

# DEMENTIA-RELATED KNOWLEDGE, ATTITUDES, AND PRACTICES AMONG FAMILY MEDICINE RESIDENTS

# Seniz Sengul<sup>1</sup>, Mustafa Kursat Sahin<sup>1</sup>, Mustafa Fevzi Dikici<sup>1</sup>

<sup>1</sup> Medical Faculty, Department of Family Medicine, Ondokuz Mayıs University, Samsun, Türkiye

ORCID: S.S. 0000-0002-0625-2562; M.K.S.0000-0002-3490-6009; M.F.D. 0000-0001-7445-5882.

Corresponding author: Mustafa Kursat Sahin, E-mail: kursat.sahin@omu.edu.tr Received: 19.09.2024; Accepted: 29.12.2024; Available Online Date: 31.01.2025 ©Copyright 2021 by Dokuz Eylül University, Institute of Health Sciences - Available online at https://dergipark.org.tr/en/pub/jbachs

**Cite this article as:** Sengul S, Sahin MK, Dikici MF. Dementia-Related Knowledge, Attitudes, and Practices Among Family Medicine Residents. J Basic Clin Health Sci 2025; 9: 166-175.

## ABSTRACT

**Purpose:** Primary care physicians are often the first to encounter dementia patients, highlighting the importance of their roles in early detection and management. This study evaluates the knowledge, attitudes, and practices regarding dementia of family medicine residents (FMRs) in Türkiye.

**Materials and Methods**: This cross-sectional study was conducted from March to April 2022 using an online questionnaire distributed to family medicine clinics across Türkiye. The questionnaire, consisting of three sections, demographics, the Dementia Knowledge Assessment Scale (DKAS), and the Dementia Attitude Scale (DAS), was distributed using Google Forms.

**Results:** Three hundred ninety-three FMRs, with a mean age of 28.9±3.0 years, 71.2% of whom were women, participated. The mean DKAS score was 18.33±5.11, and the mean DAS score was 93.48±12.29. Higher knowledge levels were associated with receipt of postgraduate training, experience in dementia care, and willingness to screen for dementia. Positive attitudes were associated with more years in residency, a family history of dementia, and prior dementia-related education.

**Conclusion:** FMRs demonstrated limited knowledge of, but positive attitudes toward dementia. This study underscores the need for enhanced dementia training in residency programs to improve early detection and management skills among primary care physicians. Addressing gaps in knowledge and confidence can lead to better patient outcomes and more effective dementia care.

Keywords: Alzheimer's disease, attitude, dementia, family medicine, knowledge

# INTRODUCTION

Dementia is a complex and debilitating syndrome characterized by a progressive decline in cognitive functions, impacting memory, thinking, and behavior sufficiently to interfere with daily activities (1). Alzheimer's disease is the most prevalent form of dementia, accounting for 60-70% of cases. Globally, approximately 9.9 million new cases of dementia are reported annually, making it the second-most important cause of disability and the seventh-leading cause of death among individuals aged 70 and older (2). This rising prevalence presents a significant challenge, not only to affected individuals and their families, but also to national healthcare systems and economies. This global burden necessitates the involvement of family physicians in timely dementia care.

Primary care physicians (PCPs) frequently serve as the initial point of contact within the healthcare system for patients exhibiting early signs of dementia. Given their longstanding relationships with patients, PCPs are uniquely positioned to observe and identify early cognitive changes (3). The general practice setting provides an ideal environment for early detection and intervention, which is crucial for the effective management of dementia (4). Practical dementia care in primary settings relies heavily on the implementation of established diagnostic and treatment guidelines, such as those developed in the USA and Canada (5, 6). These guidelines emphasize the importance of early diagnosis and comprehensive management strategies to improve patient outcomes and alleviate the burden on caregivers (6).

Despite the availability of these guidelines, several studies have highlighted significant barriers to optimal dementia care in primary care settings. These barriers include inadequate knowledge, insufficient training, and negative attitudes toward dementia healthcare professionals among (3). PCPs' and attitudes towards dementia knowledge significantly influence their diagnostic and management practices, impacting the quality of care for patients and their families (4). Studies from various countries have revealed that many PCPs lack confidence in diagnosing and managing dementia, underscoring the need for enhanced education and training programs (7-9).

The role of family medicine residents (FMRs) is crucial in the context of dementia care. As future primary care providers, their training and preparedness to handle dementia cases will shape the future nature of dementia care. Understanding the current knowledge, attitudes, and practices regarding dementia of FMRs is essential for developing targeted educational interventions that can bridge existing gaps (10, 11).

