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Functional food awareness and mediterranean diet adherence in healthcare and non-healthcare workers

Concienciación sobre los alimentos funcionales y adherencia a la dieta mediterránea en trabajadores sanitarios y no sanitarios

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ABSTRACT

Introduction: Functional foods and adherence to the Mediterranean diet are strongly associated with improved prevention of chronic diseases. This study aims to compare functional food awareness and Mediterranean diet adherence between healthcare and non-healthcare professionals.

Methods: This cross-sectional, descriptive-analytical study was conducted with 195 volunteers aged 18-65 employed at a private company. Data collection was performed via face-to-face surveys using a demographic information form, the Functional Foods Knowledge Scale, and the Mediterranean Diet Adherence Assessment Scale (MEDAS).

Results: Healthcare professionals had significantly higher scores than non-healthcare professionals in both adherence to the Mediterranean diet (MEDAS: 8.07 (1.75) vs. 7.53 (1.77); $p = 0.032$) and functional food knowledge (FFKS: 20.54 (6.21) vs. 17.61 (6.73); $p = 0.002$). Demographic variables (age, gender, and education) were not significant predictors for either of these outcomes, with the models showing minimal explanatory power ($R^2 \leq 0.073$; $p > 0.05$).

Conclusions: Elevated levels of nutrition knowledge, health literacy, and awareness among healthcare professionals may be associated with greater functional food knowledge and superior adherence to the Mediterranean diet.

Funding: This study was self-funded by the authors.

Keywords: Functional Food; Diet; Mediterranean; Health Behavior; Health Personnel; Health Knowledge; Attitudes; Practice

RESUMEN

Introducción: Los alimentos funcionales y el cumplimiento de la dieta mediterránea están estrechamente relacionados con una mayor prevención de las enfermedades crónicas. El objetivo de este estudio es comparar el conocimiento sobre los alimentos funcionales y el cumplimiento de la dieta mediterránea entre profesionales sanitarios y no sanitarios.

Métodos: Este estudio transversal, descriptivo-analítico se llevó a cabo con 195 voluntarios de entre 18 y 65 años empleados en una empresa privada. La recopilación de datos se realizó mediante encuestas presenciales utilizando un formulario de información demográfica, la Escala de Conocimiento sobre Alimentos Funcionales y la Escala de Evaluación de la Adhesión a la Dieta Mediterránea (MEDAS).

Resultados: Los profesionales sanitarios obtuvieron puntuaciones significativamente más altas que los no profesionales sanitarios tanto en el cumplimiento de la dieta mediterránea (MEDAS: 8,07 (1,75) frente a 7,53 (1,77); p = 0,032) como en los conocimientos sobre alimentos funcionales (FFKS: 20,54 (6,21) frente a 17,61 (6,73); p = 0,002). Las variables demográficas (edad, sexo y nivel educativo) no fueron predictores significativos para ninguno de estos resultados, y los modelos mostraron un poder explicativo mínimo ($R^2 \leq 0,073$; p > 0,05).

Conclusiones: Un mayor nivel de conocimientos sobre nutrición, alfabetización sanitaria y concienciación entre los profesionales sanitarios podría estar relacionado con un mayor conocimiento de los alimentos funcionales y un mayor cumplimiento de la dieta mediterránea.

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Palabras clave: Alimentos funcionales; Dieta mediterránea; Conducta de salud; Personal de salud; Conocimientos, actitudes y práctica en salud.

HIGHLIGHTS

- Healthcare professionals demonstrated greater functional food knowledge and greater adherence to the Mediterranean diet than non-healthcare professionals.
- Occupational field was independently associated with both outcomes, whereas BMI, age, gender, and educational status showed no significant effects.
- Knowledge alone may not fully explain dietary behaviors, highlighting the importance of behavioral and environmental determinants.
- Workplace-based multidisciplinary nutrition interventions may help improve sustainable healthy eating across occupational groups.

