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RESEARCH ARTICLE

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The psychometric properties, confirmatory factor analysis, and cut-off value for the Fraboni scale of ageism (FSA) in a sampling of healthcare workers

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Abstract

Purpose: The Fraboni scale of ageism (FSA) is one of the scales used to determine ageism, which is the expression of prejudice toward the elderly because of their age through attitudes and behaviors. The purpose of this study is to determine the psychometric properties, factor analysis, and cut-off value for the FSA in a sampling of healthcare workers.

Design and Methods: The sampling of this study was conducted methodologically in a descriptive and relationship-seeking type of research and comprised 814 healthcare workers employed at a university and state hospital.

Findings: As a result of the exploratory and confirmatory factor analyses, it was found that the FSA comprised 29 items and three subdimensions, that these three factors explain approximately 30.23% of the total variance, and that the cut-off value is 78.

Practice Implications: This study determined that the Turkish adaptation of the FSA is a suitable tool to measure the ageism of healthcare workers.

KEYWORDS

ageism, cut-off value, discrimination, elderly, Fraboni scale of ageism

1 | INTRODUCTION

There are different scales to determine elderly discrimination, which refers to aging through prejudices, attitudes, and behaviors due to their ages.[1] One of these scales is the Fraboni scale of ageism (FSA). The purpose of this study is to determine the psychometric properties, confirmatory factor analysis, and cut-off value for the FSA.

2 | BACKGROUND

Old age is a complicated process that encompasses numerous different dimensions. Old age is an inescapable period of life and is a process that leads to physical and psycho-social changes influenced by genetic and environmental factors. The World Health Organization (WHO) reported that global population aged 60 and above is 900 million, and the population aged 80 and above is 125 million. Additionally, it is estimated that the share of the population aged 60 and above will grow between 2015 and 2050 from 12% to 22%.[2] In Turkey, 66th of 167 nations in terms of its elderly population,[3] there were 5891694 elderly individuals in 2013, while this number reached 6495239 in 2015 and 6895385 in 2017.[4] The rate of the elderly population within the total population was 6.7% in 2000, while it increased to 9.1% in 2019. According to population projections, the elderly population rate is predicted to be 10.2% in 2023, 12.9% in 2030, 16.3% in 2040, 22.6% in 2060, and 25.6% in 2080.[4] Life expectancy at birth was 54 for women and 51 for men in 1960 in Turkey, while it reached 79.2 in women and 74.7 in men for the year 2013. Considering life expectancy at birth by sex in 37 European countries for the year 2016, Turkey ranks 28th with 80.8 for women and 25th place with 75.3 for men.[5]

The increase in longevity brought along with it the increase of the elderly population and, consequently, ageism, a problem that emerges

in advanced age. Robert Butler first defined the systemic prejudices and discrimination against elderly individuals with the concept of "ageism."[6] Ageism is defined as "the systemic maintenance of stereotypes and discrimination against people because of their age."[6,7] It does not express different attitudes, prejudices, stances, or behaviors exhibited against elderly people purely because of their age but covers both positive attitudes like compassion, wisdom, trustworthiness, political power, freedom, and happiness and negative attitudes like disease, incapacity, ugliness, strain in mental functions, mental illness, uselessness, isolation, poverty, and depression.[1]

According to Butler[6] and Lewis, Barnes, Bienias, Lackland, Evans, and Leon,[8] ageism leads to young individuals' views that the elderly are different than themselves, and this situation increases fear of and trepidation toward aging by eliminating the fact that the elderly are people.[6,8]

Ageism is seen in many areas and leads to problems in economic life, family life, and social life. These problems can lead to issues experienced in areas of the utilization of healthcare services, the covering of healthcare expenditures, the organization and financing of social security institutions, and adequate opportunities for services and work by reflecting in the healthcare sector. Although there are limited studies, healthcare services is specified as one of the areas in which ageism is experienced most. The need to for the greater consumption of healthcare services compared with other segments of the population in pre-existing chronic illnesses and the process of coping with these, in addition to changes that occur in systems because of old age and the increase in the rate of elderly individuals among the general population, has prompted a growing interest in the elderly both by medicine institutionally and by healthcare workers individually.

Previous studies have also determined that healthcare workers' sex,[9-15] education statuses,[16-18] family types,[19] jobs,[10,20,21] institutions of employment,[22] forms of employment,[18,23-25] and satisfaction with their jobs[18,23-26] positively and negatively influence their attitudes toward elderly individuals.

At 2015 WHO report regarding "aging and health around the world" determined that ageist discrimination had gradually become a societal problem.[27] It mentions that aging contains three dimensions: cognitive, emotional, and behavioral. And it goes on to say that these three dimensions may be directed toward themselves or others and may be positive or negative, conscious, or unconscious.[27] The literature contains various scales developed to measure ageist discrimination. According to a systematic compilation study conducted by,[28] while scales containing the aforementioned dimensions are limited in the literature, one of the scales that contains these three dimensions is the FSA.[28] The FSA was derived from Butler's definition of ageism and was developed by Fraboni et al[29] to support the cognitive function measured by other tools, to measure the emotional component of attitudes, and to allow for a more multifaceted evaluation of ageism. The FSA measures the attitudes of young adults toward elderly adults and examines these attitudes not as a single characteristic but as a combination of the elements of neglect, avoidance, and discrimination.[29]

There are four scales in the literature that contain the cognitive, emotional, and behavioral dimensions of aging.[29-32] The overall rating of each measurement feature of these scales, and the quality of evidence per measurement feature per scale in all studies are presented in a systematic study by Ayalon et al[28] In this research; in the evaluation of the psychometric properties of the scales and the overall quality of the evidence, it is seen that they are analyzed by the descending grading method, respectively.[28] As a result, it was seen that the FSA has greater positive criteria compare to other scales, and it therefore emerges why the FSA was selected for this study.

No study determined the cut-off value, even though many studies conducted psychometric property and factor analysis studies for the FSA.[29,33-40] Kutlu, Kucuk, and Yildiz Findik[41] conducted a Turkish adaptation study for the scale in a sampling of Turkish society but did not determine a confirmatory factor analysis study or cut-off value.[41]

This study was conducted to determine the psychometric properties, confirmatory factor analysis, and cut-off value for the FSA in healthcare workers.

The research questions are specified below. They are as follows:

- What are the psychometric properties of the FSA?
- How is the exploratory and confirmatory factor structure for the FSA?
- What is the cut-off value for the FSA?
- What are the levels of ageism and related factors for healthcare workers?

3 | METHODS

3.1 | Research type

This research has basic design in terms of philosophy, descriptive in terms of purpose, quantitative-relational screening in terms of method, cross-sectional in terms of duration, and group research design in terms of analysis unit.[42]

3.2 | Research location and time

The research was conducted between May 2016 and September 2018. The research data were collected in 2018 at a university and state hospital in Eskisehir.

