



ORIGINAL PAPER

Nutritional knowledge about the Mediterranean diet and its practical application among students in Poland

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ABSTRACT

Introduction and aim. The popularity of the Mediterranean diet is increasing and following it has many health benefits, including improving mental well-being. The aim of the study was to assess the nutritional knowledge about the Mediterranean diet and its practical application among students in Poland.

Material and methods. The study assessed a group of 313 students in Poland. The research tool was a questionnaire that focused on knowledge about the Mediterranean diet.

Results. The study showed that in terms of knowledge of the Mediterranean diet, students scored on average 6.5 ± 3.2 points (on a scale 0–11). When it comes to dietary compliance, the average score was 6.3 ± 2.4 points (scale 1–13 points). The better the knowledge of the diet, the better the compliance with its rules. Statistically, the analysis showed that there is a significant relationship between the age and/or academic degree of the students and their higher level of knowledge. The greater compliance with Mediterranean eating patterns was influenced by the location, age, or education of the respondents.

Conclusion. The study shows that the surveyed group of students in Poland has only an average level of knowledge and compliance with the Mediterranean diet.

Keywords. Mediterranean diet, nutrition, students' knowledge

Introduction

Nowadays, there are many alternative ways of eating. One of them is the Mediterranean diet, which is often considered the healthiest model of nutrition in the world.¹ The Mediterranean diet is a typical way of eating people living in the Mediterranean. It is based mainly on products of plant origin, which provide large amounts of dietary fiber, antioxidants, vitamins, and minerals, which have a positive effect on health.² The Mediterranean diet has several nutritional recommendations. Olive oil should be consumed every day as the main source of fat in the diet. This fat contains monounsaturated fatty acids and antioxidants that sequester free radicals. The Mediterranean diet is based on eating two or more servings of vegetables, and fruits – one or two servings a

day. These low-calorie products contain vitamins, minerals and flavonoids that have antioxidant properties. Whole grain products rich in dietary fiber and B vitamins should be consumed every day. Fish and seafood should be eaten 2 or 3 times a week, as they contain omega-3 acids that help prevent many diseases, have anti-inflammatory properties, and affect overall improvement of health and well-being. Legume seeds are a source of vegetable protein and dietary fiber, so they should be eaten often. In this diet pattern, dairy products (milk, cheese, yoghurt) should be chosen low in fat. This group of foods is important because it provides calcium and phosphorus. Nuts and seeds are rich in vitamin E and omega-3 fatty acids essential for maintaining proper health. In the Mediterranean diet, it is also important

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to use fresh herbs and spices every day – they support appetite and some of them are a source of antioxidants. Water is the primary drink. Additionally, wine is consumed in moderation (1 glass) mainly with a meal. It is recommended to limit the consumption of red meat due to its high saturated fat content. In the Mediterranean diet, it is recommended to choose seasonal and local products that are high in nutrients. Through the proper selection of food, the Mediterranean diet is characterized by a low consumption of saturated fatty acids and a high consumption of dietary fiber, vitamins, minerals, and mono- and polyunsaturated fats. Provides a high supply of antioxidants (polyphenols, lycopenes, and flavonoids), which come mainly from plant products. Furthermore, it has a positive effect on improving the lipid profile.^{3,4} This diet has a positive effect on the prevention of cardiovascular disease, prevents obesity, and supports the treatment of cancer.^{5,6}

The Mediterranean diet in 2023 was named the best diet of the year among 24 other popular eating patterns according to the US News & World Report. In addition, it was very well in the other categories, including diabetic, cardiological, plant-based diet, or the easiest to follow.⁷ The Food and Agriculture Organization of the United Nations (FAO) has indicated the Mediterranean diet as an example of a diet that has a positive effect not only on health, but also on environmental resources through low greenhouse gas emissions.^{8,9}

However, the researchers emphasize that a healthy lifestyle is responsible for the success of the Mediterranean diet. An important element of this diet, in addition to the use of local and fresh products, turns out to be eating meals in the company of loved ones or doing regular physical activity.³ The use of the Mediterranean diet among young people, as well as the knowledge of its basic assumptions, can contribute significantly to improving health and inhibiting the development of many diseases of civilization at a later age.