INTRODUCTION

The science of functional foods lies at the convergence of two major aspects in our lives: diet and health. Beyond their basic nutritional value, functional foods provide positive effects on health that are scientifically proven. They support physiological functions and may reduce the risk of chronic diseases. Such foods may naturally have these beneficial effects naturally or be specifically enriched or modified.[1] A functional food may be natural, have a component added, have a component removed, have components modified, improve bioavailability, or combine these changes. Functional foods go beyond meeting basic nutritional needs; they contain bioactive components that benefit health and help mitigate the risk of chronic diseases.[2] However, functional foods are not drugs and, on their own, are insufficient to treat diseases. Their efficacy depends on individual differences, such as age, genetics, microbiota, and lifestyle.[3] The Mediterranean diet (MD) is considered a "functional diet" owing to its proven health benefits. These benefits are derived from its high content of polyphenols, including phenolic compounds; fiber; phytosterols; resveratrol; monounsaturated and polyunsaturated fatty acids; vitamins; and minerals.[4] The MD stands out as one of the dietary patterns that most strongly incorporates functional foods in their natural form.[3] The primary shared mechanisms between functional foods and the Mediterranean diet include the suppression of inflammation, reduction of oxidative stress, and support of the gut microbiota.[5] Health professionals have more knowledge of diet than non-health professionals. Health professionals view functional foods as a crucial component for preventing cardiovascular diseases, managing obesity and metabolic syndrome, and boosting the immune system.[6] Dietitians play an active role on this issue. Physicians often take a more cautious approach.[1] Nonetheless, functional foods are promising for modern, prevention-focused healthcare. Their widespread impact necessitates a team effort, requiring healthcare professionals, nutrition scientists, policymakers, and the food industry to collaborate closely.[7] Non-healthcare professionals usually possess limited knowledge of functional foods. However, awareness is rising, mainly among young adults through social media and digital platforms, where these individuals seek information and aim to incorporate functional foods into their diets.[8] Therefore, this study aims to compare functional food

knowledge and adherence to the Mediterranean diet between healthcare and non-healthcare professionals.

METHODS

Study Sample

This cross-sectional study was conducted through face-to-face interviews with employees at Fortrea Turkey Clinical Research Ltd. Co. in Istanbul. Data collection spanned from November 2024 to March 2026. The sample comprised 195 volunteers aged 18-65, who worked at Fortrea Turkey Clinical Research Ltd. Co. and volunteered for the study. All participants had been employed for at least 1 year either in the healthcare field (physicians, nurses, dietitians, pharmacists) or in non-healthcare fields (teachers, engineers, civil servants). They joined the study voluntarily and signed informed consent. Exclusion criteria were: pregnancy, breastfeeding, chronic illness, or nutrition/diet counseling in the past 6 months. The study followed STROBE reporting guidelines. The completed STROBE checklist has been provided as Supplementary Digital Content (SDC 1).

Dependent and Independent Variables

In this study, the independent variable was participants' occupational status (healthcare vs. non-healthcare professionals), whereas the dependent variables were functional food knowledge (FFKS) and Mediterranean diet adherence.

Procedures

Researchers collected data through face-to-face interviews between November 2024 and March 2026. They used a demographic form, the Functional Foods Knowledge Scale (FFKS), and the Mediterranean Diet Adherence Screener (MEDAS). Anthropometric measurements were performed according to standardized protocols. Body weight was assessed using a portable OMRON BF-511 body composition analyzer, while height was measured with a tape measure to the nearest centimeter, with participants standing upright and barefoot. Body mass index (BMI) was calculated as weight (kg) divided by height in meters squared (m^2). BMI categories were defined based on World Health Organization (WHO) criteria as follows: <18.5

kg/m² (underweight), 18.5–24.9 kg/m² (normal weight), 25.0–29.9 kg/m² (overweight), and ≥30 kg/m² (obese). [9] The FFKS contains 34 items and evaluates knowledge regarding the definition, health effects, and use of functional foods. Items were scored dichotomously (1 = correct, 0 = incorrect or "don't know"), with total scores ranging from 0 to 34. Higher scores indicate greater knowledge. The scale was applied in its original form, and total scores were used in the analyses. [10] The MEDAS consists of 14 yes/no questions, where score of 7 or more represents acceptable adherence, while score of 9 or more indicates strict adherence to the Mediterranean diet. [11]

Statistical analysis

Sociodemographic characteristics were summarized using descriptive statistics (n, %, mean, and standard deviation). Normality was assessed using the Kolmogorov–Smirnov test alongside skewness and kurtosis coefficients; values within ±1.5 were considered indicative of an approximately normal distribution, thereby justifying the use of parametric tests. Independent samples t-tests were conducted to compare two groups, and effect sizes (Cohen's d) along with 95% confidence intervals were reported. Two-way ANOVA was conducted to examine the effects of occupational field, BMI, and physical activity on Mediterranean Diet Adherence Screener (MEDAS) scores and functional food knowledge scores (FFKS); partial η^2 values were reported, and the homogeneity of variances was evaluated using Levene's test. Additionally, multiple linear regression analysis was performed to evaluate the predictive effects of age, gender, and education level; reporting β coefficients, standard errors, t-values, p-values, and model fit indices (R, R^2, adjusted R^2). The Durbin–Watson statistic was utilized to assess autocorrelation. Statistical analyses were conducted using IBM SPSS Statistics version 25.0 (IBM Corp., Armonk, NY, USA), and p-values < 0.05 were considered statistically significant.