3.3 | Research population and sampling

The population of the research comprised nurses and physicians employed at a university hospital and a state hospital in Eskisehir. The variables used in the calculation of the sampling volume for the healthcare workers were sex, marital status, and education level. It was determined that if the research is studied with 80% power after the conducted literature review the statistical difference would be sufficient and effective in expression. The sampling volume was specified with reference to the study Kutlu et al[41] conducted, and it

was calculated that the total number of units needing to be taken at a power level of 80% for the sex variables was 95% power and above for both variables of marital status and level of education. This research was planned to be conducted with 729 healthcare workers at 5% type I error, 20% type II error, and 80% power level, and the power level of the study approached approximately 85% with 814 healthcare workers. Employees who have worked as nurses or physicians for at least 1 year and healthcare workers willing to participate in the research were included in the sampling.

3.4 | Data collection tools

The data were collected with a survey form and the FSA, which contain questions that include the individual and professional characteristics of healthcare workers.

3.4.1 | Fraboni scale of ageism

The FSA is a self-reporting scale comprising 29 items that deal with ageism in a multidimensional structure. Fraboni et al[29] developed the scale.[29] Kutlu et al[41] performed the Turkish adaptation and determined the psychometric properties for the scale in a sampling of society.[41] Kutlu et al[41] determined the comprehensive validity index for the scale to be 0.98.[41] Four of the scale's items were removed as a result of the reliability analysis, and the scale comprised 25 items. The α value for the Turkish scale is 0.84, and the reliability coefficient acquired through the split half method was determined to be 0.81. The exploratory factor analysis was used for the structure validity of the scale, and a three-factor structure similar to the original scale was determined with a variance of 38.31%.

The present study used the Turkish translation in the Turkish adaptation study that Kutlu et al[41] conducted for the scale.[41]

3.5 | Data collected process

After completing the demographic information, each participant was asked to complete the FSA. The time taken to complete the questionnaire ranged from 30 to 35 minutes.

3.6 | Data analysis

Descriptor analyses (mean, standard deviation, and percentage numbers) were used to determine the individual and professional characteristics of healthcare workers. The Shapiro and Kolmogorow-Smirnov tests were implemented to determine whether the data exhibited normal distribution. The data that exhibited normal distribution were evaluated with parametric tests (independent sample *t* test vs analysis of variance), and the data that did not exhibit normal distribution were evaluated with nonparametric tests (Mann-Whitney *U* vs the Kruskal-Wallis test). A value of $P < .05$ was accepted for the meaningfulness level of the statistical tests.

Conducting reliability and validity analyses are a precondition for the determination of the psychometric properties of the FSA. Internal consistency (Cronbach's α) was used in the reliability analysis for the FSA in our study.

Explanatory and confirmatory factor analyses were used in the validity analysis of the scale. The Kaiser-Meyer-Olkin and Barlett test explained whether the data acquired from the working group complied with the exploratory factor analysis.[43,44] An explanatory factor analysis was used for the validity of the structure. The number of factors was determined for the scale with consideration of an eigenvalue for each factor of at least 1, the number of factors for which high-acceleration rapid drops occurred in the scree plot graph, the variance values (%) explained for the factors, the contribution of each additional factor to the explanation of the total variance, and the structure of the scale items. The varimax rotation method was used.

Model compliance of the item-factor structure acquired from the explanatory factor analysis was tested with a confirmatory factor analysis, and the root mean square error of approximation (RMSEA), standardized root mean square residual (RMR), and comparative fit index (CFI) compliance indices were used. Standardized RMR ≤ 0.10, CFI ≥ 0.90 was the accepted limit of compliance.[45]

To determine the cut-off value for the FSA, 814 units were derived from normal distribution with an average of 0 and a standard deviation of 0.01. Using this derived new variable, class designations were created. The cut-off value was determined by ranking the FSA values from small to large based on the class averages.

The SPSS 21.0, STATISTICA 13 DEMO, and LISREL 8.80 package programs were used in the data analysis.

3.7 | Ethical aspects of research

Maryann Fraboni gave her consent for use of the scale of FSA. Study methods were approved by the Eskisehir Osmangazi University Chair of Non-Interventional Clinical Research Ethics Committee, Eskisehir (Date: 04.01.2017; Number: 80558721/G-06). The purpose of the research were explained; written and verbal consent was obtained from all participants. Participant anonymity was guaranteed. In every phase of this study, the Declaration of Helsinki was adopted.

4 | RESULT

4.1 | Findings regarding the individual and professional characteristics of the healthcare workers

Considering the individual and professional characteristics of healthcare workers who participated in the study, the mean age was 37.96 ± 9.12, the mean number of hours worked each month was 177.63 ± 43.49 (n = 781), and the mean number of years worked in the profession was 15.36 ± 9.57. It was found that 73.3% (n = 597)

were female and 26.7% (n = 217) were male, that 93.9% (n = 764) have nuclear families, that 38.2% (n = 311) had earned a bachelor's degree, that 65.8% (n = 536) worked at state hospitals, that 67% (n = 545) worked as nurses, that 62% (n = 505) worked on call, and that 75.1% (n = 611) were satisfied with their jobs.

The top three answers that the healthcare workers who participated in the research provided were disease (63.4%; n = 516), compassion (50.5%; n = 411), and loneliness (49.4%; n = 402), and the last three answers were poverty (3.3%; n = 27), independence (2.6%; n = 21), and political power (0.9%; n = 7) for the question, "What does the concept of old age evoke for you?"

4.2 | Findings regarding the reliability and validity analysis and cut-Off value of the FSA in the sampling of healthcare workers

The reliability of the 29-item Turkish version of the FSA was determined with the internal consistency and split half method, and the Cronbach's α coefficient was found to be 0.72 (Table 1). When the items with a low total score correlation from the original FSA were excluded, no item was removed because it was seen to not affect the total Cronbach's α value for the scale.

The Kaiser-Meyer-Olkin coefficient (0.830) and Bartlett test results (χ^2 = 3689.63; SD = 406; P = .000) demonstrated that the scale was consistent with the factor analysis (Table 1). The number of factors with an eigenvalue greater than 1 was eight (Figure 1). Because the number of factors at which high-acceleration, rapid drops occurred in the scree plot graph was three and the contribution of each additional factor to the explanation of the total variance was greater than 5%, the scale, limited to three factors, accounts for approximately 30.23% of the total variance (Table 1).

As a result of the explanatory factor analysis, the FSA comprises 29 items and three subdimensions. It was seen that factor 1 (stereotypes) comprised 17 items (1, 3, 5, 7, 9, 10, 11, 13, 15, 17, 18, 19, 20, 25, 26, 27, 28), factor 2 (Discrimination) comprised eight items (2, 4, 8, 12, 14, 16, 22, 29), and factor 3 (avoidance) comprised four items (6, 21, 23, 24) (Table 1).

An RMSEA value of 0.0766, standardized RMR value of 0.08, and CFI value of 0.85 was found based on the results of the confirmatory factor analysis for the FSA (Table 1).

The cut-off value for the FSA was set as 78 as a result of the conducted analyses. Based on this, scores of 78 and above demonstrate that there is discrimination, and scores of 77 and below indicate that there is no discrimination.