Aim

The aim of the study was to assess the nutritional knowledge of the Mediterranean diet and its practical application by Polish students. The study was conducted to verify whether students understand the basic assumptions of the diet and how they implement them on their daily menus.

Material and methods

The study was conducted online among students in Poland using an anonymous survey developed by the authors. The survey consisted of 35 closed single or multiple-choice questions and two open questions. To conduct the study, the authors created a questionnaire consisting of two parts. The first was aimed at assessing the level of student knowledge of the Mediterranean diet

and its practical application in their daily menu. The second part contained demographic questions about gender, age, place of residence, education, weight and height.

The inclusion criteria were voluntary participation in the survey. The exclusion criteria were: lack of consent to complete the questionnaire, withdrawal from completing the questionnaire. Finally, the study included a group of 313 volunteers.

Checking the level of knowledge of the respondents was examined through issues related to the products found in the Mediterranean diet and the impact of this way of eating on health. The method of implementing the basic assumptions of the diet was assessed using the frequency of consumption method.

An original scale was created, which awarded 1 point for giving the correct answer that qualifies for the use of Mediterranean diet patterns and having the appropriate level of knowledge. The range of adherence to the Mediterranean diet recommendations was determined, which corresponded to 1-5 points – low, 6-10 points – medium, above 10 points – high and the indicator of knowledge of its assumptions (1-4 points – low, 5-8 points – medium, above 8 points – high).

The respondents were asked about both the type and frequency of products consumed in their daily menu. The answers to the questions are presented by number (n) and frequency (%). Body mass index (BMI) was calculated based on height and weight given by respondents.

For statistical purposes, the following methods were used: Mann-Whitney U test, Kruskal-Wallis test, Spearman rank correlation coefficient significance test, Pearson's chi-square test, NW chi-square test, and the Fp test comparing k frequencies. Statistical analysis was performed using the EXCEL and STATISTICA 10 PL programs by Statsoft (Kraków, Poland). The value of $p < 0.05$ was considered statistically significant.

Results

The vast majority of the respondents (85.9%) were women, and 14.1% were men (Table 1).

The BMI of the respondents ranged from 13.54 to 41.52 kg/m². Its average was 21.89±3.10 kg/m² (women 21.63±2.99 kg/m² and men 23.49±3.27 kg/m²). In half of the subjects, this indicator did not exceed 21.45 kg/m².

The vast majority of students (76%) had normal body weight. Overweight was found in 13.7% of the respondents, and underweight in 8.9% of the respondents. The remaining respondents (1.3%) were obese.

Students in the field of knowledge about the Mediterranean diet obtained from 0 to 11 points, and their average was 6.5±3.2 points. Most of the students had an average level of knowledge about the Mediterranean diet (5-8 points) – 39.6% of the people (Fig. 1).

Table 1. General characteristics of the respondents

Parameter		n	%
Gender	Female	269	85.9
	Male	44	14.1
Age	18 – 21 years old	132	42.2
	22 – 25 years old	140	44.7
	26 years and older	41	13.1
Place of residence	City	207	66.1
	Village	106	33.9
Education	Secondary education	174	55.6
	Bachelor's degree	91	29.1
	Engineering degree	21	6.7
	Master degree	27	8.6

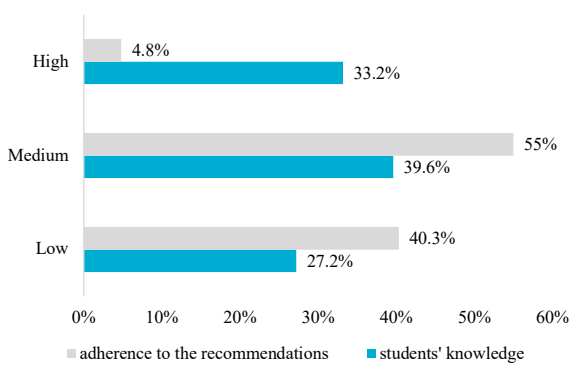


Fig. 1. Evaluation of adherence to the recommendations/level of students' knowledge of the Mediterranean diet

Most of the students (78%) have heard of the Mediterranean diet. 22% of the respondents showed a lack of general knowledge of this way of eating. Most of the respondents (60.7%) correctly believed that the Mediterranean diet is one of the healthiest diets in the world. 6.4% of the respondents had a different opinion, while the remaining respondents (32.9%) did not know the answer to this question.

