

## ORIGINAL ARTICLE

# Beyond the stethoscope: ageism in white coats and resident physicians' preferences for elderly patient care

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## Abstract

**Background:** The global increase in life expectancy has significantly raised the elderly population. In Türkiye, the proportion of individuals aged 65 and over rose from 8.8% in 2018 to 10.2% in 2023. This demographic shift necessitates the planning of social and health services for the elderly. Ageism affects elderly health negatively and is prevalent in healthcare settings. This study aimed to determine the prevalence of ageism among resident physicians at Pamukkale University Hospital and identify factors influencing their preferences for providing healthcare to elderly patients.

**Methods:** This cross-sectional study was conducted at Pamukkale University Hospital between 6 June and 16 June, 2024. A total of 448 resident physicians were selected through simple random sampling. Data were collected using a self-administered questionnaire, which included sociodemographic information, factors affecting ageism, and the Fraboni Scale of Ageism (FSA). Descriptive statistics, Chi-square tests, and logistic regression were used to evaluate factors influencing healthcare preferences.

**Results:** The FSA score averaged  $71.89 \pm 7.87$ , indicating a 20.1% (95% CI:16.48–24.10) prevalence of age discrimination among resident physicians. Logistic regression analysis revealed that male participants (odds ratio (OR) = 1.519,  $P = 0.042$ ), those with moderate to very poor perceived knowledge of elderly health (OR = 2.418,  $P < 0.001$ ), and higher FSA scores (OR = 1.046,  $P < 0.001$ ) were more likely to prefer not providing healthcare services to elderly patients.

**Conclusions:** Ageism among resident physicians is prevalent, impacting their willingness to provide care to elderly patients. Gender, perceived knowledge, and ageist attitudes influence their preferences for providing healthcare to elderly patients. Addressing these factors is crucial for improving healthcare services for the elderly.

**Key words:** age discrimination, ageism, elderly health, healthcare preferences, resident physicians.

## INTRODUCTION

The global increase in average life expectancy has led to a significant rise in the elderly population across all countries. Between 2015 and 2050, the proportion of the world's population over 60 years old is expected to nearly double from 12% to 22%.<sup>1</sup> In Türkiye, the population aged 65 and over increased from 7 186 204 in 2018 to 8 722 806 in 2023, a rise of 21.4% over 5 years. The proportion of elderly individuals in the total population also rose

from 8.8% in 2018 to 10.2% in 2023.<sup>2</sup> A country is classified as an 'ageing' society when the proportion of persons aged 65 years and over accounts for between 7% and 14% of the total population.<sup>3</sup> Thus, Türkiye has now become an ageing society. This demographic shift necessitates the planning of social and health services geared toward the elderly and taking measures to address their needs. One critical factor affecting elderly health is age discrimination.

The term 'age discrimination' was first defined by Butler in 1969 as 'discrimination against individuals based on their age,' equating it to racial and gender discrimination.<sup>4</sup> In 1999, Palmore expanded this definition to 'any prejudice or negative stereotype or attitude against or in favour of an age group'.<sup>5</sup> According to the World Health Organization (WHO), 'ageism refers to the stereotypes (how we think), prejudice (how we feel), and discrimination (how we act) toward others or oneself based on age'.<sup>6</sup> Age discrimination is prevalent across all areas of life and has numerous negative effects. Half of the global population reports age discrimination against older individuals, young people report more age discrimination than other age groups. Age discrimination can alter our self-perception, erode intergenerational solidarity, devalue or limit the contributions of both young and old populations, and impact our health, longevity, and well-being, with broad economic repercussions. For instance, age discrimination is associated with earlier death, poorer physical and mental health, disability in older age, and slower recovery.<sup>7</sup> It also increases risky health behaviours such as unhealthy eating, excessive alcohol consumption, and smoking, reducing the quality of life.