4.3 | Findings regarding the evaluation of the individual and professional characteristics of healthcare workers and the total FSA score

When examining the relationship between the ages, hours worked each month, and total years spent in the profession for the

TABLE 1 Findings of reliability and validity: fit indices for the explanatory factor analysis and confirmatory factor analysis for the FSA

	Factor 1	Factor 2	Factor 3
Item 1	0.268		
Item 2		0.457	
Item 3	0.431		
Item 4		0.404	
Item 5	0.398		
Item 6			0.446
Item 7	0.479		
Item 8		0.511	
Item 9	0.458		
Item 10	0.534		
Item 11	0.539		
Item 12		0.499	
Item 13	0.547		
Item 14		0.395	
Item 15	0.590		
Item 16		0.305	
Item 17	0.425		
Item 18	0.443		
Item 19	0.476		
Item 20	0.480		
Item 21			0.495
Item 22		0.463	
Item 23			0.503
Item 24			0.431
Item 25	0.383		
Item 26	0.559		
Item 27	0.518		
Item 28	0.447		
Item 29		0.342	
Factor core values	4.613	2.443	1.708
Variance values for what is explained for the factors (%)	15.908	8.426	5.891
Total variance (%)	**30.225**		
KMO	0.830		
Bartlett test of Sphericity	χ^2 = 3689.63; SD = 406; P = .000		
RMSEA	**0.0766** (χ^2 = 1970.33; df = 377; P = .000)		
Standardized RMR	**0.08**		
CFI	**0.85**		
Cronbach's α value	0.72 (29 items)		

Note: χ^2 = chi square; df = degree of freedom; factor 1 = stereotypes; factor 2 = discrimination; factor 3 = voidance; P = significance level.
Abbreviations: CFI, comparative fit index; FSA, Fraboni scale of ageism; KMO, Kaiser-Meyer-Olkin; RMR, root mean square residual; RMSEA, root mean square error of approximation.

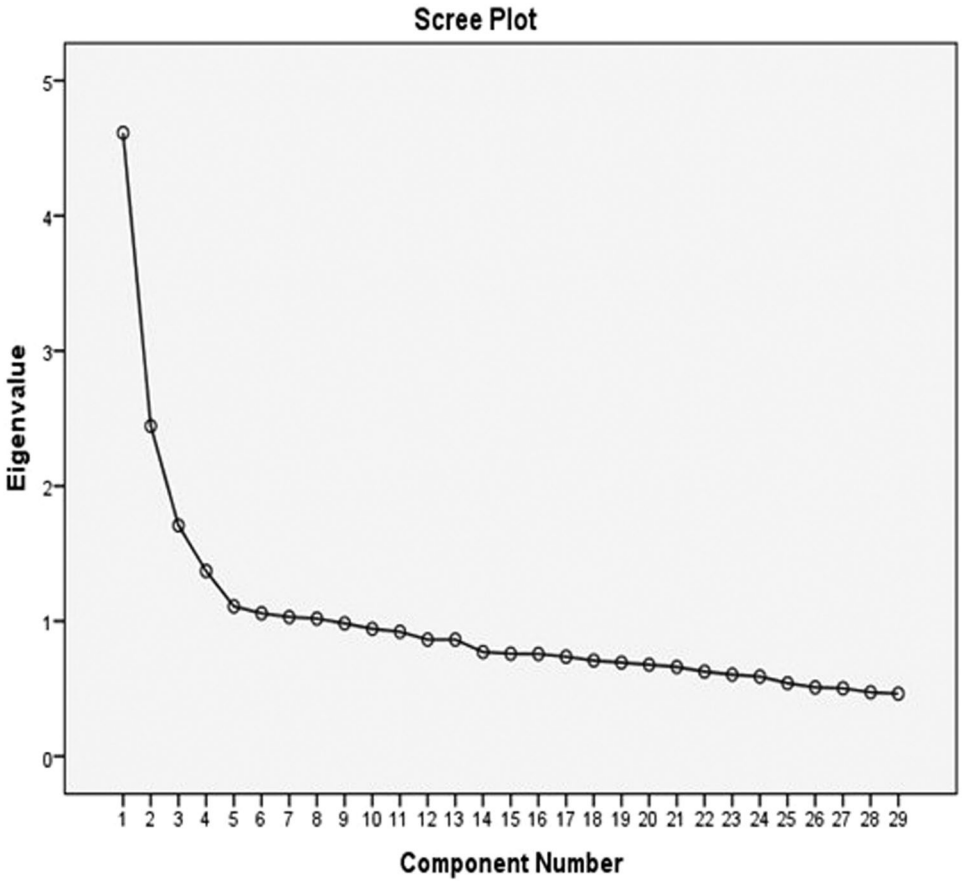

FIGURE 1 Scree plot graph Fraboni scale of ageism (FSA)

healthcare workers and the FSA, no statistically meaningful correlation was found. A comparison of the demographic characteristics of healthcare workers with the total FSA scores found that the total FSA score exhibited a statistically meaningful difference based on sex ($P = .000$), family type ($P = .018$), duty in the hospital ($P = .000$), institution of employment ($P = .000$), form of employment ($P = .001$), status of job satisfaction ($P = .000$), and education status ($P = .000$). Accordingly, it was found that women, those who live in nuclear families, nurses, employees at state hospitals, employees working on call, employees unsatisfied with their jobs, and people with levels of education at a bachelor's degree and below engaged in discrimination (Table 2).

5 | DISCUSSION

Due to improvements in quality of life (better eating, safer and cleaner water, etc.) and changes in the healthcare sector (vaccinations, technological advancements, etc.), the growing elderly population around the world has become an unavoidable truth, and it is predicted that elderly individuals will have a greater demand for healthcare services. This means that healthcare workers will interact more with the elderly population. This increase in the elderly population leads to a series of changes correlated to the needs of elderly adults and the behaviors and attitudes of the remaining population toward them. Ageism can appear at the individual, interpersonal, and societal level.[46] Although most people are not aware that these stereotypes are deeply entrenched in their systems of belief, discriminatory attitudes and behaviors are everywhere. The prolongation of negative generalizations about aging unfortunately lead to both individual and societal acceptance.