Ethical aspect

The procedures of the study were conducted in accordance with the standards and ethical criteria outlined in the Declaration of Helsinki. Permission was obtained from the healthcare institution where the study was conducted, and ethical approval was granted by the Istanbul

Kültür University Non-Interventional Research Ethics Committee (No. 2024-11/05, dated December 25, 2024).

RESULTS

The mean age of the participants was 38.18 (6.82), and the gender distribution was similar across the groups. Postgraduate education was markedly higher among healthcare professionals (35% vs. 20.2%). The average BMI of the participants was 25.63 (5.13) kg/m²; specifically, it was 25.62 (5.23) kg/m² in healthcare professionals and 25.63 (5.01) kg/m² in non-healthcare professionals. Physical activity levels were comparable across the groups.

Table 1. Frequency Distribution of Participant Characteristics

Characteristic	Group	Healthcare professionals (100)		Non-healthcare professionals (95)	
		n	%	n	%
Gender	Female	68	68,0	62	65,3
	Male	32	32,0	33	34,7
Education	High school	11	11,0	25	26,3
	University	54	54,0	50	52,6
	Postgraduate	35	35,0	20	21,1
BMI (kg/m²)	≤24,99	49	49,0	43	45,3
	25-29,99	22	22,0	26	27,4
	≥30,00	29	29,0	26	27,4
Physical Activity	Yes	45	45,0	41	43,2
	No	27	27,0	30	31,6
	Sometimes	28	28,0	24	25,3

n: Frequency, BMI: Body Mass Index, SD: Standard Deviation

The study demonstrated significant differences in scores on the Functional Foods Knowledge Scale and MEDAS between the group of healthcare professionals and non-healthcare professionals ($p < 0.05$). Effect sizes were found to be moderate for the FFKS (Cohen's $d = 0.45$) and small-to-moderate for MEDAS (Cohen's $d = 0.31$), suggesting that the differences between groups were statistically significant and of moderate magnitude. (Table 2).

Table 2. Scale Scores of the Participants (n=195)

Scale	Group	n	Mean	SD	t	p	Cohen's d	95% CI of the Difference	
								Lower	Upper
FFKS	Healthcare professionals	100	20,54	6,21	3.161	0.002	0,45	1,10185	4,75709
	Non-healthcare professionals	95	17,61	6,73				1,09777	4,76118
MEDAS	Healthcare professionals	100	8,07	1,75	2.159	0.032	0,31	0,04703	1,04033
	Non-healthcare professionals	95	7,53	1,77				0,04688	1,04049

n: Frequency, SD: Standard Deviation, t: t-test, CI: Confidence Interval, FFKS: Functional Food, MEDAS: Mediterranean Diet Adherence Screener

The ANOVA results indicated that occupational status had a significant effect on both MEDAS ($F = 4.08$, $p = 0.045$, $\eta^2 = 0.021$) and FFKS ($F = 8.02$, $p = 0.005$, $\eta^2 = 0.041$), with healthcare professionals scoring higher than non-healthcare professionals. BMI and the Group × BMI interaction were not significant for either scale ($p>0.05$), indicating that these effects are independent of BMI. While the overall model was significant for functional foods ($F=2.460$, $p=0.035$, $\eta^2=0.061$), it was not significant for MEDAS ($F=1.52$, $p=0.185$, $\eta^2=0.039$); furthermore, variance homogeneity assumptions were met (Table 3).

As shown in Table 4; age, gender, and education were not significant predictors of Mediterranean diet adherence ($R^2 = 0.016–0.073$) or functional food knowledge as measured by the FFKS ($R^2 = 0.016–0.042$) among healthcare and other professionals. Limited or borderline negative trends were observed between age and functional food knowledge among healthcare professionals, as well as between education and Mediterranean diet adherence among non-healthcare professionals ($\beta = -0.215$; $p = 0.055$). Durbin–Watson values (1.981–2.104) indicated no autocorrelation. Overall, demographic variables did not emerge as strong predictors, although subtle trends may vary depending on the occupational field.