In the literature, age discrimination among healthcare workers has garnered attention, with studies indicating widespread negative attitudes toward the elderly. However, fewer studies have focused on physicians, who are crucial service providers for elderly health. Existing studies report varying results on physicians' attitudes toward age discrimination.<sup>8–11</sup> Although research in this area is still insufficient, existing studies suggest that elderly individuals face discrimination and various barriers in healthcare services.<sup>9</sup> For example, a study among nursing students in Poland found that 47% had witnessed age discrimination in healthcare institutions, primarily at the hospital level and by doctors.<sup>12</sup> Research also indicates that attitudes toward the elderly can affect the quality of healthcare services.<sup>9,10,13</sup> The impact on the quality of healthcare services can subsequently influence the health of elderly individuals. Age discrimination in healthcare settings could lead to more negative medical practices in the future, resulting in long-term adverse effects on healthcare systems.<sup>14</sup>

Considering that the impact of population ageing on societies is largely related to the health of elderly

individuals, combating age discrimination is essential for healthy ageing.<sup>13</sup> In this regard, the WHO has adopted the first global strategy and action plan on ageing and health, highlighting the importance of addressing age discrimination's impact on all aspects of human health.<sup>15</sup>

In ageing societies, protecting the health of elderly individuals and ensuring their well-being are crucial. Understanding physicians' attitudes toward age discrimination and their preferences for providing healthcare to elderly patients, identifying factors influencing these attitudes, and finding solutions are essential for maintaining optimal health and treatment outcomes.

According to 2023 data from the Turkish Statistical Institute, the proportion of elderly individuals in Denizli is 12.3% (130 409 people).<sup>2</sup> The Türkiye Older Persons Profile Survey shows that 78.7% of people aged 65 and over in Türkiye have a chronic illness.<sup>16</sup> Elderly individuals tend to have multiple chronic illnesses and require special healthcare needs due to the complexity of their treatments. University hospitals play a significant role in meeting these needs. The increasing elderly population in Denizli has raised the workload of healthcare workers serving elderly patients at university hospitals. In this context, it is important to examine the perception of age discrimination and the preferences for providing healthcare services to elderly patients among resident physicians at Pamukkale University Hospital. To our knowledge, no research has been conducted on age discrimination among doctors in Denizli.

This study aims to determine age discrimination prevalence among resident physicians at Pamukkale University Medical Faculty and also to identify preferences for providing healthcare to elderly patients and the factors associated with these preferences.

## METHODS

### Study design

This cross-sectional study aimed to assess ageism among resident physicians at Pamukkale University Hospital and its associated factors.

### Study location and period

The study was conducted at Pamukkale University Medical Faculty Hospital between 6 June and 16 June, 2024.

### Study population

The study was conducted between 6 June and 16th, 2024, at Pamukkale University Hospital (a tertiary care centre in Denizli, Türkiye). All residents involved in patient care were eligible. Since residents in non-clinical departments are not typically involved in direct patient care, their inclusion could dilute the study's focus and make it harder to draw meaningful conclusions about the impact of ageism on clinical practice. Therefore, residents from non-clinical departments (e.g., anatomy, biochemistry, physiology... etc.) were excluded from the study.

### Sampling

The sample size was calculated using G\*Power software (version 3.1.9.7),<sup>17</sup> based on a previous study using the Fraboni Scale of Ageism. Considering an effect size (d) of 0.28, a minimum sample size of 412 was determined for an 80% power and  $\alpha$  of 0.05. Accounting for a 10% non-response rate, 453 residents were targeted. Participants were stratified by departments, and the number of participants from each stratum was proportionally determined. Resident physicians were then selected through simple random sampling from a list obtained from the hospital.

### Data collection

A self-administered questionnaire consisting of 45 questions was used to collect data. The questionnaire included 10 questions about sociodemographic information (age, gender, years of residency, marital status, family type, parental education level, perceived income status, and the longest place of residence), six questions about factors that may affect ageism and healthcare provision preferences, developed through literature review. These questions included: co-residence with an elderly person (Yes/No), current living situation with an elderly person (Yes/No), previous caregiving experience for an elderly person (Yes/No), perceived knowledge of elderly health (five-point Likert scale, ranging from Very Good to Very Poor), attitude toward the elderly (five-point Likert scale, ranging from Very Positive to Very Negative), preference for providing healthcare to elderly patients (Yes/Unsure/No). The remaining 29 questions were from the Fraboni Scale of Ageism. Dependent variables of this study were the preva-

lence of ageism and preferences for providing healthcare to elderly patients among resident physicians.