Healthcare services are critical for elderly individuals' effective maintenance of their lives. As a result of cellular loss with age, the functioning capacity of organs in old age, the motor skills of elderly individuals, and cognitive capacities can decrease, chronic illness can appear more frequently, and elderly individuals struggle to cope with problems in their daily lives. Elderly individuals therefore have greater need for support in healthcare services.[47] Discrimination toward elderly individuals included in the healthcare system is a paramount obstruction to meeting the needs of the elderly.[3] While referring elderly individuals to healthcare services and their utilization of these services positively affects their lives, the lives of elderly individuals who do not wish to refer to healthcare services due to discrimination they face negatively impacts their lives.[3]

People think that elderly patients have no cognitive capabilities, have sensory dysfunction, or have low healthcare literacy and, therefore, are unable to understand their health conditions.[48] Elderly individuals may adjust their own behaviors to comply with the

TABLE 2 A comparison of the total scores from the FSA with the demographic characteristics of healthcare workers

		n	%	Mean	SD	t[a] F[b]	P	
Sex	Female	597	73.3	78.85	11.47	3.596[a]	**.000**	
	Male	217	26.7	75.55	11.84			
Family type	Nuclear family	764	93.9	78.22	11.65	2.379[a]	**.018**	
	Large family	50	6.1	74.18	11.16			
Position	Nurse	545	67.0	79.33	11.35	4.823[a]	**.000**	
	Physician	269	33.0	75.20	11.79			
Institution of employment	State hospital	536	65.8	79.00	11.90	3.518[a]	**.000**	
	University hospital	278	34.2	75.99	10.92			
Form of work	On call	505	62.0	78.99	11.85	−3.228[a]	**.001**	
	Not on call	309	38.0	76.29	11.14			
Are you satisfied with your job?	Yes	611	75.1	77.01	11.61	−4.112[a]	**.000**	
	No	203	24.9	80.85	11.31			
Education status	High school (1)	59	7.2	81.00	10.19	9.576[b]	**.000**	Binary difference
	Associate's degree (2)	139	17.1	78.53	10.99			1 > 4 (*P* = .003)
	Bachelor's degree (3)	311	38.2	79.77	11.90			
	Master's degree or higher (4)	305	37.5	75.29	11.47			2 > 4 (*P* = .030)
								3 > 4 (*P* = .000)

Note: P = significance level.
Abbreviations: ANOVA, analysis of variance; FSA, Fraboni scale of ageism.
[a]*t* (*T*-test).
[b]F (ANOVA).

negative believes that others have, and this appearance negatively influences the experiences of elderly individuals with aging and leads to less active aging.[49,50] More scientific research should be done about ageism, because many beliefs about elderly individuals negatively influence perceptions of elderly people and their health, welfare, and lifestyle habits.[51-54] These beliefs determine the behaviors of elderly individuals, other people, and healthcare professionals.[55-59] The attitudes and perceptions of healthcare providers influence the elderly individuals who receive healthcare services.[60] Shin et al[48] correlated an increase in experiences with ageism to a higher depression score and, in terms of physical, emotional, and cognitive fields, a lower quality of life,[48] and Schroyen et al[61] found evidence that these experience engender low self-respect.

It is thought that the determination of the psychometric properties and especially the cut-off value for a scale provide significant contributions to the literature. In this context, the results of the measurements taken for the FSA demonstrate that the internal consistency of the scale is quite reliable, that the dataset was fully consistent for the factor analysis, that the number of factors was limited to three because the total variance percentages for the first three factors in our study was greater than 5% and because the breaking points for the high-acceleration rapid drops in the scree plot graph gradually decreased after the third factor, and that these three factors explained accounted for 30.23% of the total variance. It was seen in the literature that the Cronbach's α values for studies conducted using the FSA ranged between 0.71 and 0.91.[29,41,62-67] Although the Cronbach's α value is higher than this study in some other studies, they exhibit similarities with our study, and the FSA is a reliable scale.

According to the results of a study by Rupp et al,[68] individuals' approval of the three-factor structure, these three factors accounting for approximately 36.4% of the total variance, and an RMSEA of 0.062 demonstrates similarity to our study.[68]

It is important that the results of the conducted measurement be evaluated with a criterion created within the references. This evaluation helped scientists arrive at a positive or negative value judgement regarding the topic. There must be upper and lower limit values in which the measurement results are compared with be able to conduct an evaluation. The upper and lower limits created to prove whether there are changes regarding the researched topic and, if they did form, to prove what level they are at are defined as the "cut-off values." Based on the cut-off value, the researched topic can be classified as positive or negative or as planar. The cut-off value distinguishes whether the participants mentioned in the researched topic are at an adequate level. The cut-off value for the FSA was determined as 78 as a result of the conducted analyses. Based on this, scores of 78 and above demonstrate that there is discrimination, and scores of 77 and below indicate that there is no discrimination. This acquired cut-off value provides ease in determining whether healthcare workers engage in discrimination.

It was seen in the literature that the scores for the FSA varied between 51 and 120 in studies conducted with nurses.[25,29,64-66,69-75] Some of the findings in the literature, like our study, determined that women[25,65,76-78] and people with nuclear families discriminated[76,79-81]

that university graduates discriminated less,[25] and that discrimination decreased as education level increased.[81] Previous studies have found that healthcare workers who interact one-on-one with elderly individuals have more negative stereotypes than workers in other sectors.[82-85] Research has reported that nurses and other healthcare workers tend to provide inadequate care or treatment for elderly individuals relative to youth,[61,86] and that they provide inadequate care because they attribute the physiological problems elderly individuals face to the incidental consequences of aging.[86] Some previous research exhibits similarities to our study while others differ. This difference is thought to originate from cultural characteristics.

Aging plays a role as a chronic stress factor leading to a decrease in physical health and participation in healthy behaviors.[87,88] Previous studies have reported that approximately 10% of people aged 50 and older experience discrimination due to their age in a medical environment[87] and that these sorts of experiences lead to a decrease in trust in physicians, dissatisfaction with healthcare services, and a decrease in health-protective behaviors (low possibility of receiving an influenza vaccine).[90] The bodies of elderly individuals who have experienced ageist discrimination may interpret these negative experiences as social stressors, and such experiences can directly affect health through hypothalamic-hypophysis-adrenal activation, and this, in turn, can lead to the secretion of cortisol and an increase in systemic inflammation.[91] Perceived ageism has well-known and negative impacts on mental health.[92,93] Ageism makes people feel alone,[94] leads to symptoms of depression,[95] and may be an element of stress for which individuals are unable to develop effective coping mechanisms.[96] Shin et al[48] reported in their study that of the 1943 elderly individuals who said that they had experienced ageist discrimination 1406 received disrespectful and unkind treatment, 877 were treated as if they were not intelligent, 804 received poorer services in a medical environment or received unsuitable or inadequate treatment, and 357 were threatened or harassed; and that physicians acted unwilling to explain diagnoses or prognoses to elderly patients.[48] The same study stated that of the patients who reported having encountered ageist discrimination, 12.3% did not receive information about the status of their disease because of their old age, 11% did not receive information about their treatment, 10.7% were not allowed to actively participate in treatment decisions, and 6.2% did not receive adequate interest from healthcare workers; and stated that experiences with ageism increase with age.[48] It also reported that healthcare workers prefer to work with younger generations.[97,98]

Various studies have been conducted in Turkey about the attitudes of healthcare workers and social workers toward the elderly in the context of healthcare services.[18,99-103] Uğurlu et al[104] determined that the attitudes of healthcare workers toward the elderly are generally positive.[104] Other research has revealed that doctors and nurses have positive attitudes toward the elderly.[21,105-111] The fact that the general conclusion in research conducted in Turkey is that healthcare workers have positive attitudes toward elderly individuals may originate from the appearance of the elderly as individuals who are valued, wise, and respected by society. It has reported that elderly individuals are generally accepted as a burden to society,[112] are generally identified with negative concepts, such as unproductive and useless, and for this reason suffer discrimination.[1,6] In this regard, the perception and attitude of society toward the elderly may be influential in the acceptance of elderly individuals and the attitudes of others in society toward the elderly. Healthcare workers can be swayed by the perceptions, attitudes, beliefs, and norms of the society in which they live. The diversity of services that healthcare workers present for elderly individuals, the quality of healthcare services presented, and the attitudes and perceptions of healthcare workers toward the elderly play a determinant role in elderly individuals' utilization of healthcare services.

