FOOD and HEALTH

FOOD and HEALTH
E-ISSN 2602-2834

Food and Health 11(4), 342-352 (2025) • https://doi.org/10.3153/FH25029

Research Article

Evaluation of the relationship between metabolic syndrome knowledge, awareness and the MEDFICTS diet compliance among nutrition and dietetics students

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Cite this article as:
Selen, H., Kaya, R. (2025). Evaluation of the relationship between metabolic syndrome knowledge, awareness, and the MEDFICTS diet compliance among nutrition and dietetics students. Food and Health, 11(4), 342-352. https://doi.org/10.3153/FH25029

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Submitted: 20.02.2025
Revision requested: 28.04.2025
Last revision received: 28.04.2025
Accepted: 10.06.2025
Published online: 21.09.2025

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Available online at
http://jfhs.scientificwebjournals.com

ABSTRACT

This study was conducted to evaluate the relationship between metabolic syndrome knowledge and awareness and MEDFICTS diet compliance among Nutrition and Dietetics students based on sex, body mass index (BMI), and academic year. This descriptive cross-sectional study was conducted between January 1-31, 2025, with 204 students aged 18-25 from the Department of Nutrition and Dietetics at Ağrı İbrahim Çeçen University. Study data were collected using a questionnaire that included sociodemographic information, along with the "Metabolic Syndrome Knowledge and Awareness Scale (MSKAS)" and the "MEDFICTS Diet Assessment Questionnaire." The MSKAS consisted of subdimensions including identification, general health, awareness, and prevention, while the MEDFICTS diet was evaluated based on the total score. Since there was no cutoff point for MSKAS, higher scores indicated a higher level of metabolic syndrome knowledge and awareness. In the MEDFICTS diet questionnaire, an increase in score indicated higher intake of fat, saturated fat, and cholesterol in the diet. There was no statistically significant difference between male and female students in terms of MSKAS, its subdimensions, and MEDFICTS diet scores ($p>0.05$). The general health scores of students with a normal BMI were found to be significantly higher than those who were overweight or obese ($p=0.016$). However, MEDFICTS diet scores did not show a significant difference based on BMI ($p>0.05$). Fourth-year students had significantly higher identification and total MSKAS scores than all other years ($p<0.001$), while their awareness scores were significantly higher than those of second- and third-year students ($p=0.006$). However, MEDFICTS diet scores did not show a significant difference based on students' academic year ($p>0.05$). Although a negative correlation was observed between MSKAS, its subdimensions, and MEDFICTS diet scores, this relationship was not statistically significant. To prevent metabolic syndrome, it is essential to increase awareness and promote healthy eating habits. Therefore, there is a need for public health studies to increase awareness of metabolic syndrome.

Keywords: Body mass index, Dyslipidemia, MEDFICTS diet, Metabolic syndrome, Metabolic syndrome knowledge and awareness, Nutrition

Introduction

Metabolic syndrome (MetS) is a complex condition influenced by genetic and environmental factors, characterised by central obesity, Type 2 Diabetes Mellitus (DM), cardiovascular diseases, hypertension, dyslipidemia, and insulin resistance (Ahima, 2015). Various scientific organisations propose different diagnostic criteria for MetS. However, the most widely accepted classification is based on the National Cholesterol Education Program (NCEP) Adult Treatment Panel III (ATP-III) criteria (Ahima, 2015). According to NCEP ATP-III, MetS is defined as the coexistence of abdominal obesity, dyslipidemia, hypertension, and hyperglycemia (Cleeman, 2001). In Türkiye, the prevalence of MetS, based on the NCEP ATP-III criteria, is estimated to be 32.9% in the general population, 38.3% in women, and 26.8% in men (Abacı et al., 2018). Recent global data indicate that the prevalence of MetS ranges between 12.5% and 31.4% worldwide (Noubiap et al., 2022). These findings suggest that the prevalence of MetS in Türkiye is significantly high.