The Fraboni Scale of Ageism was developed by Fraboni et al. in 1990.<sup>18</sup> The Turkish validity and reliability study was conducted by Kutlu et al. in 2012.<sup>19</sup> The psychometric properties of the Fraboni Scale of Ageism were re-evaluated in a sample of healthcare workers by Özel Bilim and Kutlu in 2021, with a Cronbach's alpha of 0.72.<sup>20</sup> In this study, the overall Cronbach's alpha was calculated at 0.75, indicating good internal consistency. The Fraboni Scale of Ageism uses a four-point Likert scale, ranging from one ('strongly disagree') to four ('strongly agree'), with a total score range of 29–116. Scores of 78 and above indicate the presence of ageism, while scores of 77 and below indicate its absence. The scale comprises three subscales: 'traditional beliefs' (17 items), 'discrimination' (eight items), and 'avoidance' (four items). Items 8, 14, 21, 22, 23, and 24 are reverse-scored.

### Data analysis

Data were analyzed using SPSS version 29. Descriptive statistics included frequencies and percentages for categorical variables and means and standard deviations for continuous variables. Chi-square tests of independence were conducted to examine associations between categorical variables. Specifically, these tests were employed to identify potential covariates for inclusion in the logistic regression model. Variables that showed significant associations ( $P < 0.05$ ) in the Chi-square tests were considered for further analysis in the logistic regression model. To evaluate the factors influencing resident physicians' preferences for not providing healthcare to elderly patients, a logistic regression analysis was conducted using the backward likelihood ratio (LR) method. The model initially included all covariates identified as significant in the Chi-square tests, specifically: gender, income status, perceived knowledge of elderly health, Fraboni Ageism Scale scores. The backward LR method systematically removed non-significant variables to identify the best-fitting model. The final model retained gender, perceived knowledge of elderly health, and Fraboni Ageism Scale scores as significant predictors. Odds ratios (OR) and 95% confidence intervals (CI) were

reported for each variable, with a *P*-value of <0.05 considered statistically significant.

### Ethical considerations

Before data collection, ethics approval was obtained from the Pamukkale University Clinical Research Ethics Committee (approval date: 28.05.2024, approval number: 10). The study was conducted in accordance with the principles outlined in the Declaration of Helsinki. Participation was voluntary, and written informed consent was obtained from all participants.

## RESULTS

### Sociodemographic characteristics of participants

The study included 448 participants (98.9% response rate) with an average age of  $28.00 \pm 2.00$  years. Among the participants, 43.80% were women ( $n = 196$ ), and 59.70% were single ( $n = 267$ ). The majority of the residents (89.2%) grew up in a nuclear family ( $n = 398$  individuals), while 9.2% ( $n = 41$ ) came from extended families. Regarding parental education levels, most mothers had a high school (32.8%,  $n = 147$ ) or college/university education (38.4%,  $n = 172$ ). The fathers' education levels were similar, with 28.1% having a high school education ( $n = 126$ ) and 50% having a college or university degree ( $n = 224$ ). In terms of financial situation, a significant portion of residents reported sufficient income with savings (45.80%,  $n = 205$ ), and 33.9% ( $n = 152$ ) reported sufficient income but no savings. Most residents (75.5%,  $n = 333$ ) had spent the longest period of their lives in a city, and 15.4% ( $n = 68$ ) in a town.

The average duration of participants' professional careers was  $40.41 \pm 28.25$  months, with a median of 36 months (range 24–48 months). The average duration of their residency was  $23.16 \pm 14.66$  months, with a median of 24 months (range 12–36 months). Among the participants, 67.40% ( $n = 302$ ) were from internal medical sciences. The sociodemographic and professional characteristics of resident physicians are presented in Table 1.

Approximately half of the participants (47.80%,  $n = 214$ ) had lived with an elderly person at some point in their lives. Currently, only a small percentage (2.9%,  $n = 13$ ) lived with an elderly person. A small proportion (6.90%,  $n = 31$ ) had previously taken care