5.1 | Limitations

The results of the research are limited to the data acquired from the nurses and physicians working at the university hospital and state hospital providing services in the province where the application was conducted and the dates on which the study was conducted. Healthcare workers in other provinces or countries or who are employed at nursing homes or non hospital environments cannot be generalized with these results. The frequency at which healthcare workers care for elderly patients was not determined.

6 | CONCLUSION

The attitudes and perceptions of healthcare providers influence the elderly individuals who receive healthcare services. Elderly individuals who has faced discrimination is unable to benefit from many offered services and opportunities. This in turn negatively affects their quality of life. It is important that healthcare individuals providing services to elderly individuals, who constitute a fragile group, exhibit a demeanor of nondiscrimination in the services they provide primarily so that these elderly individuals benefit from these healthcare services.

It was concluded that the Turkish adaptation of the FSA was an appropriate tool to measure the ageism of healthcare workers as a result of the reliability and validity analyses conducted for the 29-item Turkish version of the FSA, that the cut-off value was 78, that healthcare workers who received scores of 78 or higher discriminated, and that healthcare workers who received scores below 77 or lower did not discriminate.

The recommendation for future research is to study the behaviors of ageism and the factors that influence these behaviors in a wider sampling group and in different populations using the FSA.

7 | IMPLICATION FOR NURSING PRACTICE

Due to improvements in quality of life (better eating, safer and cleaner water, etc.) and changes in the healthcare sector

(vaccinations, technological advancements, etc.), developing in the modern world have increased the average life expectancy and, based on this, the elderly population by prolonging human life. The increase in the elderly population has brought ageism, a problem that emerges later in life. And among the domains in which dispositions regarding ageism are seen the most come systems of healthcare. It is thus impModeratent to evaluate the attitudes of healthcare workers toward healthcare workers in terms of ageism. Various scales are used to identify ageism. Intercultural adaptation studies have been conducted for the FSA—one of these studies—but no cut-off value has been determined. This study is impModeratent in terms of reconducting the intercultural adaptation of the FSA in healthcare worker samples, determining the cut-off value for the first time and increasing the generalization ability of data collected based on this, allowing for the research of similarities and differences between the societies in which the scale is administered, allowing scientists to access a positive or negative value judgement regarding the issue, and proving whether changes formed regarding the issue and the extent to which such changes formed. It is thought that the results of this study will allow nurses, who most frequently encounter and interact with elderly individuals during presented healthcare services, and other healthcare workers conduct multicultural and multicentered researched in the globalized world and will contribute to the international collaboration of researchers.

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REFERENCES

1. Palmore EB. *Ageism: Negative and Positive*. New York: Springer Publishing Company; 1999.
2. WHO. (2018). Ageing and health. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health
3. Yildirim F, Oztas D, Urgun S (2019). Ageism in Turkish Health Care System from "Ecological System Approach". Paper presented at the 2nd International Conference on Research in Social Sciences, Vienna, Austria.
4. TUIK. (2018). Elderly statistics [Press release]. http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=27595
5. TUIK. (2016). Life expectancy at birth in European countries by sex. http://www.turkstat.gov.tr/PreIstatistikTablo.do?istab_id=2296
6. Butler RN. Age-Ism: another form of bigotry. *Gerontologist*. 1969;9(4):243-246. https://academic.oup.com/gerontologist/article-abstract/9/4_Part_1/243/569551?redirectedFrom=fulltext
7. Butler RN. Ageism. In: Schulz R, ed. *The Encyclopedia of Aging*. New York: Springer Publishing Company; 2006:41-42.
8. Lewis TT, Barnes LL, Bienias JL, Lackland DT, Evans DA, Leon CFM. Perceived discrimination and blood pressure in older African Americans and white adults. *J Gerontol Med Sci*. 2009;64A(9):1002-1008. https://academic.oup.com/biomedgerontology/article-abstract/64A/9/1002/557327
9. Usta YY, Demir Y, Yonder M, Yildiz A. Nursing students' attitudes toward ageism in Turkey. *Arch Gerontol Geriat*. 2012;54(1):90-93. https://doi.org/10.1016/j.archger.2011.02.002
10. Kaker DJ, Ovsenik M, Zupančič J. Attitudes of social gerontology and physiotherapy students towards the elderly. *Organizacija*. 2016;49(1):55-69. https://doi.org/10.1515/orga-2016-0002
11. Kandelman N, Mazars T, Levy A. Risk factors for burnout among caregivers working in nursing homes. *J Clin Nurs*. 2018;27(1-2):e147-e153. https://doi.org/10.1111/jocn.13891
12. Kaptanoglu AY, Demir T. Examining job satisfaction among perfusionists: a brief report from Istanbul. *J Pak Med Assoc*. 2013;63(9):1157-1162.
13. Anil M, Yurtseven A, Yurtseven İ, et al. The evaluation of burnout and job satisfaction levels in residents of pediatrics. *Turkish Archives of Pediatrics*. 2017;52(2):66-71. https://doi.org/10.5152/TurkPediatriArs.2017.4982
14. Ozcakar N, Kartal M, Dirik G, Tekin N, Guldal D. Burnout and relevant factors in nursing staff: what affects the staff working in an elderly nursing home?*Turk J Geriatr*. 2012;15(3):266-272.
15. Serpen AS, Purutcuoglu E. Social work students attitudes toward elderly people: samle of Ankara University. *Eurasia Proc Educ Soc Sci*. 2017;7:175-182. https://dergipark.org.tr/tr/pub/epess/issue/30770/337260
16. Elbi H, Altan S, Rahman S, Cengiz Ozyurt B, Sahin S, Cam FS. The attitudes of medical students toward the elderly. *Turk J Geriatr*. 2015;18(4):299-304. http://eds.a.ebscohost.com/eds/pdfviewer/pdfviewer?vid=0&sid=867ed452-41b7-45f3-82cc-4cc3672787ff%40sdc-v-sessmgr02
17. Mohammed RF, Omar AAA. Knowledge about elderly care and its relation to ageism attitude among undergraduate nursing students. *Am J Nurs Res*. 2019;7(1):73-78. https://doi.org/10.12691/ajnr-7-1-10
18. Ozdemir O, Bilgili N. Ageism in health care. *Gulhane Med J*. 2014;56(2):128-131.
19. Dincer Y, Usta E, Bulduk S. How do university students view elderliness? *Elderly Issues Res J*. 2016;9(1):26-38.
20. Ceylan H, Oksuz M. Analyzing attitudes of undergraduate social work students towards ageism. *J Int Soc Res*. 2015;8(39):459-466.
21. Duru Asiret G, Kaymaz Turten T, Canbolat O, Kapucu S. Attitudes of nurses towards older people. *J Res Dev Nurs*. 2015;17(1):10-20.
22. Kissal A, Okan F. Attitudes of health care workers working at family health centers in tokat towards ageism. *Turk J Family Prac*. 2018;22(4):202-212. https://doi.org/10.15511/tahd.18.00494
23. Strugala M, Talarska D, Wysocki J. Attitudes towards the elderly among nursing students in Poland—initial findings. *J Gerontol Geriatr Res*. 2016;5(1):1-8. https://doi.org/10.4172/2167-7182.1000279
24. Doherty M, Mitchell EA, O'Neill S. Attitudes of healthcare workers towards older people in a rural population: a survey using the Kogan scale. *Nurs Res Pract*. 2011;2011:1-7. https://doi.org/10.1155/2011/352627
25. Arun O, Pamuk D. Ageism in institutional care: causes of the discriminatory attitudes of older care staffs towards ageing and old age and intervention strategies. *Mediterr J Humanit*. 2014;4(2):19-33. http://www.academia.edu/download/39544861/OzgurARUN-DenizPAMUK_AGEISM.pdf
26. Cañadas-De la Fuente GA, Vargas C, San Luis C, García I, Cañadas GR, De la Fuentea EI. Risk factors and prevalence of burnout syndrome in the nursing profession. *Int J Nurs Stud*. 2015;52(1):240-249. https://doi.org/10.1016/j.ijnurstu.2014.07.001
27. WHO. *World Report on Ageing and Health*. World Health Organization; 2015.
28. Ayalon L, Dolberg P, Mikulionienė S, et al. A systematic review of existing ageism scales. *Ageing Res Rev*. 2019;54:100919. https://doi.org/10.1016/j.arr.2019.100919
29. 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(1):56-66. https://doi.org/10.1017/S0714980800016093
30. Barker M, O'Hanlon A, McGee HM, Hickey A, Conroy RM. Cross-sectional validation of the aging perceptions questionnaire: a multidimensional instrument for assessing self-perceptions of aging. *BMC Geriatr*. 2007;7(9):1-13. https://doi.org/10.1186/1471-2318-7-9
31. Laidlaw K, Power M, Schmidt S. The attitudes to ageing questionnaire (AAQ): development and psychometric properties. *Int J Geriatr Psychiatry*. 2007;22(4):367-379. https://doi.org/10.1002/gps.1683