Dyslipidemia, characterised by hypertriglyceridemia, elevated LDL cholesterol, and low HDL cholesterol concentrations, is an integral component of MetS (Fahed et al., 2022). In individuals with MetS, particularly in the presence of central obesity and insulin resistance, dyslipidemia becomes inevitable. Non-pharmacological interventions, such as low-fat diets, in addition to exercise and weight loss, are recommended for the management of dyslipidemia in MetS (Fahed et al., 2022). A recent study demonstrated that a 10-week low-fat diet significantly improved total cholesterol levels, contributing to the treatment of dyslipidemia (Abdelbasset et al., 2021). The same study reported that combining a low-fat diet with moderate-intensity exercise yielded even more significant improvements in blood lipid profiles (Abdelbasset et al., 2021). In another study, it was observed that among patients diagnosed with MetS based on NCEP ATP-III criteria, a low-fat diet intervention reduced MetS prevalence to 32.5% after three months, and to 22.5% after six months ($p<0.001$) (Ismael, 2021).

The MEDFICTS (**M**eat, **E**ggs, **D**airy, **F**ried foods, **in** baked goods, **C**onvenience foods, **T**able fats, **S**nacks) Diet Assessment Questionnaire is frequently used to evaluate low-fat diet recommendations. As part of the NCEP ATP guidelines, the MEDFICTS diet serves as a dietary assessment tool designed to limit fat, saturated fat, and cholesterol intake (National Cholesterol Education Program, 1994; National Cholesterol Education Program, 2002). The MEDFICTS Diet Assessment Questionnaire is structured to assess adherence to Step 1 and Step 2 diets in a clinical setting by evaluating the consumption of meats, eggs, dairy products, fried foods, baked goods, fast foods, table fats, and snacks. By focusing on key foods that contain fat, saturated fat, and cholesterol, the questionnaire efficiently records and assesses food choices, consumption frequency, and portion sizes.

The NCEP ATP and the American Heart Association (AHA) recommend a stepwise approach to dietary interventions for patients with dyslipidemia. According to this approach, dietary interventions, classified as Step 1 and Step 2 diets, aim to gradually reduce saturated fat and cholesterol intake while promoting weight loss (Yu-Poth, 1999). The Step 1 diet is characterised by an energy intake of less than 30% from total fat, 7-10% from saturated fat, and less than 300 mg of dietary cholesterol per day. The Step 2 diet is more restrictive, with less than 30% of energy from total fat, less than 7% from saturated fat, and less than 200 mg of dietary cholesterol per day (Low Fat Lifestyle, 2010; National Cholesterol Education Program, 1994; National Cholesterol Education Program, 2002). To assess adherence to the therapeutic lifestyle changes diet, ATP-III recommends the MEDFICTS diet assessment (National Cholesterol Education Program, 2002).

Considering that dyslipidemia is an integral component of MetS and the effectiveness of low-fat diet interventions in dyslipidemia management, this study aims to evaluate the relationship between metabolic syndrome knowledge and awareness and MEDFICTS diet compliance among Nutrition and Dietetics students based on sex, body mass index (BMI), and academic year.

Materials and Methods

This study is a descriptive cross-sectional study conducted between January 1 and 31, 2025. The study population and sample consisted of 204 undergraduate students aged 18-25 from the Department of Nutrition and Dietetics at Ağrı İbrahim Çeçen University, Faculty of Health Sciences, who had no diagnosed chronic or metabolic diseases and were not using any medication. The reason why the sample was selected, especially from the students of the Department of Nutrition and Dietetics, is the thought that the training received by the students studying in this department on MetS may be practical in gaining healthy eating habits, and this may be a pioneer for studies supporting public health on MetS and nutrition. Before participation, all individuals provided verbal consent, after which they were asked to read and sign the Informed Voluntary Consent Form, with a copy given to them.

Data collection was conducted through face-to-face interviews, where the researcher personally asked participants relevant questions and recorded their responses on the questionnaire forms.

Data Collection Tools

The study data were collected using a sociodemographic information questionnaire, which the researcher designed based on a relevant literature review, along with the "Metabolic Syndrome Knowledge and Awareness Scale (MSKAS)" and the "MEDFICTS Diet Assessment Questionnaire."