Table 3. Association of Occupation and BMI with MEDAS and FFKS Score

Scale	Group	BMI	n	Mean	SD	F	p	η²
Effect of Occupational Field and BMI on Adherence to the MEDAS	Healthcare professionals	≤24,99	49	8,08	1,75			
		25–29,99	22	8,36	1,76			
		≥30,00	29	7,83	1,75			
	Total		100	8,07	1,75			
	Non-healthcare professionals	≤24,99	43	7,37	1,93			
		25–29,99	26	7,38	1,75			
		≥30,00	26	7,92	1,49			
	Total		95	7,53	1,77			
	Overall Total		195	7,81	1,77			
	ANOVA							
	Group					4,08	0,045*	0,021
	BMI					0,17	0,843	0,002
	Group × BMI					1,37	0,257	0,014
	Model (Overall)					1,52	0,185	0,039
	Levene's Test					1,002	0,415	
Effect of Occupational Field and BMI on Functional Food Knowledge	Healthcare professionals	≤24,99	49	21,12	5,16			
		25-29,99	22	20,50	8,04			
		≥30,00	29	19,59	6,35			
	Total		100	20,54	6,20			
	Non-healthcare professionals	≤24,99	43	17,40	6,21			
		25-29,99	26	16,77	7,79			
		≥30,00	26	18,81	6,54			
	Total		95	17,61	6,74			
	Overall Total		195	19,11	6,61			
	ANOVA							
	Group					8,020	0,005	0,041
	BMI					0,156	0,856	0,002
	Group × BMI					1,015	0,365	0,011
	Model (Overall)					2,460	0,035	0,061
	Levene's Test					2,263	0,050	

BMI: Body Mass Index, n: Frequency, SD: Standard Deviation, t: t-test, F: ANOVA, p<0.05, η²: effect size, FFKS: Functional Food Knowledge Scale; MEDAS: Mediterranean Diet Adherence Screener

Table 4. Effects of Demographics on MEDAS and FFKS by Occupation

Scale	Occupational Field	Variable	B	SD	β	t	p	%95 CI	Model Statistics
Effect of Occupational Field and Demographic Variables on Adherence to the MEDAS	Healthcare Professionals	Constant	9,805	1,466	—	6,686	<0,001	6,894 – 12,716	
		Age	-0,13	0,228	-0,068	-0,57	0,570	-0,583 – 0,323	
		Gender	-0,17	0,441	-0,046	-0,385	0,701	-1,045 – 0,705	
		Educational Status	-0,272	0,284	-0,099	-0,958	0,341	-0,835 – 0,292	
		Model summary							R = 0,125; R² = 0,016; Adj. R² = -0,015
		ANOVA (Model)							F(3,96) = 0,507; p = 0,678
		Durbin–Watson							2,104
	Non-healthcare Professionals	Constant	9,932	1,572	—	6,319	<0,001	6,809 – 13,054	
		Age	0,174	0,178	-0,106	0,978	0,331	-0,180 – 0,528	
		Gender	-0,576	0,392	-0,156	-1,469	0,145	-1,355 – 0,203	
		Educational Status	-0,557	0,286	-0,215	-1,945	0,055	-1,125 – 0,012	
		Model summary							R = 0,271; R² = 0,073; Adj. R² = 0,042
		ANOVA (Model)							F(3,90) = 2,371; p = 0,076
		Durbin–Watson							2,004

n: Frequency, SD: Standard Deviation, t: t-test, F: ANOVA, p<0,05, CI: Confidence Interval, η^2: effect size, FFKS: Functional Food Knowledge Scale; MEDAS: Mediterranean Diet Adherence Screener

Table 4 (continued)

Scale	Occupational Field	Variable	B	SD	β	t	p	%95 CI	Model Statistics
Effects of Occupational Field and Demographic Variables on Functional Food Knowledge	Healthcare Professionals	Constant	20,954	5,134	—	4,081	<0,001	10,763 – 31,145	
		Age	-1,454	0,799	-0,214	-1,820	0,072	-3,041 – 0,132	
		Gender	0,957	1,543	0,072	0,62	0,537	-2,106 – 4,020	
		Educational Status	0,551	0,994	0,057	0,555	0,580	-1,421 – 2,523	
		Model summary							R = 0,204; R² = 0,042; Adj. R² = 0,012
		ANOVA (Model)							F(3,96) = 1,392; p = 0,250
		Durbin–Watson							1,981
	Non-healthcare Professionals	Constant	22,272	6,174	—	3,607	0,001	10,006 – 34,537	
		Age	-0,339	0,7	-0,054	-0,484	0,629	-1,729 – 1,051	
		Gender	0,644	1,540	0,046	0,418	0,677	-2,416 – 3,704	
		Educational Status	-1,132	1,124	-0,115	-1,007	0,317	-3,366 – 1,101	
		Model summary							R = 0,125; R² = 0,016; Adj. R² = -0,017
		ANOVA (Model)							F(3,90) = 0,474; p = 0,701
		Durbin–Watson							2,075