Research has shown that well-structured dementia education programs can significantly improve self-confidence knowledge, attitudes. and in dementia care among FMRs (4, 12). These programs typically cover various aspects of dementia care, including early detection, diagnostic criteria, management strategies, and communication with patients and their families (13, 14). By improving FMRs' competency in these areas, such educational initiatives can lead to better patient outcomes, and thus to a more effective healthcare system (12).

To summarize, dementia represents a growing public health challenge with far-reaching implications for individuals, families, and healthcare systems worldwide. PCPs, and particularly FMRs, play a pivotal role in the early detection and management of dementia. Addressing the gaps in knowledge, attitudes, and practices among these healthcare providers through targeted education and training programs is essential for enhancing the quality of dementia care. This study evaluated dementiarelated knowledge, attitudes, and practices among family medicine residents, thus providing insights capable of shaping the development of effective educational interventions.

#### MATERIALS AND METHODS

This cross-sectional study was conducted in Türkiye March and April 2022 using an online in questionnaire. The eligibility criteria were: (1) working as an FMR in Türkiye, (2) being an FMR currently enrolled in a full-time residency program (in addition to the full-time residency program, there is also a contract residency program in family medicine for family physicians working in the field in Türkiye), (3) junior and senior FMRs reflecting different levels of experience and training, and (4) willingness to complete the survey. The exclusion criterion was an incomplete questionnaire. Ethics committee approval was obtained from Ondokuz Mayıs University Clinical Research Ethics Committee (Date: 23.02.2022, Decision No: OMUKAEK 2022/89) before data collection. The study population consisted of FMRs in family medicine clinics at universities and training and research hospitals across Türkiye. The sample size was calculated using OpenEpi, with a confidence level of 95%. Since there are no previous studies on this subject in Türkiye, a 50% probability estimate was employed. Based on this assumption, the minimum sample size was calculated at 384 participants.

Family medicine clinics across Türkiye were selected using a cluster sampling method. The clusters were based on geographical regions to ensure a representative sample. At least four clinics from each region were contacted. A list of medical-dental hospitals with authorized specialty education programs was obtained from the official website "https://tuk.saglik.gov.tr/", a list of institutions authorized to provide training in family medicine. The clinics identified as providing training in this field were then identified, and the chief residents or trainers in these selected clinics were contacted to facilitate questionnaire distribution. Questionnaires were sent to chief assistants or trainers in the selected clinics. The questionnaire was created using Google Forms and was distributed via clinic e-mail groups or clinic WhatsApp groups, ensuring wide distribution and convenience for respondents. Since all resident physicians use smartphones, particular efforts were made to ensure the completion of the online form by contacting the relevant authorities in each department

Table 1. FMRs	' characteristics	(n=393)
---------------	-------------------	---------

Variables	Category	n (%)
Sex	Female	280 (71.2)
	Male	113 (28.8)
Age (years)	<30	258 (65.6)
	≥30	135 (34.4)
Years in the profession (years)	<5	258 (65.6)
	≥5	135 (34.4)
Residency	First-year	197 (50.1)
	Second-year	59 (15.0)
	Third-year	137 (34.9)
Presence of dementia in the family	Yes	112 (28.5)
	No	281 (71.5)
Encountering a dementia patient during undergraduate education	Yes	347 (88.3)
	No	46 (11.7)
Receipt of education regarding dementia after graduation	Yes	66 (16.8)
	No	327 (83.2)
Involvement in the diagnosis, treatment, or follow-up of dementia during the	Yes	110 (28.0)
residency	No	283 (72.0)
	Yes	185 (47.2)
Testing patients for cognitive impairment	No	207 (52.8)
Evaluating an elderly patient with suspected dementia in terms of cognitive	Yes	317 (80.7)
impairment	No	76 (19.3)
Willing to actively screen for the early symptoms of dementia	Yes	350 (89.1)
	No	43 (10.9)
Wishing to take part in educational sessions to improve one's dementia	Yes	374 (95.2)
knowledge and patient management skills	No	19 (4.8)

as frequently as possible. The questionnaire was completed with a maximum of three reminders being sent to the faculty member or chief assistant contacted. In the event that no response was received from the relevant institution despite three reminders being issued, the survey was continued by passing to another institution in the same region.

In order to ensure the reliability and validity of the results, a pilot study was conducted prior to the main survey. Feedback from the pilot study was used to refine the questionnaire. The questionnaire was based on a review of the previous literature (4, 8, 9, 13, 14) and consisted of three sections:

1. Demographic Data: This section included questions concerning the participant's age, sex, years in the profession, dementia training, working experience with dementia patients, the presence of a patient with dementia in the family, and willingness to attend dementia training sessions.