32. Lasher KP (1989). *Development and Initial Validation of the Anxiety about Aging Scale*. (PhD). The University of Southern Mississippi, Mississsipi.
33. Vefikulucay D (2008). *Attitudes of University Students Towards Ageism*. (PhD Thesis). Hacettepe University, Ankara.
34. Cary LA, Chasteen AL, Remedios J. The ambivalent ageism scale: developing and validating a scale to measure benevolent and hostile ageism. *Gerontologist*. 2017;57(2):27.
35. Cherry KE, Palmore E. Relating to older people evaluation (ROPE): a measure of self-reported ageism. *Educ Gerontol*. 2008;34(10): 849-861. https://www.tandfonline.com/doi/abs/10.1080/03601270802042099
36. Kogan N. Attitudes towards old people: the development of a scale and examination of correlates. *J Abnorm Psychol*. 1961;62:44-54. https://psycnet.apa.org/record/1962-04635-001
37. Maxwell AJ, Sullivan N. Attitudes toward the geriatric patient among family practice residents. *J Am Geriatr Soc*. 1980;28(8):341-345.
38. North MS, Fiske ST. Modern attitudes toward older adults in the aging world: a cross-cultural meta-analysis. *Psychol Bull*. 2015; 141(5):993-1021.
39. Palmore EB. The ageism survey: first findings. *Gerontologist*. 2001;41(5). 572. https://academic.oup.com/gerontologist/article-abstract/41/5/572/596570
40. Reuben DB, Lee M, Davis JWJ, et al. Development and validation of a geriatrics attitudes scale for primary care residents. *J Am Geriatr Soc*. 1998;46(11):1425-1430.
41. Kutlu Y, Kucuk L, Yildiz Findik U. Psychometric properties of the turkish version of the fraboni scale of ageism. *Nurs Health Sci*. 2012;14(4): 464-471. https://onlinelibrary.wiley.com/doi/full/10.1111/j.1442-2018.2012.00717.x
42. Gurbuz S, Sahin F. *Sosyal Bilimlerde Araştırma Yöntemleri [Research Methods in Social Sciences]*. 5th ed.Ankara: Seckin; 2018.
43. Buyukozturk S, Kilic Cakmak E, Akgun OE, Karadeniz S, Demirel F. *Bilimsel Araştırma Yöntemleri [Scientific Research Methods]*. 24th ed.Ankara: Pegem Publishing; 2018.
44. Cokluk O, Sekercioglu G, Buyukozturk S. *Sosyal Bilimler için çok Değişkenli Istatistik: SPSS ve Lisrel uygulamalar [Multivariate statistics for social sciences: SPSS and Lisrel applications]*. 5th ed.Ankara: Pegem Publishing; 2018.
45. Ozdamar K. Ölçek ve test geliştirme yapısal eşitlik modellemesi, IBM SPSS, IBM SPSS AMOS ve MINITAB uygulamalı. [Scale and test development, structural equation modeling, IBM SPSS, IBM SPSS AMOS and MINITAB applied]. Eskisehir: Nisan Publishing; 2017.
46. Ayalon L, Tesch-Romer C. *Contemporary Perspectives on Ageism*. Springer International Publishing; 2018.
47. Buz S. Age discrimination against elderly persons. *Electron J Soc Sci*. 2015;14(53):268-278. https://doi.org/10.17755/esosder.89453
48. Shin DW, Park K, Jeong A, et al. Experience with age discrimination and attitudes toward ageism in older patients with cancer and their caregivers: a nationwide Korean survey. *J Geriatr Oncol*. 2019;10(3): 459-464. https://doi.org/10.1016/j.jgo.2018.09.006
49. Brier MJ, Chambless DL, Chen J, Mao JJ. Ageing perceptions and non-adherence to aromatase inhibitors among breast cancer survivors. *Eur J Cancer*. 2018;91:145-152.
50. Fernández-Ballesteros R, Olmos R, Santacreu M, et al. Assessing aging stereotypes: personal stereotypes, self-stereotypes, and self-perception of aging. *Psicothema*. 2017;29(4):482-489.
51. Chasteen AL, Pichora-Fuller MK, Dupuis K, Smith S, Singh G. Do negative views of aging influence memory and auditory performance through self-perceived abilities? *Psychol Aging*. 2015;30(4):881-893. https://doi.org/10.1037/a0039723
52. Chrisler JC, Barney A, Palatino B. Ageism can be hazardous to women's health: ageism, sexism, and stereotypes of older women in the healthcare system. *J Soc Issues*. 2016;72(1):86-104. https://doi.org/10.1111/josi.12157
53. Luo Y, Xu J, Granberg E, Wentworth WM. A longitudinal study of social status, perceived discrimination, and physical and emotional health among older adults. *Res Aging*. 2012;34(3):275-301. https://doi.org/10.1177/0164027511426151
54. Lyons A, Alba B, Heywood W, et al. Experiences of ageism and the mental health of older adults. *Aging Ment Health*. 2018;22(11): 1456-1464.
55. Bustillos A, Ballesteros RF. Attributions of competence mediate the behaviors of caregivers and older adults. *GeroPsych*. 2013;26(4): 211-217. https://doi.org/10.1024/1662-9647/a000089
56. Chalabaev A, Emile M, Corrion K, et al. Development and validation of the aging stereotypes and exercise scale. *J Aging Phys Act*. 2013; 21(3):319-334. https://doi.org/10.1123/japa.21.3.319
57. Fuentes C. Managing green complexities: consumers' strategies and techniques for greener shopping. *Int J Consum Stud*. 2014;38(5):485-492.
58. Kornadt AE, Rothermund K. Views on Aging. In: Annual Review of Gerontology and Geriatrics, Subjective Aging: New Developments and Future Directions. Vol 35.2015:121.
59. Rivera LM, Paredez SM. Stereotypes can "get under the skin": testing a self-stereotyping and psychological resource model of overweight and obesity. *J Soc Issues*. 2014;70(2):226-240. https://doi.org/10.1111/josi.12057
60. Ouchida KM, Lachs MS. Not for doctors only: ageism in healthcare. *Generations*. 2015;39(3):46-57.
61. Schroyen S, Missotten P, Jerusalem G, Van den Akker M, Buntinx F, Adam S. Association between self-perception of aging, view of cancer and health of older patients in oncology: a one-year longitudinal study. *BMC Cancer*. 2017;17(614):1-8. https://doi.org/10.1186/s12885-017-3607-8
62. Gendron TL, Lydecker J. The thin-youth ideal: should we talk about aging anxiety in relation to body image?*Int J Aging Hum Dev*. 2016; 82(4):255-270.
63. Kennison SM, Byrd-Craven J. Childhood relationship with mother as a precursor to ageism in young adults. *Curr Psychol*. 2018:1-9. https://doi.org/10.1007/s12144-018-9838-2
64. Lassonde KA, Surla C, Buchanan JA, O'Brien EJ. Using the contradiction paradigm to assess ageism. *J Aging Stud*. 2012;26(2):174-181. https://www.sciencedirect.com/science/article/abs/pii/S0890406511000909
65. Luo B, Zhou K, Jin EJ, Newman A, Liang J. Ageism among college students: a comparative study between U.S. and China. *J Cross Cult Gerontol*. 2013;28(1):382-385.
66. Pavlovic M, Puric D. Basic personality traits as correlates of implicit prejudice. *Primenjena Psihologija*. 2016;9(2):125-140. http://primenjena.psihologija.ff.uns.ac.rs/index.php/pp/article/view/1777
67. Popham LE, Kennison SM, Bradley KI. Ageism, sensation-seeking, and risk-taking behavior in young adults. *Curr Psychol*. 2011;30:184-193. https://idp.springer.com/authorize/casa?redirect_uri=https://link.springer.com/article/10.1007/s12144-011-9107-0&casa_token=SavnDs1k7wYAAAAA:6yAup5lFctdDFVkgPgh34jKiFwsbcvlPjuJb5RHk-N8xfuscYObO2liCuJPPY5q5vDiMApl_yW6cQ7xR
68. Rupp DE, Vodanovich SJ, Crede M. The multidimensional nature of ageism: construct validity and group differences. *J Soc Psychol*. 2005; 145(3):335-362.
69. Stuart-Hamilton I, Mahoney B. The effect of aging awareness training on knowledge of, and attitudes towards, older adults. *Educ Gerontol*. 2003;29(3):251-260. https://www.tandfonline.com/doi/abs/10.1080/713844305
70. Vowels MR, Crandall KJ. A descriptive study of exercise science students' knowledge of, and attitudes toward, older adults. *Kentucky Assoc Health Phys Educ Recreation Dance J*. 2014;52:66-73. https://www.researchgate.net/profile/Steve_Chen16/publication/283723122_Banbel_M_Chen_S_2014_Academic_tutoring_program_and_services_for_supporting_collegiate_student-athletes_KAHPERD_Journal_512_52-65_Retrieved_from_httpwwwkahperdcommainJournals/links/566f366208aec0bb67bf0890.pdf#page=66