n: Frequency, SD: Standard Deviation, t: t-test, F: ANOVA, p<0.05, CI: Confidence Interval, η^2: effect size, FFKS: Functional Food Knowledge Scale; MEDAS: Mediterranean Diet Adherence Screener

Table 5 presents the results of the multiple linear regression analysis, controlling for demographic variables. The analysis revealed that occupation was a statistically significant predictor of both functional food knowledge (p = 0.005) and adherence to the Mediterranean diet (p = 0.011). In contrast, age and educational status were not significant predictors, although educational status exhibited a borderline association with Mediterranean diet adherence (p = 0.055).

Table 5. Effects of Occupational Field on FFKS and MEDAS Scores After Adjusting for Demographic Variables: Results of Multiple Linear Regression Analysis

Dependent Variable	Predictors	B	SD	β	t	p	95% CI
FFKS	Constant	26,858	4,084	—	6,576	<0,001	18,802 – 34,914
	Occupational Group	-2,779	0,97	-0,21	-2,867	0,005	-4,692 – -0,867
	Educational Status	-0,416	0,737	-0,042	-0,564	0,573	-1,870 – 1,038
	Age	-0,643	0,487	-0,099	-1,321	0,188	-1,604 – 0,317
	Model Summary	R^2=0,058			F(3,190)=3,923	0,01	DW=2,054
MEDAS	Constant	10,343	1,103	—	9,376	<0,001	8,167 – 12,519
	Occupational Group	-0,67	0,262	-0,189	-2,558	0,011	-1,186 – -0,153
	Educational Status	-0,384	0,199	-0,146	-1,93	0,055	-0,777 – 0,008
	Age	0,009	0,132	0,005	0,072	0,943	-0,250 – 0,269
	Model Summary	R^2=0,045			F(3,190)=2,958	0,034	DW=2,048

FFKS: Functional Food Knowledge Scale; MEDAS: Mediterranean Diet Adherence Screener; B: Unstandardized regression coefficient; β: Standardized coefficient, CI: Confidence Interval; DW: Durbin–Watson.

DISCUSSION

According to the study findings, the participants' average age was 38.18 (6.82) years. Notably, all participants working in the healthcare field held at least a bachelor's degree (54%), with a substantial proportion (35%) having completed postgraduate education. While the majority of participants working in non-healthcare fields (52.6%) were college graduates, the rate of postgraduate education was markedly lower compared to healthcare professionals, and this group also included high school and middle school graduates. The fact that individuals working in the healthcare field possess diverse areas of expertise and undergo long, structured professional training programs is a key factor explaining the higher and more homogeneous educational level within this group. Similarly, the literature indicates that the educational status of health professionals is positively correlated with their knowledge of nutrition and healthy lifestyle behaviors.[12]

The participants' average BMI was determined to be 25.63 (5.13) kg/m². The average BMI values for healthcare professionals and non-healthcare professionals were found to be quite similar (25.62 (5.23) kg/m² and 25.63 (5.01) kg/m², respectively). In a study conducted at family health centers in Türkiye, it was reported that 37.8% of healthcare professionals were overweight and 11.8% were obese.[13] The literature indicates that although healthcare professionals possess a high level of knowledge regarding general nutrition and functional foods, this knowledge does not always translate into personal dietary habits or clinical practice.[14] Healthcare professionals are expected to possess a high level of health knowledge, promote lifestyle changes, and serve as role models.[15]

Since the majority of the sample in our study consists of female participants, comparative analyses based on gender will be limited. In addition, no significant differences were found in the analyses comparing genders in our study, and this is anticipated to be due to the gender distribution among the professionals in the sample. Indeed, it has been reported that the proportion of female employees in the healthcare field is high, with women constituting the vast majority of the healthcare workforce in numerous countries. [16] Additionally, a higher participation rate among women is typically observed in health-related and general

population studies, and this situation may influence the sample structure, particularly in self-report-based research.[17] The proportion of individuals engaging in regular physical activity was 45.0% among healthcare professionals and 43.2% among non-healthcare professionals. These rates appear higher than values reported in the literature; indeed, while the rate of physical inactivity among primary healthcare professionals is reported as 45.6%, the prevalence of physical inactivity in Türkiye stands at approximately 44.4%. [15,18] The presence of a workplace gym, organizational policies encouraging physical activity, and suitable physical environmental conditions may be among the factors increasing the likelihood of engaging in regular physical activity. Nonetheless, given the self-reported nature of data, the possibility of overreported physical activity levels due to factors such as social desirability and recall bias cannot be discounted (Table 1).