According to the majority of students (60.7%), an important element of the Mediterranean diet is a healthy lifestyle, including regular physical activity. 6.4% of the respondents disagreed with this statement. Some of the respondents (32.9%) did not know whether physical exercise is an important element of the Mediterranean model of nutrition. According to the vast majority of the respondents (80.2%), the Mediterranean diet can affect quality and length of life. 3 (1%) respondents disagreed with this statement. The remaining respondents did not know the answer to this question – 18.8%.

The opinion of the respondents on diseases that the Mediterranean diet may have a particularly positive impact was divided. Most often, the respondents chose obesity (87.2%), atherosclerosis (83.1%) or hypertension (82.4%) (Fig. 2).

The study did not confirm a statistically significant difference in knowledge level between women and men

($p > 0.05$). Students' gender of the students had no effect on the knowledge of the Mediterranean diet.

The study observed a statistically significant difference in the level of knowledge between students of different ages ($p < 0.0001$). The study showed a statistically significant difference in the level of knowledge between students with different education ($p < 0.0001$). The average and median knowledge were higher in students with a bachelor's degree (Table 2).

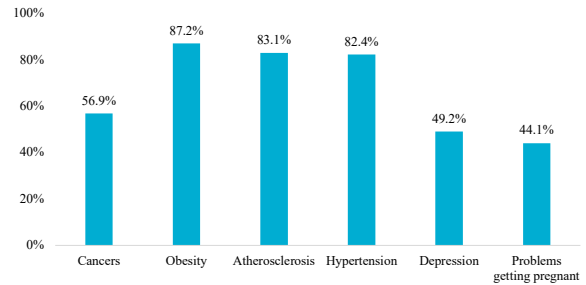


Fig. 2. Respondents' answers regarding diseases that can be particularly positively affected by the Mediterranean diet (multiple answers possible)

Table 2. Relationship between age/education of respondents and knowledge of the Mediterranean diet*

Parameter	n	Knowledge about the Mediterranean diet (points)					H	p
		Mean	SD	Median	Min.	Max.		
Age	18 – 21 years old	132	5.5	3.1	6	0	11	32.69
	22 – 25 years old	140	6.9	3.2	7	0	11	
	26 and older	41	8.4	2.5	9	1	11	
Education	Secondary education	174	5.7	3.1	6	0	11	<0.0001
	Bachelor's degree	91	7.8	3.0	9	0	11	
	Engineer degree	21	6.7	3.6	8	0	11	
	Master	27	7.3	2.8	8	0	11	

* H – Kruskal-Wallis test value

There was no statistically significant difference in the level of knowledge between students living in the city and people living in the countryside ($p > 0.05$). The residence of the students had no effect on the level of knowledge about the Mediterranean diet.

The study did not confirm a significant correlation between the BMI of the students and the level of knowledge of the Mediterranean diet ($p > 0.05$). The students' BMI had no effect on their knowledge of the Mediterranean diet.

The study showed a significant correlation between the level of knowledge about the Mediterranean diet and the degree of adherence to the recommendations of this diet ($p < 0.0001$). The higher the level of knowledge of

the students, the greater the degree of adherence to the recommendations of the Mediterranean way of eating (Table 3).

Table 3. The result of the Spearman rank correlation coefficient test of significance between the level of knowledge about the Mediterranean diet and the degree of adherence to the recommendations of this diet*

A pair of variables	n	Rs	p
Knowledge about the Mediterranean diet (points) & Degree of adherence to the recommendations of the Mediterranean diet (points)	313	0.409	<0.0001

* Rs – value of the Spearman rank correlation coefficient

For the degree of adherence to the Mediterranean diet recommendations, the students obtained 1 to 13 points. The average was 6.3 ± 2.4 points. More than half of the students (55%) had an average level of adherence to the Mediterranean diet recommendations (6-10 points) (Fig. 1).