2. The Dementia Knowledge Assessment Scale (DKAS): Developed by Annear et al., the DKAS is a 17-item five-point Likert-type scale with possible scores ranging from 0 to 34 (15). Higher scores indicate greater knowledge of dementia. A Turkish validity and reliability study was conducted by Akyol

et al. to ensure the scale's appropriateness in the Turkish context (16). Permission to use the scale was obtained from the authors of the original research.

3. The Dementia Attitude Scale (DAS): Developed by O'Connor and McFadden (17) and validated in Turkish by Çetinkaya et al., the DAS is a 20-item seven-point Likert-type scale (18). Possible scores range from 20 to 140, with higher scores indicating a more positive attitude toward dementia. The requisite permission to employ the scale was obtained from the authors of the original research.

Data were analyzed using IBM SPSS Statistics version 21.0. Descriptive statistics were used to express the data as numbers, percentages, means, standard deviations, and medians (minimum-maximum values). The normality of distribution was assessed using the Kolmogorov-Smirnov test and graphical methods. The independent-sample t-test and ANOVA were used to compare continuous variables. Pearson's correlation and linear regression analyses were performed to explore relationships between variables. Statistical significance was set at p < 0.05.

#### RESULTS

Three hundred ninety-three FMRs were included in this study. The mean age of the FMRs was 28.9±3.0 years, 71.2% were women, 65.6% were younger than 30, 34.4% had been in the profession for five years or more, 50.1% were in their first years of residency, 28.5% had a family member or relative diagnosed with dementia, 88.3% had encountered a patient with dementia during undergraduate training, 16.8% had received postgraduate training in dementia, and 28.0% had been involved in the diagnosis, treatment, or follow-up of a patient with dementia during their residency. Those with experience of working with individuals with dementia from their family medicine residencies were most likely to work in home care and palliative care. Analysis showed that 47.2% of FMRs reported having administered a cognitive test to patients. While 87.1% of those who used cognitive testing did so when they suspected a cognitive disorder, 32.3% used cognitive testing during routine geriatric examinations. Of the FMRs who reported using a cognitive test, 95.7% used the standardized Mini-Mental State Examination (MMSE), 38.7% applied the Clock Drawing test, and 4.8% employed other tests. When those who did not perform cognitive tests were asked their reasons for this, 68.1% felt that they were not competent to administer and interpret cognitive tests, 61.4% felt sufficiently competent to perform a neuropsychiatric evaluation, 53.1% cited time constraints, and 44.9% stated that tests should be administered by relevant specialists (in the fields of neurology, geriatrics, and psychiatry). In addition, 80.7% of FMRs reported that they would screen older patients with suspected cognitive impairment or dementia for depression, 89.1% wished to screen for early signs of dementia actively, and 95.2% wanted to receive training to improve their dementia knowledge, and patient management skills (Table 1).

Table 2. Relationships between FMRs' knowledge and attitude scores and sociodemographic and descriptive characteristics

Variable	Category	DKA	S	DAS		
		Mean±SD	р	Mean±SD	р	
Gender	Female	18.34±5.15	0.951	93.67±12.10	0.634	
	Male	18.30±5.02	_	93.02±12.80		
	<30	18.54±4.92	0.245	93.67±12.30	0.677	
Age (years)	≥30	17.91±5.43	_	93.12±12.32		
Years in the professions	<5	18.51±4.89	0.329	92.71±11.95	0.086	
	≥5	17.98±5.51	_	94.56±12.85		
Year of residency	1	17.78±5.43		91.98±12.41		
	2	18.34±4.70	0.063	94.17±10.62	0.044	
	≥3	19.11±4.71	_	95.34±12.59		
Presence of dementia in the family	Yes	18.96±4.95	0.118	96.13±12.00	0.007	
	No	18.07±5.15	_	92.43±12.27		
Encountering a dementia patient during	Yes	18.41±5.13	0.342	94.07±12.43	0.009	
undergraduate education	No	17.65±4.96	_	89.02±10.27		
Receipt of education regarding dementia	Yes	19.64±5.46	0.022	95.39±14.96	0.243	
after graduation	No	18.06±5.00	_	93.10±11.67		
Involvement in the diagnosis, treatment, or	Yes	19.22±5.61	0.043	95.16±14.08	0.123	
follow-up of dementia during the residency	No	17.98±4.86	_	92.83±11.49		
Testing patients for cognitive impairment	Yes	18.68±5.25	0.208	96.17±13.04	<0.001	
	No	18.02±4.98	_	91.01±11.04		
Evaluating an elderly patient with	Yes	18.48±5.02	0.223	94.22±12.23	0.015	
suspected dementia in terms of cognitive	No	17.68±5.45	_	90.42±12.17		
impairment						
Willingness to actively screen for early	Yes	18.53±5.05	0.027	94.40±12.29	<0.001	
symptoms of dementia	No	16.70±5.31	_	86.00±9.55		
Wishing to take part in educational	Yes	18.36±5.10	0.514	93.83±12.09	0.012	
sessions to improve one's dementia	No	17.58±5.34	_	86.58±14.44		
knowledge and patient management skills						