Sociodemographic information questionnaire: The questionnaire included questions about participants' sex, age, body weight, height, academic year, marital status, place of residence, employment status, income level, smoking habits, and alcohol consumption. BMI values were calculated using the self-reported weight (in kilograms) and height (in meters) measurements with the formula: BMI = kg/m². The classification was based on World Health Organisation (WHO) criteria, where a BMI of <18.5 kg/m^2 was considered as "Underweight", 18.5-24.9 kg/m^2 as "Normal weight", 25.0-29.9 kg/m^2 as "Overweight" and ≥30 kg/m^2 as "Obese" (WHO, 2025).

Metabolic syndrome knowledge and awareness scale (MSKAS): The Metabolic syndrome knowledge and awareness scale (MSKAS) is a scale developed by Karaman and Akbulut (2023) to assess metabolic syndrome knowledge and awareness. The scale consists of 14 five-point Likert-type items, and is responded to and scored as "Strongly Disagree (1)", "Disagree (2)", "No Opinion (3)", "Agree (4)" and "Strongly Agree (5)". The total score ranges from a minimum of 14 to a maximum of 70. Higher scores indicate greater knowledge and awareness of metabolic syndrome, and the same interpretation applies to its subdimensions. The scale is divided into four subdimensions: Identification (items 1, 2, 3, 4, and 5), General Health (items 6, 7, and 8), Awareness (items 9, 10, and 11), and Prevention (items 12, 13, and 14) (Karaman & Akbulut, 2023). Cronbach's alpha value, which is the internal consistency coefficient of the scale, was found to be 0.918. In our study, Cronbach's alpha was calculated as 0.854.

MEDFICTS diet assessment questionnaire: The MEDFICTS diet assessment, developed by Srinath et al. (1993) to evaluate individuals' total dietary intake of fat, saturated fat, and cholesterol, was validated and tested for reliability in the Turkish population by Mermer et al. (2024). The MEDFICTS Diet Assessment Questionnaire consists of eight main food categories, including meats, eggs, dairy products, fried foods, baked goods, fast foods, table fats, and snacks. Within each category, foods are classified into two groups based on their fat content, referred to as "Group 1" and "Group 2.". In the MEDFICTS Diet Assessment Questionnaire, the weekly consumption frequency and portion size columns are used to calculate the score for each food category. The scoring is determined as follows: In the weekly consumption frequency column, "Rarely/Never" is assigned 0 points, "3 or fewer times" is assigned 3 points, and "4 or more times" is assigned 7 points. In the portion size column, "Small" is assigned 1 point, "Medium" is assigned 2 points, and "Large" is assigned 3 points. For each category, the weekly consumption score is multiplied by the portion size score, and the resulting value is recorded in the score column for that group. No scoring is applied to the second group of foods in any category. However, if the portion size is selected as "large" in group 2 foods of the meat category, 6 points are recorded directly. After all categories have been answered and scored, the total score is determined by summing all the scores. A score >70 points is interpreted as "The individual needs to make some dietary changes.", 40-70 points as "The individual has healthy dietary habits for heart health," and <40 points as "The individual's diet is compatible with a therapeutic lifestyle diet." (Mermer et al., 2024).

Ethical Approval of the Study

For the study to be conducted, ethical approval was obtained from the Ağrı İbrahim Çeçen University Scientific Research Ethics Committee on December 26, 2024, with the approval number 481.

Statistical Analysis Methods Used in the Study

The data obtained were analysed using SPSS for Windows 25.0. The assumption of normal distribution for quantitative variables was checked using the Kolmogorov-Smirnov test. Descriptive statistics were presented as median (25^{th}-75^{th} percentile) for quantitative variables and frequency (n) and percentage (%) for categorical variables. Since the assumption of normal distribution was not met for independent group comparisons, the Mann-Whitney U test and the Kruskal-Wallis H test were used. In cases where a significant difference was found in comparisons involving three or more groups, the Bonferroni correction was applied to identify the group responsible for the difference. Relationships between quantitative variables were examined using Spearman Correlation Analysis. A p-value of less than 0.05 was considered statistically significant.