Whole grain products were consumed daily by 26.2% of the respondents, which is in line with the principles of the Mediterranean diet and 4.8% of respondents did not eat them at all. Dairy products were consumed every day by 42.8% of people. Olive oil was used daily by 13.4% of students and 64.8% of students used this type of fat too rarely. The nuts were eaten at least several times a week by 33.8% of the respondents and 8.6% of them did not consume nuts at all (Table 4).

Table 4. Frequency of consumption of selected products and meals by respondents

Products		I don't eat	Less than once a week	Once a week	Several times a week	Every day
		n				
Whole-grain products	n	15	42	47	127	82
	%	4.8	13.4	15	40.6	26.2
Dairy products	n	32	15	22	110	134
	%	10.2	4.8	7	35.1	42.8
Olive oil	n	68	72	26	105	42
	%	21.7	23.0	8.3	33.5	13.4
Nuts	n	27	131	49	68	38
	%	8.6	41.9	15.7	21.7	12.1
Fast-food meals	n	78	193	31	10	1
	%	24.9	61.7	9.9	3.2	0.3

Some students ate fruits too rarely (once a day) - 42.8% of them. The rest of the respondents did not eat fruit every day, 27.2% of the respondents. 63.2% of the students ate vegetables at least twice a day by 63.2% of the students, and 11.5% of them did not eat vegetables every day (Table 5).

Fish and seafood were consumed too rarely, and 74.7% of people consumed fish and seafood too rarely (Table 6).

Table 5. Frequency of fruit and vegetable consumption by respondents

Products		I don't eat every day	Once a day	2-3 times a days	4 or more times a day
		n			
Fruits	n	85	134	81	13
	%	27.2	42.8	25.9	4.2
Vegetables	n	36	79	156	42
	%	11.5	25.2	49.8	13.4

Table 6. Frequency of consumption of fish and seafood by students

Frequency of consumption of fish and seafood	n	%
I don't eat fish or seafood	55	17.6
Once a month or less	65	20.8
Several times a month	105	33.5
1 time a week	64	20.4
2 or more times a week	24	7.7

Wine is drunk at least several times a week by 7.3% of the students, including 0.3% every day. They were consumed too rarely by 68.1% of the people, and the remaining respondents did not drink wine at all, 24.6% of the respondents.

Students use different sources of fat in their diet. However, most of the time they choose: vegetable oil (62.9%), olive oil (60.4%) or butter (56.9%) (Fig. 3).

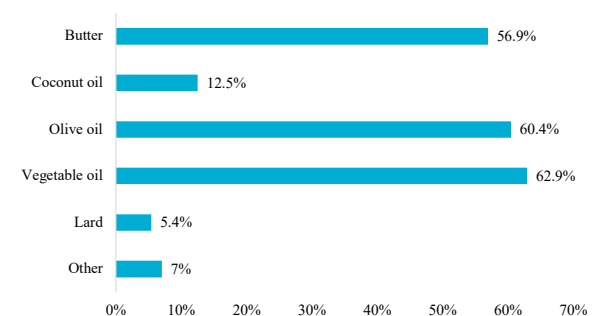


Fig. 3. Student responses on the use of a specific type of fat in the diet (multiple answers possible)

The vast majority of students used dried or fresh herbs and spices in their kitchen every day, 70.0% of the people. 28.8% of the respondents consumed them from time to time and the rest did not use them at all, 1.3% of the students.

There were no statistically significant differences in the level of adherence to the recommendations of the Mediterranean diet between women and men ($p > 0.05$). The gender of the respondents had no effect on the degree of adherence to the recommendations of this diet.

The study showed a statistically significant difference in the level of adherence to the recommendations of the Mediterranean diet recommendations between respondents of different ages ($p = 0.0001$). The study

results showed a statistically significant difference in the level of adherence to the Mediterranean diet recommendations between respondents living in the city and those living in the countryside ($p=0.0005$). The average and median degree of compliance with the recommendations of this diet was higher in people living in the city. The study showed a statistically significant difference in the level of adherence to the recommendations of the Mediterranean diet recommendations between respondents with different education ($p<0.0001$) (Table 7).