SD: Standard deviation; bold values indicate statistical significance. \*ANOVA, post hoc LSD test.

Table 3. Linear regression	on models predicting	dementia	knowledge scores

Model	Factors	B (95%CI)	Beta	t	р
1	(Constant)	18.061 (17.509-18.613)		64.299	<0.001
	Receipt of education regarding dementia after graduation	1.575 (0.228-2.923)	0.115	2.298	0.022
2	(Constant)	16.560 (15.039-18.082)		21.397	<0.001
	Receipt of education regarding dementia after graduation	1.475 (0.130-2.820)	0.108	2.156	0.032
	Willingness to actively screen for early symptoms of dementia	1.704 (0.093-3.315)	0.104	2.080	0.038

B, standardized regression coefficients; Beta, non-standardized regression coefficients

Model 1: F= 5.281, p=0.022, Adjusted R<sup>2</sup>=0.011, Model 2: F= 4.825, p=0.009, Adjusted R<sup>2</sup>=0.019

Model	Factors	B (95% CI)	Beta	t	р
1	(Constant)	86.000 (82.397-89.603)		46.929	<0.001
	Willingness to actively screen for early	8.361 (4.543-12.179)	0.213	4.305	<0.001
	symptoms of dementia				
2	(Constant)	84.067 (80.415-87.719)		45.258	<0.001
	Willingness to actively screen for early	7.940 (4.191-11.689)	0.202	4.164	<0.001
	symptoms of dementia				
	Testing patients for cognitive impairment	4.890 (2.543-7.237)	0.199	4.097	<0.001
3	(Constant)	82.641 (78.921-86.361)		43.680	<0.001
	Willingness to actively screen for early	8.117 (4.409-11.826)	0.207	4.303	<0.001
	symptoms of dementia				
	Testing patients for cognitive impairment	5.111 (2.786-7.436)	0.208	4.322	<0.001
	Presence of dementia in the family	4.110 (1.537-6.684)	0.151	3.140	0.002
4	(Constant)	78.888 (74.079-83.698)		32.248	<0.001
	Willingness to actively screen for early	8.131 (4.445-11.818)	0.207	4.337	<0.001
	symptoms of dementia				
	Testing patients for cognitive impairment	4.938 (2.623-7.253)	0.201	4.194	<0.001
	Presence of dementia in the family	3.988 (1.428-6.548)	0.146	3.063	0.002
	Encountering a dementia patient during	4.369 (0.788-7.951)	0.115	2.399	0.017
	undergraduate advantion				

Table 4. Linear regression models predicting dementia attitude scores

undergraduate education

*B*, standardized regression coefficients; Beta, non-standardized regression coefficients Model 1: F=18.533, p<0.001, Adjusted  $R^2$ =0.043, Model 2: F=18.033, p<0.001, Adjusted  $R^2$ =0.080, Model 3: F=15.583, p<0.001, Adjusted  $R^2$ =0.101, Model 4: F=13.269, p<0.001, Adjusted  $R^2$ =0.112

The FMRs' mean overall DKAS score was  $18.33\pm5.11$ , and their mean DAS score was  $93.48\pm12.29$ . DKAS scores were higher among those FMRs who had received postgraduate training in dementia (p=0.022), who had participated in the diagnosis, treatment, and follow-up of a dementia patient (p=0.043), and who actively wished to screen

for early signs of dementia (p=0.027). Positive attitudes towards dementia increased in line with the number of years spent in residency (p=0.44). DAS positive attitude scores were higher among FMRs with a relative diagnosed with dementia (p=0.007), who had encountered a patient with dementia during their undergraduate training (p=0.009), who used

cognitive tests to evaluate cognitive disorders in their clinical practice (p<0. 001), who indicated that they

would screen a patient with suspected cognitive impairment or dementia for depression (p=0.015), who would actively screen for early signs of dementia (p<0.001), and who would willingly attend training to improve their knowledge and management skills (p=0.012) (Table 2).