**Table 1** Sociodemographic and professional characteristics of resident physicians

Variable	<i>n</i>	%
Age (mean $\pm$ SD)	$28.00 \pm 2.00$	
Gender		
Female	196	43.80
Male	252	56.30
Marital status		
Married	175	39.10
Single	267	59.70
Divorced/widowed/separated	5	1.10
Family type		
Nuclear family	398	89.20
Extended family	41	9.20
Fragmented family	7	1.60
Mother's education level		
Illiterate	11	2.50
Literate	10	2.20
Primary school	93	20.80
Middle school	15	3.30
High school	147	32.80
College/university	172	38.40
Father's education level		
Illiterate	8	1.80
Literate	8	1.80
Primary school graduate	65	14.50
Middle school graduate	17	3.80
High school graduate	126	28.10
College/university	224	50.00
Perceived income status		
Not enough and have debt	50	11.20
Not enough and no debt	41	9.20
Enough and no savings	152	33.90
Enough and have savings	205	45.80
The longest place of residence		
City	333	75.50
Town	68	15.40
Village	39	8.80
Abroad	1	0.20
Profession duration (months) (mean $\pm$ SD)	$40.41 \pm 28.25$	
Residency duration (months) (mean $\pm$ SD)	$23.16 \pm 14.66$	
Department		
Internal medicine sciences	302	67.40
Surgical sciences	146	32.60

Due to missing data, the total number of participants is not 448 in some variables.

of an elderly person. A majority (93.1%,  $n = 416$ ) had never cared for an elderly person, with only 6.9% ( $n = 31$ ) having such experience. Most physicians rated their knowledge of elderly health as moderate (52.5%,  $n = 235$ ) or good (33.0%,  $n = 148$ ), while very few considered it very good (7.1%,  $n = 32$ ) or poor (6.5%,  $n = 29$ ). The majority held positive (64.5%,  $n = 289$ ) or very positive (15.8%,  $n = 71$ ) attitudes toward the elderly, with only a small

**Table 2** Resident physicians' experiences with elderly individuals, perceived knowledge, and attitudes toward elderly health

Variable	<i>n</i>	%
Lived with an elderly person		
Yes	214	47.80
No	234	52.20
Currently living with an elderly person		
Yes	13	2.90
No	435	97.10
Previously cared for an elderly person		
Yes	31	6.90
No	416	93.10
Perceived knowledge of elderly health		
Very good	32	7.10
Good	148	33.00
Moderate	235	52.50
Poor	29	6.50
Very poor	4	0.90
Attitude toward the elderly		
Very positive	71	15.80
Positive	289	64.50
Neutral	78	17.40
Negative	8	1.80
Very negative	2	0.40
Preference for providing healthcare to elderly patients		
Yes	267	59.70
Unsure	131	29.30
No	49	11.00

Due to missing data, the total number of participants is not 448 in some variables.

percentage expressing neutral (17.4%,  $n = 78$ ), negative (1.8%,  $n = 8$ ), or very negative (0.4%,  $n = 2$ ) attitudes. When asked about providing healthcare to elderly patients, most residents (59.7%,  $n = 267$ ) preferred providing healthcare to elderly patients, while 29.3% ( $n = 131$ ) were unsure, and 11.0% ( $n = 49$ ) did not prefer it (Table 2).

The total score on the Fraboni Scale of Ageism averaged  $71.89 \pm 7.87$ , with a median score of 72 (range 40–98). Subscale scores included an average of  $42.28 \pm 5.72$  for traditional beliefs,  $20.18 \pm 1.90$  for discrimination, and  $9.41 \pm 1.90$  for avoidance. The prevalence of age discrimination among resident physicians was 20.10% (95% CI: 16.48–24.10) ( $n = 90$ ), with the remaining 79.90% (95% CI: 75.90–83.52) ( $n = 358$ ) showing no signs of age discrimination (Table 3).

Logistic regression analysis revealed several factors influencing the preference for not providing healthcare services to elderly patients. Male participants were 1.519 times more likely to prefer not providing these healthcare services to elderly patients compared to female participants (OR = 1.519, 95%

**Table 3** Fraboni scale of ageism scores and prevalence of age discrimination.

Variable	Mean $\pm$ SD	Median (Min–Max)
Total score	$71.89 \pm 7.87$	72 (40–98)
Traditional beliefs subscale	$42.28 \pm 5.72$	42 (20–68)
Discrimination subscale	$20.18 \pm 1.90$	20 (14–26)
Avoidance subscale	$9.41 \pm 1.90$	9 (4–16)
Age discrimination <i>n</i> (%)		95% CI
No discrimination ( $\leq 77$ )	358 (79.90)	75.90–83.52
Discrimination ( $> 77$ )	90 (20.10)	16.48–24.10

**Table 4** Factors associated with preference for not providing healthcare to elderly patients: logistic regression analysis

Variable	OR	95% CI	<i>P</i>
Gender			
Female (reference)	-	-	-
Male	1.519	1.016–2.272	0.042
Perceived knowledge of elderly health			
Very good/good (reference)	-	-	-
Moderate/poor/very poor	2.418	1.599–3.655	<0.001
Fraboni Ageism Scale score	1.046	1.019–1.075	<0.001

The model included gender, income status, perceived knowledge of elderly health, and Fraboni Ageism Scale scores. Backward likelihood ratio method was used.  $R^2 = 0.109$ .