Results and Discussion

The distribution of the sociodemographic characteristics of the students participating in the study is presented in Table 1. The students' ages ranged from 18 to 25 years, with a median age of 21 years. Among the participants, 80.9% were female and 19.1% were male. Based on BMI classification, 11.3% were underweight, 71.1% had normal weight, 14.2% were overweight, and 3.4% were obese. Regarding academic year distribution, 12.3% were first-year students, 29.9% were second-year students, 33.3% were third-year students, and 24.5% were fourth-year students. Most students were single (97.1%) and resided in a dormitory (76.4%). The majority reported that they did not work (94.6%), had a moderate income level (79.4%), did not smoke (81.4%), and did not consume alcohol (88.7%).

Table 1. Distribution of participants by sociodemographic characteristics (n=204)

		n	%
Sex	Female	165	80.9
	Male	39	19.1
Age (years)		21.0 (20.0 – 23.0)	
BMI	Underweight	23	11.3
	Normal weight	145	71.1
	Overweight	29	14.2
	Obese	7	3.4
Academic Year	1st class	25	12.3
	2nd class	61	29.9
	3rd class	68	33.3
	4th class	50	24.5
Marital Status	Married	6	2.9
	Single	198	97.1
Place of Worship	Student dormitory	156	76.4
	Family home	34	16.7
	Private home	14	6.9
Working Status	Working	11	5.4
	Not working	193	94.6
Income Status	Good	27	13.2
	Average	162	79.4
	Poor	15	7.4
Smoking Status	Yes	38	18.6
	No	166	81.4
Alcohol Consumption	Yes	23	11.3
	No	181	88.7

Descriptive statistics were expressed as frequency (n) and percentage (%) or median (25^{th}-75^{th} percentile).

The comparison results of the scale scores by sex among the participating students are presented in Table 2. Accordingly, there was no statistically significant difference between male and female students in terms of Metabolic Syndrome Knowledge and Awareness Scale (MSKAS) scores and MEDFICTS diet scores ($p>0.05$).

The comparison results of the scale scores by BMI classification among the participating students are presented in Table 3. According to the findings, students with a normal BMI had significantly higher general health scores compared to those who were overweight or obese ($p=0.016$).

The comparison results of the scale scores by academic year among the participating students are presented in Table 4. The findings indicated that fourth-year students had significantly higher identification scores and total MSKAS scores compared to all other academic years ($p<0.001$). Additionally, their awareness scores were significantly higher than those of second- and third-year students ($p=0.006$).

The correlation analysis results between the total and subdimension scores of the MSKAS and the total score of the MEDFICTS diet score among the participating students are presented in Table 5. The findings indicated that although a negative correlation was observed between MSKAS total and subdimension scores and MEDFICTS diet scores, this relationship was not statistically significant ($p>0.05$).

Table 2. The comparison results of MSKAS and MEDFICTS diet scores by sex (n=204)

	Sex		
	Female (n=165)	**Male (n=39)**	**p***
MSKAS			
Identification	19.0 (17.0 – 21.0)	20.0 (17.0 – 22.0)	0.739
General Health	11.0 (9.0 – 12.0)	11.0 (9.0 – 12.0)	0.502
Awareness	12.0 (10.0 – 13.0)	12.0 (9.0 – 13.0)	0.367
Prevention	13.0 (12.0 – 15.0)	12.0 (12.0 – 15.0)	0.363
MSKAS Score	54.0 (51.0 – 59.0)	54.0 (48.5 – 57.5)	0.411
MEDFICTS Diet			
MEDFICTS Diet Score	55.0 (42.0 – 69.0)	57.0 (43.0 – 91.5)	0.209

*Mann-Whitney U test. Descriptive statistics are expressed as median (25^{th}-75^{th} percentile).

Table 3. The comparison results of MSKAS and MEDFICTS diet scores by BMI (n=204)

	BMI			
	Underweight (n=23)	**Normal Weight (n=145)**	**Overweight or Obese (n=36)**	**p***
MSKAS				
Identification	19.0 (18.0 – 20.0)	19.0 (17.0 – 21.0)	19.5 (16.3 – 20.8)	0.950
General Health	11.0 (9.0 – 12.0)^{a,b}	11.0 (10.0 – 12.0)^{a}	10.0 (9.0 – 11.0)^{b}	**0.016**
Awareness	12.0 (11.0 – 13.0)	12.0 (10.0 – 12.0)	12.0 (9.0 – 13.0)	0.727
Prevention	13.0 (12.0 – 15.0)	13.0 (12.0 – 15.0)	12.0 (12.0 – 15.0)	0.641
MSKAS Score	55.0 (51.0 – 58.0)	55.0 (50.5 – 59.0)	53.0 (50.3 – 55.8)	0.428
MEDFICTS Diet				
MEDFICTS Diet Score	56.0 (45.0 – 83.0)	55.0 (39.0 – 69.0)	62.5 (48.0 – 88.0)	0.327