A positive relationship was observed between knowledge and attitude scores (r=0.306, p<0.001). In the linear regression model applied between the variables and the DKAS, receipt of training on dementia after graduation and willingness to actively screen for early symptoms of dementia emerged as determinants of attitude (Table 3).

In the linear regression model applied between the variables and the DAS, willingness to actively screen for early symptoms of dementia, testing patients for cognitive impairment, a family history of dementia, and having dealt with a patient with dementia during undergraduate training emerged as determinants of attitude (Table 4).

## DISCUSSION

This study assessed the knowledge, attitudes, and practices regarding dementia of FMRs in Türkiye and the factors affecting these. The findings indicate that while FMRs possess generally positive attitudes toward dementia, their knowledge about the condition is limited, and they do not feel competent to perform neurocognitive assessments. This underscores the need for enhanced dementia-related content in residency training programs.

Comparative studies from various countries underscore the variability in dementia training among healthcare professionals. For instance, approximately half the physicians in a study from China reported having received dementia training (8), whereas only one in five participants in a study from Hungary had been given similar training (13). In a study from the United Kingdom, approximately onequarter of physicians reported receiving dementia training during their residencies (11). The present study aligns well with these findings, showing that only approximately one in five FMRs in Türkiye had received dementia training post-graduation, and that approximately one in four had been involved in dementia patient care during their residencies. This suggests a significant gap in dementia education and is corroborated by previous studies from Canada and

France highlighting similar deficiencies in training programs (19, 20).

A study involving community healthcare workers (HCWs) reported that their knowledge levels were associated with age, sex, and experience of caring for patients with dementia (21). Training in geriatrics has been shown to enhance the ability to rapidly diagnose dementia (4). A previous study of general practitioners (GPs) observed that participants who took part in training on the subject of dementia tended, when in doubt, to diagnose more patients in terms of cognitive disorder (13). Another study showed that FMRs with more years of training were more confident in diagnosing dementia (22). No significant association was observed in the present study between dementia knowledge levels and age, time spent as a resident, or years in the profession. However, individuals who had received postgraduate training in dementia exhibited higher levels of knowledge. A study of primary HCWs in Hong Kong described their competence in terms of early diagnosis of dementia as low and concluded that this was due to a paucity of dementia-related experience. HCWs who had the opportunity to work in geriatric/psychogeriatric departments after graduation were reported to be more confident in diagnosing dementia in its early stages (23). In another study, PCPs receiving specialist training also reported feeling more confident on the subject of dementia care (24). Approximately one-quarter of the FMRs in the present study had worked with patients with dementia during their residency training. These participants were most likely to work in home care and palliative care. In addition, knowledge of dementia was greater among those who had received dementia training after graduation, those who had been involved in the diagnosis, treatment, and followup of dementia patients during residency, and those who were willing to screen for early signs of dementia actively. Greater professional experience did not contribute to the general level of knowledge concerning dementia, unless specific training on the subject had been received. Theoretical teaching and practical measures should be increased during residency training for PCPs.

A previous study from Canada emphasized the lack of dementia training in family medicine specialization programs (19). A study from France highlighted the lack of instruction regarding Alzheimer's disease in the training of GPs (20). A study from the United Kingdom reported that the majority of trainee GPs were eager to participate in dementia training sessions (11). Other studies have similarly concluded that most GPs and hospital clinicians also wish to receive dementia-related training (14, 24). Another study showed that dementia workshops for PCPs improve clinicians' ability to manage dementia and also increase their confidence (25). Most FMRs in the present study also wished to participate in dementiarelated education. This finding is particularly important because it shows that receipt of postgraduate training regarding dementia is a factor influencing dementia-related knowledge levels. It is also very important that physicians express a willingness to participate in dementia education, which will assist them to improve their knowledge levels and thus be of greater benefit to patients.

A previous study, in which one-third of GPs felt that they lacked competence in diagnosing dementia, described a lack of confidence in the face of contemporarv diagnostic approaches. time limitations, and reimbursement difficulties in some countries as obstacles to early diagnosis (26). In another study involving GPs, the reasons cited for not carrying out testing included lack of time, lack of sufficient knowledge concerning test methods, and the idea that testing is best conducted by a specialist (13). The majority of FMRs in the present study did not test patients with cognitive disorders. The reasons for this included the clinicians not regarding themselves as competent in applying and interpreting tests or performing neuropsychiatric evaluations, and time limitations. Another reason may be that FMRs have little contact with patients with dementia during specialist training. However, observation of their populations gives PCPs a better opportunity to become aware of and suspect early cognitive changes in their patients. This results in significant benefits for some patients. In addition, the majority of FMRs reported wishing to screen for the early signs of dementia actively. Improving deficiencies in time and education on this subject will result in more effective protection against dementia in primary care settings.