Table 7. The relationship between the age/place of residence/education of the respondents and the degree of adherence to the recommendations of the Mediterranean diet*

Parameter	n	Degree of adherence to the recommendations of the Mediterranean diet (points)					H/Z	p
		Mean	SD	Median	Min.	Max.		
Age	18 – 21 years old	132	5.8	2.4	6	1	13	H = 19.37 0.0001
	22 – 25 years old	140	6.4	2.2	6	2	12	
	26 and older	41	7.8	2.8	9	2	13	
Place of residence	City	207	6.6	2.4	7	2	13	Z = 3.49 0.0005
	Village	106	5.7	2.3	5.5	1	13	
Education	Secondary Education	174	5.7	2.3	6	1	13	H = 27.75 <0.0001
	Bachelor's degree	91	7	2.4	7	2	12	
	Engineer degree	21	6.2	2.2	5	2	11	
	Master degree	27	7.7	2.3	8	4	13	

* H – Kruskal-Wallis test value; Z – Mann-Whitney U test value

There was no statistically significant correlation between the BMI of the respondents and the level of adherence to the Mediterranean diet ($p>0.05$). The students' BMI had no effect on adherence to Mediterranean dietary patterns. In the case of frequency of consumption, the answers were assigned rank values from 1 to 4/5, where 1 means no product consumption and 4 and 5 the most common consumption of the product. In this way, the frequency of consumption of the products was determined.

The study showed statistically significant correlations between the frequency of consumption and the level of knowledge about the Mediterranean diet for the following products: whole grain products, fruit, vegetables, fish and seafood, olive oil, nuts. Students who ate the products had a higher level of knowledge (Table 8).

The study showed a statistically significant difference in the level of knowledge between students with different frequency of legume consumption and different frequency of use of herbs and spices ($p=0.0001$). The average and median level of knowledge was high-

er in students who consumed legumes more than once a week. The average and median level of knowledge was higher in students who used herbs and spices daily.

Table 8. The results of the Spearman rank correlation coefficient test between the frequency of product consumption and the level of knowledge about the Mediterranean diet*

A pair of variables	n	Rs	p
Frequency of consumption of whole grain products & Knowledge about the Mediterranean diet (points)	313	0.292	<0.0001
Frequency of fruit consumption & Knowledge about the Mediterranean diet (points)	313	0.23	<0.0001
Frequency of vegetable consumption & Knowledge about the Mediterranean diet (points)	313	0.317	<0.0001
Frequency of fish and seafood consumption & Knowledge about the Mediterranean diet (points)	313	0.18	0.0014
Frequency of consumption of dairy products & Knowledge about the Mediterranean diet (points)	313	0.07	0.2156
Incidence of olive oil consumption & knowledge of the Mediterranean diet (points)	313	0.314	<0.0001
Frequency of nut consumption & knowledge of the Mediterranean diet (points)	313	0.318	<0.0001
Frequency of wine consumption & Knowledge of the Mediterranean diet (points)	313	0.06	0.289

* Rs – value of the Spearman rank correlation coefficient

No statistically significant correlations were observed between the frequency of consumption of recommended products in the Mediterranean diet and the BMI of the students.

Table 9. Relationship between knowledge of the positive impact of the Mediterranean diet on various diseases and the degree of adherence to the recommendations of this diet*

Diseases		n	Degree of adherence to the recommendations of the Mediterranean diet (points)					Z	p
			Mean	SD	Median	Min.	Max.		
Cancers	Yes	178	6.7	2.5	6.5	2	13	3.09	0.0020
	No	135	5.8	2.2	6	1	10		
Obesity	Yes	273	6.3	2.4	6	1	13	0.42	0.6722
	No	40	6.2	2.2	6	2	11		
Atherosclerosis	Yes	260	6.6	2.4	6	1	13	3.82	0.0001
	No	53	5.2	1.8	5	2	9		
Hypertension	Yes	258	6.6	2.4	7	1	13	4.18	<0.0001
	No	55	5.1	1.8	5	2	9		
Depression	Yes	154	6.8	2.5	7	2	13	2.81	0.0050
	No	159	5.9	2.2	6	1	11		
Problems of getting pregnant	Yes	138	6.7	2.6	7	2	13	2.11	0.0345
	No	175	6	2.2	6	1	11		

