudes of nursing students to old age discrimination. Maltepe University Nurs Sci Art Rev 2010;3:35–52.

14. Sheikh RB, Mathew E, Rafiquel AM, Suraweera RSC, Khan H, Sreedharan J. Attitude of medical students toward old people in Ajman, United Arab Emirates. Asian Journal of Gerontology and Geriatrics 2013;8:85–9.

15. Yılmaz Vefikuluçay D, Terzioğlu F. The development of the elderly discrimination attitude scale and psychometric evaluation in university students. Turk J Geriatrics 2011;14:259–68.

16. McGuire SL, Klein DA, Chen SL. Ageism revisited: a study measuring ageism in East Tennessee, USA. Nurs Health Sci 2008;10:11–6.

17. Uysal G, Beydağ D, Sensoy F, Özaydin N, Kıyak M. Attitudes of students who receive health education in a foundation university regarding age discrimination. Procedia Soc Behav Sci 2014;152:430–34.

18. Yılmaz M, Altkok M, Polat B, Darci M, Sungur MA. Attitudes towards the elderly discrimination of young adults. Turk J Geriatrics 2012;15:416–23.

19. Bodner E, Lazar A. Ageism among Israeli students: structure and demographic influences. Int Psychogeriatr 2008;20:1046–58.

20. Özkan Y, Bayoğlu AS. Ageism: college students perceptions about older people, Soc Sci 2011;6:107–15.

21. Ehrlich AR, Burton W, Greenberg D. Positive attitudes of first year medical students towards older persons. J Am Geriatr Soc 2003;51:627–35.

22. McKinlay A, Cowan S. Student nurses’ attitudes towards working with older patients. J Adv Nurs 2003;43:298–309.

23. McConatha JT, Rieser-Danner L, Harmer K, Hayta V, Polat TS. Life Satisfaction in three countries. Psychol Rep 2004;94:795–806.

24. Schigelone AS, Ingersoll-Dayton B. Some of my best friends are old: A qualitative exploration of medical students’ interest in geriatrics. Educ Gerontol 2004;30:643–61.

25. Ryan A, Melby V, Mitchell L. An evaluation of the effectiveness of an educational and experiential intervention on nursing students’ attitudes towards older people. Int J Older People Nurs 2007;2:93–101.

26. Cheong SK, Wong TY, Koh GC. Attitudes towards the elderly among Singapore medical students. Ann Acad Med Singapore 2009;38:857–61.

27. Güven ŞD, Ucakan Muz G, Efe Ertürk N. The attitudes of university students on the elderly discrimination and its relation to some variables. Journal of Anatolia Nursing and Health Sciences 2012;15:99–105.

28. Gallagher S, Bennett KM, Halford JC. A comparison of acute and long-term health-care personnel’s attitudes towards older adults. Int J Nurs Pract 2006;12:273–9.

29. Voogt SJ, Mickus M, Santiago O, Herman SE. Attitudes, experiences, and interest in geriatrics of first-year allopathic and osteopathic medical students. J Am Geriatr Soc 2008;56:339–44.