In this study, statistically significant differences ($p < 0.05$) were found in FFKS and MEDAS scores between the healthcare and non-healthcare groups. It was found that FFKS scores among participants working in the healthcare field were significantly higher than those of participants working in non-healthcare fields ($t = 3.161$; $p = 0.043$). This finding may be attributed to healthcare professionals' higher levels of nutrition knowledge, health literacy, and awareness of the relationship between nutrition and health. A study conducted in Türkiye also found that university students majoring in nutrition and health education had significantly higher knowledge of functional foods than students in non-health fields.[19] The literature reports that healthcare professionals have greater knowledge and awareness of functional foods than the general population.[20] In this study, healthcare professionals' MEDAS scores were significantly higher than those of non-healthcare professionals ($t=2.159$; $p=0.032$), suggesting greater adherence to the Mediterranean diet. Similarly, it has been reported that healthcare professionals exhibit moderate to high adherence to the Mediterranean diet, which is positively associated with nutritional knowledge.[21,22] Additionally, a higher level of knowledge regarding functional foods is associated with better nutritional quality and healthy eating behaviors.[23] Healthcare professionals' quality of life, health literacy, dietary habits, and access to information may be associated with their higher functional food knowledge and greater adherence to the Mediterranean diet. This may be

related to factors such as professional education, health awareness, ease of access to information, and lifestyle. The findings are consistent with the literature and suggest that healthcare professionals may have the potential to serve as role models in promoting healthy eating behaviors within the general population. However, the borderline significance level for the MEDAS scores and the small-to-moderate effect size indicate that the difference between the groups is limited. Indeed, the literature emphasizes that dietary behaviors are influenced by numerous factors, and that a single variable cannot fully explain them.[24] Therefore, the findings must be interpreted with caution (Table 2).

The results of the combined analysis of variance indicate that healthcare professionals were significantly associated with both the MEDAS and the FFKS (MEDAS: $F = 4.08$, $p = 0.045$, $\eta^2 = 0.021$; FFKS: $F = 8.020$, $p = 0.005$, $\eta^2 = 0.041$). However, the low eta-squared values suggest that the occupational variable's effect is limited. Studies on the Mediterranean diet indicate higher adherence among healthcare professionals.[25] Similarly, individuals in the healthcare field have higher awareness of functional foods, as evidenced by their greater knowledge of these products.[1] The relationship between BMI and healthy eating is complex and multifactorial. One study found no direct relationship between BMI and diet quality in adults; instead, diet quality was associated with nutritional knowledge and awareness of healthy lifestyle.[26] A similar pattern is observed in individuals' level of knowledge regarding functional foods; in this case, knowledge level and health awareness may emerge as important factors regardless of BMI.[23] The lack of significance for the BMI variable and the Group × BMI interaction suggests that BMI may not be a strong determinant of dietary behaviors in this sample.[27] The overall significance of the model regarding functional foods indicates that the selected variables are more effective in explaining knowledge levels in this area. However, the lack of general significance of the MEDAS model suggests that adherence to the Mediterranean diet is influenced not only by occupation and BMI but also by numerous factors, such as cultural habits, socioeconomic status, and lifestyle.[28] (Table 3).

It was determined that the explanatory power of demographic characteristics among healthcare professionals was low and not statistically significant, indicating no distinct

differences among the variables.[29] Among non-healthcare professionals, although the explained variance was relatively higher, the models' explanatory power remained low. A borderline relationship approaching significance was found between education and MEDAS ($p = 0.055$). Overall, demographic variables appear to play a limited role in explaining the examined dietary behaviors and are not strong predictors.[30] (Table 4).