71. Widrick RM, Raskin JD. Age-related stigma and the golden section hypothesis. *Aging Ment Health*. 2010;14(4):375-385.
72. Hughes A, Bolar T, Kennison SM. Ageism, illegal drug use, and young adults' experiences with illness, dementia, and death. *J Articles Support Null Hypothesis*. 2016;13(1):15-24. http://www.jasnh.com/pdf/Vol13-No1-article2.pdf
73. Kabatova O, Botikova A, Urickova A, Slany J. Difference in the level of ageist attitudes of nurses and nursing students. *Kontakt*. 2015;17(3):138-141. https://www.sciencedirect.com/science/article/pii/S1212411715000355
74. Mueller-Johnson K, Toglia MP, Sweeney CD, Ceci SJ. The perceived credibility of older adults as witnesses and its relation to ageism. *Behav Sci Law*. 2007;25:355-375.
75. Nash P, Stuart-Hamilton I, Mayer P. The continuation of prejudice: addressing negative attitudes in nurse training and continuing professional education. *Educ Gerontol*. 2014;40(1):53-60. https://doi.org/10.1080/03601277.2013.768084
76. Gocer S (2012). Determination of attitudes regarding old age and ageism in individuals living together with an aged person at county Hacilar. (MS Thesis). Erciyes University, Kayseri.
77. Aosved AC, Long PJ. Co-occurrence of rape myth acceptance, sexism, racism, homophobia, ageism, classism, and religious intolerance. *Sex Roles*. 2006;55(7-8):481-492. https://link.springer.com/article/10.1007/s11199-006-9101-4
78. Ozkan Y, Bayoglu AS. Ageism: college students' perceptions about older people. *E-J New World Sci Acad*. 2011;6(1):107-115. http://dergipark.gov.tr/download/article-file/187113
79. Alkan A (2013). In the context of patients a study on discriminative attitudes and behaviour of hospital staff directed to patients. (Master Thesis). Suleyman Demirel University, Isparta.
80. Liu YE, While AE, Norman IJ, Ye W. Health professionals' attitudes toward older people and older patients: a systematic review. *J Interprof Care*. 2012;26(5):397-409.
81. Rajendra K (2015). *Ageism and gerontophobia in Indian context an empirical study with special reference to Udupi district*. Kuvempu University, India. http://hdl.handle.net/10603/203252
82. Duran-Badillo T, Miranda-Posadas C, Cruz-Barrera LG, Martínez-Aguilar Md l L, Gutiérrez-Sanchez G, Aguilar-Hernandez RM. Negative stereotypes about old age in college nursing students. *Revista de Enfermería del Instituto Mexicano del Seguro Social*. 2016;24(3):205-209.
83. Fernandez E, Monardes H, Diaz C, Fuentes F, Padilla P. «Ageism» as social problem in geriatrics: regarding the measurement of ageism in dentistry students. *Rev Esp Geriatr Gerontol*. 2017;52(2):109. https://doi.org/10.1016/j.regg.2016.08.003
84. Sandoval WD, Galindo MCE, Figueroa DGI, Pulido MSV, Ruvalcaba NMM. Ideas sobre la vejez en estudiantes de ciencias de la salud del centro universitario de Tonalá. *Investigación y Práctica en Psicología del Desarrollo*. 2015;1:237-243. https://doi.org/10.33064/ippd1653
85. Sarabia-Cobo C, Pfeiffer CC. Changing negative stereotypes regarding aging in undergraduate nursing students. *Nurse Educ Today*. 2015;35(9):e60-e64. https://doi.org/10.1016/j.nedt.2015.06.006
86. DeBrew JK. Partners in learning: a collaborative model to increase the number of baccalaureate-prepared nurses. *Teach Learn Nurs*. 2018;13(4):254-257. https://doi.org/10.1016/j.teln.2018.07.001
87. Allen JO. Ageism as a risk factor for chronic disease. *Gerontologist*. 2015;56(4):610-614. https://doi.org/10.1093/geront/gnu158
88. Nelson TD. The age of ageism. *J Soc Issues*. 2016;72(1):191-198. https://doi.org/10.1111/josi.12162
89. Hooker K, Phibbs S, Irvin VL, et al. Depression among older adults in the United States by disaggregated race and ethnicity. *Gerontologist*. 2018;59(5):886-891. https://doi.org/10.1093/geront/gny159
90. Abdou CM, Fingerhut AW, Jackson JS, Wheaton F. Healthcare stereotype threat in older adults in the health and retirement study. *Am J Prev Med*. 2016;50(2):191-198. https://doi.org/10.1016/j.amepre.2015.07.034
91. Goosby BJ, Cheadle JE, Mitchell C. Stress-related biosocial mechanisms of discrimination and African American health inequities. *Annu Rev Sociol*. 2018;44:319-340. https://doi.org/10.1146/annurev-soc-060116-053403