CI: 1.016–2.272,  $P = 0.042$ ). Participants with a moderate to very poor perceived knowledge of elderly health were 2.418 times more likely to prefer not providing healthcare services to elderly patients compared to those with very good or good knowledge (OR = 2.418, 95% CI: 1.599–3.655,  $P < 0.001$ ). Additionally, higher scores on the Fraboni Scale of Ageism were associated with a higher likelihood of not preferring to provide healthcare services to elderly patients (OR = 1.046, 95% CI: 1.019–1.075,  $P < 0.001$ ). (Table 4).

## DISCUSSION

The present study examined age discrimination among resident physicians at Pamukkale University Hospital and identified factors influencing their preference for providing healthcare to elderly patients. Our findings indicate that a significant proportion of resident physicians exhibited ageist attitudes. Additionally, several key factors were found to influence the preference for not providing healthcare to elderly patients, including gender, perceived knowledge of elderly health, and Fraboni Scale of Ageism scores.

### Ageism prevalence

Our study found an average Fraboni Scale of Ageism score of 71.19 among resident physicians, with a prevalence of ageism at 20.1%. This is higher than the 7.8% found among doctors in a university hospital in Singapore in 2009<sup>11</sup> and the 61.5 average Fraboni Scale of Ageism score reported in a study of Australian physicians<sup>9</sup> but aligns more closely with the 67.3 average Fraboni Scale of Ageism score found in Korea.<sup>21</sup> These discrepancies highlight regional and cultural variations in ageism among healthcare professionals but also suggest that ageism in healthcare settings is a pervasive issue that warrants ongoing attention and highlights the need for interventions to address these biases.

### Impact of ageism on healthcare preferences

The relatively high prevalence of ageism in our study underscores a significant concern, especially in the context of an ageing population. The fact that nearly 11% of our participants expressed unwillingness to provide healthcare services to elderly patients, with an additional 26.3% being uncertain, indicates a notable reluctance among young physicians. This reluctance may be a critical public health issue given the increasing demands for healthcare services among the elderly. Several factors may contribute to this reluctance. Our logistic regression analysis revealed that higher scores on the Fraboni Scale of Ageism were associated with a greater likelihood of preferring not to provide healthcare to elderly patients. This is in line with studies indicating that ageist attitudes among healthcare providers can lead to reduced quality of care and adverse health outcomes for elderly patients.<sup>22–24</sup> This may be explained by the fact that physicians think that the management of elderly individuals is difficult. Physicians who perceive the elderly as ‘difficult patients’ or believe that treatments for elderly patients are ‘useless’ may tend to avoid providing services to these patients. Also, in a study conducted in Singapore, the majority of physicians considered that an important difficulty in the field of elderly health was the lack of a rewarding aspect of working in this field.<sup>11</sup> The complexity and length of treatment for elderly patients, combined with communication challenges and a perceived lack of sufficient training and experience among residents, may foster negative

attitudes. Ageism can undermine equitable access to healthcare services, potentially leading to poorer health outcomes for elderly patients.<sup>25</sup> Nevertheless, the tendency of physicians to remain passive in providing healthcare services to elderly individuals in today’s world where the elderly population is gradually increasing is worrying. Addressing ageism through targeted interventions, such as implicit bias training and increased exposure to elderly patients during medical training, could improve healthcare outcomes for this population. Furthermore, specific recommendations to address ageism could include integrating structured geriatric care rotations in residency programs, emphasising the importance of compassionate care, and fostering empathy toward elderly patients. Mentorship and role modelling by senior physicians who demonstrate positive attitudes toward elderly care could also play a crucial role in shaping the attitudes of resident physicians. Therefore, addressing ageism within medical education is imperative.