Table 5 shows that the occupation variable remains statistically significant for both the FFKS and MEDAS. This finding is consistent with the literature, which suggests that individuals working in the healthcare field may exhibit healthier dietary behaviors, potentially related to their professional training, health literacy, and access to nutrition-related information.[31]

In contrast, the lack of statistical significance for the age and education variables indicates that demographic factors play a limited role in explaining these behaviors. While the literature generally reports a positive association between educational status and nutrition knowledge and healthy eating behaviors, the absence of a significant relationship in this study suggests that eating behaviors cannot be explained solely by sociodemographic characteristics; instead numerous factors —such as socioeconomic status, physical and psychological factors, individuals' knowledge levels, health literacy, and lifestyle—play a role in this process.[30,32] The lack of a significant effect for the age variable may be attributed either to the study's homogeneous age distribution or to the fact that age alone is insufficient to explain behavioral changes.

Although the findings are statistically significant, they should be interpreted with caution due to the small effect sizes.

CONCLUSIONS

This study evaluated functional food knowledge (FFKS) and adherence to the Mediterranean diet (MEDAS) by comparing healthcare and non-healthcare professionals. The findings suggest that healthcare professionals may have higher FFKS scores and healthier dietary patterns compared to non-healthcare professionals. The weak but positive association between FFKS and MEDAS reflects the multifactorial nature of dietary behaviors. The findings may indicate that knowledge and awareness are associated with healthy lifestyle behaviors.

In this context, rather than relying solely on knowledge-based approaches, multidimensional strategies that support sustainable nutrition practices, encourage behavioral change, and consider the workplace environment may be associated with healthier eating habits. However, the cross-sectional nature of the study limits causal inference about the relationships among variables.

LIMITATIONS

This study has several limitations. First, due to its cross-sectional design, causal relationships cannot be established. The fact that the sample was drawn from a single private institution may limit the generalizability of the findings. The predominance of female participants and the relatively low number of male participants may have reduced the statistical power of gender-based comparisons. In addition, this imbalance in sample distribution may further limit the generalizability of findings, particularly those related to healthcare. Data collected through self-report methods may be subject to recall bias and social desirability bias. Furthermore, the small effect sizes and the limited explanatory power of the regression models reflect the multifactorial nature of dietary behaviors. Therefore, the findings should be interpreted with caution and supported by future studies with larger, more balanced samples.

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AUTHORS' CONTRIBUTIONS

Conceptualization, S.N., methodology, S.N., N.Ş., data analysis, S.N., N.B., data curation, N.Ş., S.N., writing—original draft preparation, S.N., writing—review and editing, S.N., N.Ş., N. B., supervision, S.N., N.Ş., project administration, S.N., N. B.

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CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

DATA AVAILABILITY

The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

REFERENCES

(1) Granato D, Barba FJ, Bursać Kovačević D, Lorenzo JM, Cruz AG, Putnik P. Functional Foods: Product Development, Technological Trends, Efficacy Testing, and Safety. *Annu Rev Food Sci Technol.* 2020;25(11):93–118.

(2) Ede G, Yalçın H. Attitudes of nutrition and dietetics students toward the consumption of artificial meat. *Akad Gida.* 2023;21(1):80–89.

(3) Bavaro AR, Tarantini A, Bruno A, Cardinali A. Functional foods in Mediterranean diet: Exploring the functional features of vegetable case-studies obtained also by biotechnological approaches. *Aging Clin Exp Res.* 2024;36(1):208.

(4) Christodoulou E, Deligiannidou GE, Kontogiorgis C, Koutelidakis AE. Natural functional foods as a part of the Mediterranean lifestyle and their association with psychological resilience and other health-related parameters. *Appl Sci.* 2023;13(7):4076.

(5) Hareer LW, Lau YY, Mole F, Albarqouni L. The effectiveness of the Mediterranean diet for primary and secondary prevention of cardiovascular disease: An umbrella review. *Nutr Diet.* 2025;82(1):8–41.

(6) Siro I, Kapolna E, Kapolna B, Lugasi A. Functional food: Product development, marketing and consumer acceptance—A review. *Appetite.* 2008;51(3):456–467.

(7) Fekete M, Lehoczki A, Kryczyk-Poprawa A, Varga P. Functional foods in modern nutrition science: Mechanisms, evidence, and public health implications. *Nutrients.* 2025;17(13):2153.

(8) Alkan ŞB, Öz H, Madalı KB, Kara HH. Comparison of students' attitudes and knowledge regarding functional foods in gastronomy, food science, and nutrition programs. *Food Sci Nutr.* 2025;13(6):70321.

(9) World Health Organization. Obesity: preventing and managing the global epidemic: report of a WHO consultation. Geneva: World Health Organization; 2000.