92. Ayalon L. Between older adults' needs and the law: The Israeli long term care insurance law from the perspectives of service users and providers. *Health Soc Care Community*. 2018;26(4):e514-e522. https://doi.org/10.1111/hsc.12563
93. Shippee TP, Wilkinson LR, Schafer MH, Shippee ND. Long-term effects of age discrimination on mental health: The role of perceived financial strain. *J Gerontol Series B*. 2019;74(4):664-674. https://doi.org/10.1093/geronb/gbx017
94. Lee Y, Bierman A. Loneliness as a mediator of perceived discrimination and depression: examining education contingencies. *Int J Aging Hum Dev*. 2019;89(2):206-227. https://doi.org/10.1177/0091415018763402
95. Han J, Richardson VE. The relationships among perceived discrimination, self-perceptions of aging, and depressive symptoms: a longitudinal examination of age discrimination. *Aging Ment Health*. 2015;19(8):747-755. https://doi.org/10.1080/13607863.2014.962007
96. Moorman SM, Stokes JE. Solidarity in the grandparent-adult grandchild relationship and trajectories of depressive symptoms. *Gerontologist*. 2016;56(3):408-420. https://doi.org/10.1093/geront/gnu056
97. Yechezkel R, Ayalon L. Social workers' attitudes towards intimate partner abuse in younger versusolder women. *J Fam Violence*. 2013;28(4):381-391. https://doi.org/10.1007/s10896-013-9506-0
98. Lee JE, Goo A, Shin DW, Yoo JH. Korean medical professionals' attitudes and experiences on advance care planning for noncancerous disease. *Ann Geriatr Med Res*. 2019;23(2):63-70. https://doi.org/10.4235/agmr.19.0010
99. Islam MR. Ageism and age discrimination in old age: an overview. *Philosophy and Progress, LV-LVI*. 2014:91-108. https://doi.org/10.3329/pp.v55i1-2.26392
100. Altay B, Aydin T. Evaluation of attitudes of nursing students towards ageism. *J Educ Res Nurs*. 2015;12(1):11-18.
101. Ozates Gelmez ÖS. Social work students' stereotypes of ageing: exploration and transformation. *J Sociol Res*. 2019;22(1):157-188. https://doi.org/10.18490/sosars.559101
102. Pekcetin S. Ageist attitudes and their association with burnout and job satisfaction among nursing staff: a descriptive study. *Turk J Geriatr*. 2018;21(1):25-32. https://doi.org/10.31086/tjgeri.2018137963
103. Sahin H, Demirel B. Determination of the attidtudes about elderliness and aging of the social work students. *J Int Soc Res*. 2018;11(59). https://doi.org/10.17719/jisr.2018.2720
104. Ugurlu Z, Kav S, Karahan A, Akgun Citak E. Correlates of ageism among health care professionals working with older adults. *J Transcult Nurs*. 2019;30(3):303-312. https://doi.org/10.1177/1043659618810128
105. Tufan F, Yuruyen M, Kizilarslanoglu MC, et al. Geriatrics education is associated with positive attitudes toward older people in internal medicine residents: a multicenter study. *Arch Gerontol Geriat*. 2015;60(2):307-310. https://doi.org/10.1016/j.archger.2014.12.004
106. Bulut E (2015). *Attitudes of surgical nurses towards ageism*. (Master Science). Blacksea Technical University, Trabzon. (415149)
107. Adibelli D, Kilic D. Difficulties experienced by nurses in older patient care and their attitudes toward the older patients. *Nurse Educ Today*. 2013;33(9):1074-1078. https://doi.org/10.1016/j.nedt.2012.04.002

108. Kavlak Y, Yildiz S, Akin Tug O. Nurses' attitudes towards older people: report from a single institution study. *Int J Phys Med Rehab*. 2015;3(5): 1000296. https://doi.org/10.4172/2329-9096.1000296
109. Pehlivan S, Vatansever N. Attitudes of nurses towards the elderly and affecting factors. *J Uludag Univ Med Fac*. 2019;45(1):47-53. https://doi.org/10.32708/uutfd.468622
110. Polat U, Karadag A, Ulger Z, Demir N. Nurses' and physicians' perceptions of older people and attitudes towards older people: ageism in a hospital in Turkey. *Contemp Nurse*. 2014;48(1):88-97. https://doi.org/10.1080/10376178.2014.11081930
111. Seferoglu M, Yildiz D, Pekel NB, Gunes A, Yildiz A, Tufan F. Attitudes of neurology specialists toward older adults. *Aging Clin Exp Res*. 2017;29(4):787-792. https://doi.org/10.1007/s40520-016-0606-6
112. Georgantzi N. The European union's approach towards ageism. *Contemporary Perspectives On Ageism*. 19. Cham: Springer; 2018: 341-368.

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