*Kruskal-Wallis H test. Similar letters in the same row indicate statistical similarity, and different letters indicate dissimilarity. Descriptive statistics are expressed as median (25^{th}-75^{th} percentile).

Table 4. The comparison results of MSKAS and MEDFICTS diet scores by academic year (n=204)

	Academic Year				
	1st class (n=25)	2nd class (n=61)	3rd class (n=68)	4th class (n=50)	p*
MSKAS					
Identification	18.0 (15.0 – 20.0)[a]	19.0 (17.0 – 19.5)[a]	19.0 (17.0 – 21.0)[a]	22.0 (19.8 – 23.0)[b]	**<0.001**
General Health	11.0 (9.0 – 12.0)	10.0 (9.0 – 12.0)	11.0 (9.3 – 12.0)	11.0 (10.0 – 12.0)	0.191
Awareness	12.0 (9.5 – 13.0)[a,b]	11.0 (10.0 – 12.0)[a]	11.5 (10.0 – 12.8)[a]	12.0 (12.0 – 13.0)[b]	**0.006**
Prevention	12.0 (10.5 – 14.0)	13.0 (12.0 – 15.0)	12.0 (12.0 – 15.0)	14.0 (12.0 – 15.0)	0.064
MSKAS Score	53.0 (46.0 – 57.0)[a]	53.0 (49.0 – 56.0)[a]	54.0 (49.3 – 59.0)[a]	58.0 (54.0 – 62.0)[b]	**<0.001**
MEDFICTS Diet					
MEDFICTS Diet Score	52.0 (40.0 – 66.0)	60.0 (46.5 – 78.0)	55.0 (46.3 – 72.8)	55.0 (36.0 – 67.0)	0.375

*Kruskal-Wallis H test. Similar letters in the same row indicate statistical similarity, and different letters indicate dissimilarity. Descriptive statistics are expressed as median (25th-75th percentile).

Table 5. The correlation analysis results between MSKAS and MEDFICTS diet score

		Identification	General Health	Awareness	Prevention	MSKAS Score
MEDFICTS Diet Score	**r**	-0.113	-0.037	-0.097	-0.018	-0.106
	p	0.109	0.595	0.204	0.793	0.132

r: Spearman correlation coefficient

Currently, the prevalence of MetS is rapidly increasing both in Türkiye and worldwide (Abacı et al., 2018; Noubiap et al., 2022). However, the prevention and treatment of MetS are possible through dietary and lifestyle modifications (Castro-Barquero et al., 2020). The foundation of this approach relies on increasing knowledge and awareness of metabolic syndrome (Joshi et al., 2013). Indeed, individuals with higher awareness of metabolic syndrome are more likely to adopt a healthier lifestyle (Lewis et al., 2008). For this reason, this study aimed to evaluate the relationship between metabolic syndrome knowledge and awareness and MEDFICTS diet compliance among Nutrition and Dietetics students, considering sex, BMI, and academic year.

When the students participating in the study were evaluated by sex, no statistically significant difference was found between male and female students in terms of MSKAS total and subdimension scores (Table 2). In a study conducted in the United States with 243 university students, female students were reported to have 6% higher metabolic syndrome knowledge and awareness scores compared to male students (Yahia et al., 2014). However, in another study conducted in Malaysia with 251 university students, male students were found to have higher scores for metabolic syndrome knowledge and awareness than female students (Rao et al., 2021). In a study conducted in Türkiye, which evaluated individuals with hypertension, diabetes mellitus (DM), and respiratory diseases, it was reported that female participants had higher prevention subdimension scores than males (Akeren et al., 2024). The limited number of studies evaluating metabolic syndrome knowledge and awareness by sex present highly heterogeneous results. This variability may stem from methodological differences among studies, as well as differences in participants' education levels and lifestyles. However, the lack of a significant difference in our study could be attributed to the fact that participants had similar demographic characteristics and belonged to the same education and training.