In terms of the application of tests for cognitive evaluation, a study of PCPs in 25 European countries revealed that the MMSE was the most popular test in all countries except Hungary, followed by the Clock-Drawing test (27). According to a study of PCPs in Germany, most physicians performed a cognitive test when cognitive impairment was suspected, while one in three performed a general geriatric evaluation. The most frequently applied method was the Clock-Drawing test, followed by the MMSE (4). Another study of GPs in Hungary reported that half the participants applied a cognitive test when they suspected cognitive impairment, although the other half did not apply such tests even when such impairment was suspected (13). A study of primary care practitioners and neurologists in the USA also reported that only half applied cognitive tests to patients with suspected cognitive impairment (28).

In another study from Germany, one physician in five simultaneously assessed patients for depression, and one in three also evaluated their daily activities (29). An examination of practices around the world shows that the most commonly used tests are the MMSE and the Clock Drawing test. This may be because these are the best-known tests and because they are easy to administer. The fact that similar tools are used worldwide is also important in terms of standardization. Studies have shown that the proportion of PCPs using cognitive tests is relatively low. Most FMRs in this study used cognitive tests when cognitive impairment was suspected. Improving work experience with these tests during the training process may help increase their application in primary care. Cognitive and mental screening will be highly beneficial due to the importance of early diagnosis of dementia in primary care.

Higher rates of screening patients for depression when cognitive disorders are suspected have been reported among primary care clinicians compared to neurologists (28). In a study involving nurses, the majority of participants correctly answered whether depression could be confused with dementia (30). Another study involving GPs showed that awareness that the evaluation of depression is part of the diagnostic process for dementia was not as high as awareness that the assessment of dementia also requires cognitive evaluation (31). The great majority of the FMRs in the present study also reported evaluating patients with suspected dementia for depression. Research shows that depression is associated with the incidence of dementia through various psychological and physiological mechanisms. Depression also constitutes part of the prodromal and early stages of dementia. Reverse causation is also possible when depressive symptoms derive from the neuropathology of dementia, which occurs years before the onset of clinical dementia. Depression may constitute a risk factor for dementia, although dementia can also cause depression at more

advanced ages (32). In the light of this relationship, the optimal approach should also involve evaluating depression in patients with suspected dementia at an advanced age.

The FMRs in this study exhibited a positive attitude toward dementia. Studies have shown that positive attitudes among healthcare professionals are associated with better patient satisfaction and adherence to treatment (9, 30, 33). A study from Hong Kong also reported positive attitudes toward early diagnosis among physicians (23). Other studies also concluded that physicians exhibited positive attitudes toward patients with dementia (11, 21, 29). A positive attitude toward patients is important, particularly in the context of elderly individuals, since this can affect patient satisfaction and adherence to treatment. A previous study showed that geriatric training positively affected attitudes toward elderly patients (34). A statistically significant association was found between knowledge of dementia and attitudes toward the condition in the present study. A positive attitude may encourage the desire for information on the subject. A previous study involving community HCWs showed a similar association between knowledge and attitude (21). Although primary care provides an opportunity to identify patients with dementia, negative attitudes may discourage patients from freely describing their symptoms and may lead to avoidance behaviors. A positive attitude on the part of physicians toward this disease, which is highly prevalent in old age, will therefore be particularly valuable in terms of a healthy doctor-patient relationship.

This study was limited to family medicine residents, and assessments of family physicians and family medicine specialists working in the field were not conducted. The cross-sectional design also limits our ability to infer causality. The data collection method used in this study, the Google Forms survey, also has certain limitations. In particular, participation in online surveys is subject to volunteer bias, and the pressure to provide correct answers, as well as recall bias and misreporting, may affect the validity of the results. Future research should explore longitudinal designs to assess the impact of enhanced training programs on dementia care practices. Additionally, qualitative studies could provide deeper insights into the barriers and facilitators of dementia care among family medicine residents.

#### CONCLUSION

A large proportion of the physicians in this study were interested in actively screening for dementia and attending education sessions about the disease. While their knowledge of dementia was limited, their attitudes toward it were positive. However, the level of use of cognitive tests among the physicians was markedly low. Importantly, the desire to screen for early signs of dementia was a strong predictor of both dementia knowledge and attitudes toward the disease.