### Gender and ageism

In this study, logistic regression analysis revealed that male resident physicians are significantly more likely to prefer not providing healthcare to elderly patients compared to their female counterparts. This finding is consistent with previous studies that have reported gender differences in attitudes toward the elderly. For instance, these studies noted that male healthcare providers often exhibit higher levels of ageist attitudes than females.<sup>9,26</sup> Factors contributing to this may include gender roles, empathy levels, and communication skills, all of which play a role in shaping attitudes toward elderly care.<sup>27–29</sup> Gender roles may lead women to be perceived as more compassionate and caring toward the elderly. This perception may have contributed to female physicians showing more interest in elderly patients and a better understanding of their needs. Women are generally perceived to have better communication skills than men.<sup>30</sup> This may have enabled female physicians to communicate more effectively with older patients and better understand their concerns. The combination of these factors may explain the tendency of female physicians to have more positive attitudes toward older patients. Tailoring educational interventions to address these gender-specific differences, by foster-

ing communication and empathy training among male residents, could be effective in reducing ageist attitudes. This suggests that gender-specific training and education may be necessary to mitigate ageist attitudes among male physicians.

### Perceived knowledge of elderly health

Our results indicate that a majority of participants rated their knowledge of elderly health as moderate, with only a minority considering it very good. This perceived lack of knowledge is a significant predictor of reluctance to provide care for elderly patients. Specifically, participants with moderate to poor self-assessed knowledge were 2.418 times more likely to prefer not providing healthcare services to older adults. This finding is consistent with previous research that demonstrates a strong association between perceived knowledge and attitudes toward age-related care.<sup>31,32</sup> Also, a study conducted in Korea showed that participation in geriatrics courses is associated with more positive attitudes toward elderly care.<sup>21</sup> Enhancing geriatric education and training within medical curricula could potentially reduce ageist attitudes and improve the willingness of healthcare providers to care for elderly patients. Moreover, providing continuous professional development opportunities focused on geriatric care and the challenges faced by elderly patients could further enrich residents' knowledge and competence, making them more confident in handling complex cases.

### Strengths and limitations

This study has several strengths, including its focus on a previously under-researched area in Türkiye. Attitudes toward age discrimination have been mostly studied in different professions and there are few studies on physicians, especially in Türkiye. Therefore, our study will contribute both to the existing literature and to the awareness of the subject. This study is one of the first steps toward investigating the potential effects of age discrimination in medical education and health service delivery. However, there are limitations to consider. As a cross-sectional study, it cannot establish causality. Also, the self-reported nature of the data may introduce response bias. Additionally, social desirability bias may have influenced participants to present more positive attitudes toward elderly care than they genuinely hold. Despite these limitations, our findings provide

valuable insights into the prevalence and predictors of ageism among resident physicians.

In conclusion, ageism among resident physicians at Pamukkale University Hospital is a significant issue, with gender, perceived knowledge of elderly health, and ageist attitudes influencing preferences for providing healthcare to elderly patients. Our findings underscore the importance of addressing ageism in medical education and practice. Addressing these factors through targeted educational and institutional interventions is essential to combat ageism and ensure high-quality care for the growing elderly population. Integrating comprehensive geriatric training into medical school curricula and residency programs is crucial. By promoting positive attitudes and enhancing geriatric training, we can improve healthcare outcomes and support healthy ageing. Mentorship and role modelling should also be considered as key strategies for influencing the attitudes of future healthcare providers. Encouraging experienced physicians with positive attitudes toward elderly care to mentor younger residents can foster a supportive learning environment and promote positive role models.

Future research should consider longitudinal studies to explore changes in attitudes over time and the impact of educational interventions on reducing ageism. Moreover, expanding the study to include a diverse range of healthcare professionals and settings could provide a more comprehensive understanding of ageism in healthcare.

### AUTHOR CONTRIBUTIONS

Research conception and study design: SUU. Data analysis and interpretation: SUU and MA. Statistical analysis: SUU and MA. Data acquisition: MA. Supervision: SUU. Each author made important intellectual contributions during manuscript drafting or revision and is accountable for the overall work, ensuring that questions pertaining to the accuracy and integrity of any portion of the work are appropriately investigated and resolved.

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## DISCLOSURE STATEMENT

The authors declare no conflict of interest.

## ETHICS STATEMENT

This study was performed in accordance with the Declaration of Helsinki and was approved by the Pamukkale University Clinical Research Ethics Committee (approval date: 28.05.2024, approval number: 10).

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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