When the students participating in the study were evaluated by sex, no statistically significant difference was

found between male and female students in terms of MEDFICTS diet scores (Table 2). However, a study conducted in Türkiye reported that men had significantly higher MEDFICTS diet scores compared to women (Mermer et al., 2024). Similarly, a study on Lebanese university students found that, according to the MEDFICTS diet assessment, a higher percentage of women (10.5%) adhered to the therapeutic lifestyle diet (score <40) compared to men (2.5%). Conversely, a higher percentage of men (52.5%) required dietary changes (score >70) compared to women (39.5%) ($p<0.01$) (El-Hayek et al., 2018). A study conducted with university students in Ankara found that men had significantly higher MEDFICTS diet scores than women ($p=0.011$) (Göktaş et al., 2022). Similarly, a study conducted in Türkiye with individuals aged 40-75 reported that a higher percentage of women adhered to the therapeutic lifestyle diet according to MEDFICTS diet scores ($p<0.001$) (Bakırhan & İncedal Irgat, 2023). Studies conducted in the general population generally indicate that men tend to have higher MEDFICTS diet scores. When analysing the results of our study, it was observed that men scored higher in the meat and fast food categories, while women scored higher in the baked goods and snacks categories. The lack of a significant difference in total scores is likely due to our sample consisting of university students, whose dietary resources may be limited.

When BMI was evaluated in the students participating in the study, it was found that those with a normal BMI had significantly higher general health scores compared to those who were overweight or obese (Table 3). A study conducted with university students reported that there was no significant relationship between BMI and metabolic syndrome awareness (Yahia et al., 2014). Although there are a limited number of studies on this subject, it is known that having a high BMI alone is a risk factor for MetS (Kobo et al., 2019). Additionally, increasing obesity awareness from childhood can help reduce the future risk of MetS, Type 2 DM, and atherosclerotic cardiovascular diseases (Bozbulut et al., 2020). However, since the majority of our study participants (71.1%) had a normal BMI, further research is needed to understand the relationship between awareness and BMI better.

The MEDFICTS diet scores of the participating students did not show any significant difference based on BMI (Table 3). A study conducted with adults in Türkiye found that individuals with a MEDFICTS diet score below 40 had lower BMI values (Bakırhan & İncedal Irgat, 2023). Similarly, a study conducted in the United Arab Emirates reported that 30.0% of obese individuals and 40.0% of normal-weight individuals adhered to the therapeutic lifestyle diet (Attlee et al., 2019). Additionally, in a study involving patients undergoing cardiac rehabilitation, it was found that improvements in MEDFICTS diet scores were associated with improvements in waist circumference measurements following nutrition education (Holmes et al., 2005). Although limited studies have explored this topic, findings suggest that improving MEDFICTS diet scores may contribute to positive changes in anthropometric measurements, such as BMI and waist circumference.

When the students participating in the study were evaluated by academic year, it was found that fourth-year students had significantly higher identification scores and total MSKAS scores compared to all other academic years. In comparison, their awareness scores were significantly higher than those of second- and third-year students (Table 4). A study conducted with university students reported that fifth-year students had 11% higher metabolic syndrome knowledge and awareness scores compared to first-year students (Yahia et al., 2014). The same study also found that students enrolled in health sciences programs scored 7% higher in metabolic syndrome knowledge and awareness compared to students in non-health sciences programs (Yahia et al., 2014). Additionally, a study conducted with Chinese adults found that participants with lower education levels had lower metabolic syndrome knowledge and awareness scores (Lo et al., 2016). A study conducted with university students found that medical school students had higher metabolic syndrome knowledge and awareness compared to students from other faculties (Rao et al., 2021). Similarly, Akeren et al. (2024) reported that awareness, prevention, and total MSKAS scores increased with higher education levels. Additionally, an educational intervention targeting children and adolescents was found to increase their knowledge about MetS risk factors and subsequently encourage lifestyle changes (Cortez et al., 2018). Overall, it can be stated

that studying in a health-related field or progressing through the academic years in a given undergraduate program contributes to an increase in knowledge and awareness of metabolic syndrome, as outlined in the curriculum.