In order to address these findings, residency programs should integrate more comprehensive dementia training, encompassing both theoretical knowledge and practical skills. Postgraduate training opportunities in dementia care should be expanded to ensure ongoing professional development and competency. The adoption of widely recognized cognitive tests such as the MMSE and Clock Drawing test should be encouraged, with appropriate training being given on their administration and interpretation. Training programs must also emphasize fostering positive attitudes toward dementia to enhance patient care and outcomes.

By addressing these gaps and implementing the recommended training programs, we can improve the quality of dementia care provided by future family physicians, ultimately benefiting both patients and the healthcare system as a whole.

**Acknowledgments:** The authors would like to thank all participants for their time and excellent cooperation.

Author contribution: All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by Seniz Sengul, Mustafa Kursat Sahin, Mustafa Fevzi Dikici. The first draft of the manuscript was written by Seniz Sengul and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

**Conflict of interests:** The authors have no relevant financial or non-financial interests to disclose.

**Ethical approval:** This study was approved by the Ondokuz Mayıs University Clinical Research Ethics Committee (Date: 23.02.2022, Decision No: OMUKAEK 2022/89). The ethical principles stated in the latest revision of the Declaration of Helsinki and good clinical practice standards were applied.

**Funding** The authors did not receive support from any organization for the submitted work.

Peer-review: Externally peer-reviewed.

#### REFERENCES

1. World Health Organization. Towards a dementia plan: A WHO guide. 2018.

- 2. Patterson C. World Alzheimer Report 2018 The state of the art of dementia research: New frontiers [Report]: Alzheimer's Disease International; 2018.
- Mansfield E, Noble N, Sanson-Fisher R, Mazza D, Bryant J. Primary care physicians' perceived barriers to optimal dementia care: A systematic review. Gerontologist 2019;59(6):e697-e708.
- Wangler J, Jansky M. Factors influencing general practitioners' perception of and attitude towards dementia diagnostics and care-results of a survey among primary care physicians in Germany. Wien Med Wochenschr 2021;171(7-8):165-73.
- Galvin JE, Sadowsky CH. Practical guidelines for the recognition and diagnosis of dementia. Journal of the American Board of Family Medicine 2012;25(3):367-82.
- 6. British Columbia Ministry of Health. Cognitive impairment- recognition, diagnosis and management in primary care 2016.
- Lo IL, Zeng W, Lei CI, Lam C, Lou HL. Knowledge, attitude and preventive practice on dementia care among primary health professionals in Macao. J Prev Alzheimers Dis 2020;7(2):83-6.
- Wang M, Xu X, Huang Y, Shao S, Chen X, Li J, et al. Knowledge, attitudes and skills of dementia care in general practice: A cross-sectional study in primary health settings in Beijing, China. BMC Fam Pract 2020;21(1):89.
- Zhao W, Moyle W, Wu MW, Petsky H. Hospital healthcare professionals' knowledge of dementia and attitudes towards dementia care: A crosssectional study. J Clin Nurs 2022;31(13-14):1786-99.
- 10. Jennings AA, Foley T, Walsh KA, Coffey A, Browne JP, Bradley CP. General practitioners' knowledge, attitudes and experiences of psychological managing behavioural and symptoms of dementia: protocol of a mixed methods systematic review and metaethnography. Syst Rev 2018;7(1):62.
- 11.Tang EYH, Birdi R, Robinson L. Attitudes to diagnosis and management in dementia care: views of future general practitioners. Int Psychogeriatr 2018;30(3):425-30.
- 12.Kalin L, Kinder N, Eckstrom E. Dementia & Delirium. 2019 [cited 2022/06/07]. In: Behavioral medicine: A guide for clinical practice, 5ed [Internet]. New York, NY: McGraw-Hill Education, [cited 2022/06/07]. Erişim Adresi: https://accessmedicine.mhmedical.com/content.a spx?bookid=2747&sectionid=230251761.