(10) Savur H. Development of a scale to determine the functional food knowledge level of university students [Master's thesis]. Konya: Selçuk University, Institute of Health Sciences; 2007.

(11) Pehlivanoğlu Ö, Balcıoğlu H, Ünlüoğlu İ. Turkish adaptation of the Mediterranean Diet Adherence Scale: validity and reliability. *Osmangazi Med J.* 2020;42(2):160–164.

(12) İnbaşı E, Yıldız N, Çelik A. Determination of nutrition knowledge level and exercise beliefs among academicians. *J Med Health Sci.* 2023;8(1):43–50.

(13) Sarı H, Kılınç Z, Soysal Ş, Özel M. Evaluation of the frequency and awareness of obesity among healthcare professionals. *Eur Rev Med Pharmacol Sci.* 2023;27(10):4639–4647.

(14) Khan IT, Anjum FM, Rauf A, Afzaal M. Awareness and consumption of functional foods in non-health professionals: A global perspective. *J Food Sci.* 2022;87(3):907–918.

(15) Younis J, Jiang H, Fan Y, Hui Z. Prevalence of overweight, obesity, and associated factors among healthcare professionals in the Gaza Strip, Palestine: A cross-sectional study. *Front Public Health.* 2023;11:1129797.

(16) Lotta G, Fernandez M, Pimenta D, Wenham C. Gender, race, and health workforce inequalities. *Lancet.* 2021;397(10276):1264–1272.

(17) Boniol M, McIsaac M, Xu L, Wuliji T, Diallo K, Campbell J. Gender equity in the health workforce: analysis of 104 countries. Geneva: World Health Organization; 2019.

(18) Abu Saad H, Low PK, Jamaluddin R, Chee HP. Level of physical activity and its associated factors among primary healthcare professionals in Perak, Malaysia. *Int J Environ Res Public Health.* 2020;17(16):5947.

(19) Jamil AT, Ismail A, Idris IB, et al. Levels of physical activity and its associated factors among healthcare professionals. *Malays J Public Health Med.* 2016;16:127–133.

(20) Karaagac M, Cetinkaya F. Evaluation of university students' knowledge and attitudes toward functional foods. *Beslenme ve Diyetetik Derg.* 2021;49(1):15–25.

(21) Ertas S, Yildiz E, Kilic A. Determination of knowledge and awareness levels of healthcare professionals about functional foods. *Gazi Saglik Bilimleri Derg.* 2020;5(2):85–93.

(22) Demirtas R, Karaagac M. Investigation of adherence to the Mediterranean diet and related factors in healthcare professionals. *Ankara Saglik Bilimleri Derg.* 2022;11(3):245–254.

(23) Martínez-González MA, Gea A, Ruiz-Canela M. The Mediterranean diet and cardiovascular health. *Nutrients.* 2021;13(7):2235.

(24) Lähteenmäki L. Consumers' perceptions of functional foods: A review. *Appetite.* 2019;140:104–112.

(25) Martínez-González MA, Gea A, Ruiz-Canela M. The Mediterranean Diet and Cardiovascular Health. *Circ Res.* 2019;124(5):779–798.

(26) Obeid CA, Gubbels JS, Jaalouk D, Oenema A. Adherence to the Mediterranean diet among adults in Mediterranean countries: A systematic literature review. *Eur J Nutr.* 2022;61(7):3327–3344.

(27) Contento IR. Nutrition education: linking research, theory, and practice. 3rd ed. Burlington (MA): Jones & Bartlett Learning; 2016.

(28) Hashim M, Radwan H, Ismail LC. Determinants for Mediterranean diet adherence beyond the boundaries: a cross-sectional study from Sharjah, the United Arab Emirates. *J Transl Med.* 2024;22:513.

(29) Baker MT, Lu P, Parrella JA, Leggette HR. Consumer Acceptance toward Functional Foods: A Scoping Review. *Int J Environ Res Public Health.* 2022;19(3):1217.

(30) Santos M, Assunção R. Food choice, nutrition, and public health. *Foods.* 2025;14(7):1243.

(31) Abodi M, Badiali M, Bettocchi S, Agostoni CV, Mazzocchi A. Determinants of adherence to the Mediterranean diet and weight in Italian adolescents: a comprehensive analysis. *Nutr Rev.* 2026 Feb 15:nuaf291.

(32) Olstad DL, McIntyre L. Educational attainment as a super determinant of diet quality and dietary inequities. *Adv Nutr.* 2025;16(9):100482.