The MEDFICTS diet scores of the participating students did not show any significant difference based on academic year (Table 4). A study conducted with university students aged 18-35 found no statistically significant difference in MEDFICTS diet scores between students who had received nutrition education and those who had not (Uysal Yeler & Göktaş, 2023). The limited number of studies on this topic suggests that there is no clear relationship between education level and MEDFICTS diet compliance. This is likely because these studies were conducted with university students, whose access to food may be restricted. It should be noted that an individual's purchasing power can significantly influence food choices.

A negative correlation was observed between MSKAS total and subdimension scores and MEDFICTS diet scores among the participating students; however, this relationship was not statistically significant (Table 5). A study conducted with cancer survivors reported that, although participants generally had low metabolic syndrome knowledge, more than one-third of them were diagnosed with MetS (Seo et al., 2018). Similarly, a study conducted in China with adults who had cardiometabolic risk factors found that, despite being at risk of developing MetS, participants had low levels of knowledge about the condition (Wang et al., 2019). In a study conducted in Türkiye with individuals with chronic diseases, it was found that patients who adhered to their diet had significantly higher scores in the identification, prevention, and total MSKAS scores compared to those who did not comply ($p<0.05$) (Akeren et al., 2024). Similarly, a study conducted in Türkiye suggested that adherence to the MEDFICTS diet could be an effective strategy for reducing the risk of cardiovascular disease (Bakırhan & İncedal Irgat, 2023). Irgat, 2023). In their study, Tari Selçuk et al. (2024) found that selective eating behaviour in adults was associated with lower MEDFICTS diet scores. A study conducted in Jordan with elderly individuals reported that those who scored ≥70 on the MEDFICTS diet assessment exhibited higher depressive symptom scores (Ibrahim, 2021). Our study is the first to evaluate the relationship between metabolic syndrome knowledge and awareness and MEDFICTS diet compliance. Additionally, considering an individual's socioeconomic status, increasing awareness can be an important step toward promoting low-fat and healthy eating habits.

Conclusion

MetS is a significant public health issue with an increasing prevalence across nearly all age groups. Preventing MetS is only possible by enhancing knowledge and awareness, alongside promoting healthy eating habits and maintaining a specific lifestyle. However, the findings of our study indicated that, despite being future health professionals, Nutrition and Dietetics students demonstrated an increase in metabolic syndrome knowledge and awareness in parallel with their academic progression. However, their adherence to the MEDFICTS diet remained low. Studies conducted with non-university populations generally showed that MEDFICTS diet compliance varied based on sex, health status, or education level. In contrast, our study, along with similar research conducted on university students, did not find significant differences in diet compliance. This is likely due to the limited access to food resources among university students.

The main limitations of our study included the relatively small sample size and the fact that participants were limited to students in the Nutrition and Dietetics program. Another limitation was that anthropometric measurements were restricted to body weight and height, and BMI values were calculated based on self-reported data. In addition, the fact that the majority of the participants were female students (80.9%) is another limitation. However, as this is the first study to evaluate the relationship between metabolic syndrome knowledge and awareness and MEDFICTS diet compliance, we believe it will make a valuable contribution to the literature by drawing attention to the importance of this topic.

In conclusion, preventing MetS is only possible through increased awareness, alongside healthy eating habits and lifestyle modifications. Therefore, longitudinal studies with larger sample sizes are needed to evaluate further the relationship between metabolic syndrome

knowledge and awareness and MEDFICTS diet compliance. Additionally, conducting health screenings during students' university admission and throughout their education, as well as developing and implementing appropriate health intervention plans to improve students' lifestyle and dietary habits, would be a significant step in preventing MetS.

Compliance with Ethical Standards

Conflict of interest: The author(s) declare that they have no actual, potential, or perceived conflicts of interest related to this article.

Ethics committee approval: For the study to be conducted, ethical approval was obtained from the Ağrı İbrahim Çeçen University Scientific Research Ethics Committee on December 26, 2024, with the approval number 481.

Data availability: The data will be made available upon request by the author(s).

Funding: -

Acknowledgements: -

Disclosure: -

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