- 13. Heim S, Busa C, Pozsgai E, Csikos A, Papp E, Pakaski M, et al. Hungarian general practitioners' attitude and the role of education in dementia care. Prim Health Care Res Dev 2019;20:e92.
- Helm L, Balzer K, Behncke A, Eisemann N, Kopke S. Patients with dementia in acute care hospitals: A cross-sectional study of physicians' experiences and attitudes. Z Gerontol Geriatr 2018;51(5):501-8.
- 15.Annear MJ, Toye CM, Eccleston CE, McInerney FJ, Elliott KE, Tranter BK, et al. Dementia knowledge assessment scale: Development and Preliminary psychometric properties. J Am Geriatr Soc 2015;63(11):2375-81.
- 16.Akyol MA, Gonen Senturk S, Akpinar Soylemez B, Kucukguclu O. Assessment of dementia knowledge scale for the nursing profession and the general population: Cross-cultural adaptation and psychometric validation. Dement Geriatr Cogn Disord 2021;50(2):170-7.
- 17.O'Connor ML, McFadden SH. Development and psychometric validation of the dementia attitudes scale. International Journal of Alzheimer's Disease 2010;2010:1-10.
- Cetinkaya A, Elb IH, Altan S, Rahman S, AydemIr O. Adaptation of the dementia attitudes scale into Turkish. Noro Psikiyatr Ars 2020;57(4):325-32.
- 19. Prorok JC, Stolee P, Cooke M, McAiney CA, Lee L. Evaluation of a dementia education program for family medicine residents. Can Geriatr J 2015;18(2):57-64.
- 20.Somme D, Gautier A, Pin S, Corvol A. General practitioner's clinical practices, difficulties and educational needs to manage Alzheimer's disease in France: Analysis of national telephone-inquiry data. BMC Fam Pract 2013;14(1):81.
- 21.Wang Y, Xiao LD, Luo Y, Xiao SY, Whitehead C, Davies O. Community health professionals' dementia knowledge, attitudes and care approach: A cross-sectional survey in Changsha, China. BMC Geriatr 2018;18(1):122.
- 22.Lerner BS, Kalish V, Ledford CJW. Exploring residents' skills in diagnosing dementia: The unexpected dissonance between ability and confidence. Fam Med 2017;49(6):460-3.
- 23.Leung CW, Lam TP, Wong KW, Chao VKD. Early detection of dementia: The knowledge and attitudes of primary care physicians in Hong Kong. Dementia (London) 2020;19(3):830-46.
- 24.Subramaniam M, Ong HL, Abdin E, Chua BY, Shafie S, Siva Kumar FD, et al. General

practitioner's attitudes and confidence in managing patients with dementia in Singapore. Ann Acad Med Singap 2018;47(3):108-18.

- 25.Lee L, Weston WW, Hillier LM. Education to improve dementia care: Impact of a structured clinical reasoning approach. Fam Med 2018;50(3):195-203.
- 26.Sannemann L, Muller T, Waterink L, Zwan M, Wimo A, Stomrud E, et al. General practitioners' attitude toward early and pre-dementia diagnosis of AD in five European countries-A MOPEAD project survey. Alzheimers Dement (Amst) 2021;13(1):e12130.
- 27.Petrazzuoli F, Vinker S, Koskela TH, Frese T, Buono N, Soler JK, et al. Exploring dementia management attitudes in primary care: a key informant survey to primary care physicians in 25 European countries. Int Psychogeriatr 2017;29(9):1413-23.
- 28.Bernstein A, Rogers KM, Possin KL, Steele NZR, Ritchie CS, Kramer JH, et al. Dementia assessment and management in primary care settings: a survey of current provider practices in the United States. BMC Health Serv Res 2019;19(1):919.
- 29. Thyrian JR, Hoffmann W. Dementia care and general physicians--a survey on prevalence, means, attitudes and recommendations. Cent Eur J Public Health 2012;20(4):270-5.
- 30.Strom BS, Engedal K, Andreassen L. Nursing staff's knowledge and attitudes toward dementia: A pilot study from an Indian perspective. Dement Geriatr Cogn Dis Extra 2019;9(3):352-61.
- 31.Murphy K, O'Connor DA, Browning CJ, French SD, Michie S, Francis JJ, et al. Understanding diagnosis and management of dementia and guideline implementation in general practice: A qualitative study using the theoretical domains framework. Implement Sci 2014;9(1):31.
- 32.Livingston G, Huntley J, Sommerlad A, Ames D, Ballard C, Banerjee S, et al. Dementia prevention, intervention, and care: 2020 report of the Lancet Commission. Lancet 2020;396(10248):413-46.
- 33.Keogh B, Ting To W, Daly L, Hynes G, Kennelly S, Lawlor B, et al. Acute hospital staff's attitudes towards dementia and perceived dementia knowledge: a cross-sectional survey in Ireland. BMC Geriatr 2020;20(1):376.
- 34.Tufan F, Yuruyen M, Kizilarslanoglu MC, Akpinar T, Emiksiye S, Yesil Y, et al. Geriatrics education is associated with positive attitudes toward older

people in internal medicine residents: a multicenter study. Arch Gerontol Geriatr 2015;60(2):307-10.