* Z – value of the Mann-Whitney U test

The study showed a statistically significant difference in the level of adherence to the Mediterranean diet recommendations between students who knew and those who did not know the positive impact of the Mediterranean diet on almost all diseases, except obesity ($p < 0.05$). The average level of adherence to this diet was higher in students who indicated the following diseases (Table 9).

Discussion

Proper diet and lifestyle are factors that determine good health. It is particularly important to shape proper eating habits in people at a young age. Currently, among students, there is a growing interest in a healthy diet and the care of physical appearance. The Mediterranean diet is one of the most recommended nutrition models for people of all ages. Regular physical activity and a proper lifestyle are also the basic principles of this diet. In a study by La Fauci V et al. found a very high knowledge (90.5%) of the products present in this way of eating among young Italians. In the same group of respondents, despite a significant result of indicating typical food for this diet, only 11.4% of people were able to define what a Mediterranean diet is.¹⁰ Analyzing the study by Bogacka et al., a low level of knowledge (30.3%) of people treated in cardiology clinics was shown about the Mediterranean diet. The reason was the low consumption of fruits and vegetables among respondents over 26 years of age.¹¹ The Mediterranean model of nutrition is one of the healthiest diets, which is why some people know its assumptions or have heard about it. Young people are increasingly interested in a healthy diet and lifestyle due to the growing fashion in this topic. Furthermore, they care more about their physical appearance than older people.

It should be noted that it is important not only to know the basic assumptions of the Mediterranean diet but also to apply it in practice in your daily menu. In the study by Garcia-Meseguer et al. it was observed that only 5.3% of Spanish students followed the Mediterranean diet model in their diet.¹² However, Bonaccorsi et al. proved that more than half of students in primary and secondary schools in Italy apply the assumptions of this way of eating and 24.8% of people adhere to it to a high degree. The nutritional status of children and adolescents or the degree of academics of parents did not significantly affect this relationship. Younger students and boys (33%) compared to girls (45%) showed less adherence to the Mediterranean diet recommendations. The researchers also pointed out that despite minor differences, excess body weight, including overweight or obesity, also resulted from a lower adherence to the recommendations of this model of nutrition.¹³ Furthermore, it is also worth mentioning the study by Greiner et al., in which the authors proved that people

with higher scientific degree and women more often follow the principles of the Mediterranean diet.¹⁴ Looking at the age parameter, it can be concluded that older people are more aware of their food and choose healthier products as they grow up. Incorrect diet – high content of saturated fats in the diet or simple sugars – causes weight gain, which young people in particular cannot control. With age, students become more aware of their physical appearance and the parameters that are related to it. Better education or gender also affects the more frequent use of the Mediterranean diet. Women and people with a higher scientific degree pay more attention to what they eat and in what quantities to care for their figure or maintain proper health.

The type and frequency of consumption of particular food products have a significant impact on the quality of the diet. According to the Mediterranean model of nutrition, it is advisable to choose whole grain products every day. In the study by Kulesza et al., the authors showed that 27% of medical students ate whole-meal bread at least once a day and 1.0% of the respondents never chose it.¹⁵ In turn, Lebidzińska in her study showed that female students consume wholemeal bread more often than males. Only 14.8% of people consume this product every day and less than half of the students (42.4%) choose it several times a week. Moreover, the author showed that Polish students choose white bread much more often compared to whole grain bread.¹⁶ The more frequent use of wholegrain products may be due to taste preferences or economic reasons, as they are usually cheaper than wholegrain products. In our own research, no significant differences were found between gender and the consumption of whole grain products, but other researchers indicated such a relationship. Women consume these products more often, because they usually pay more attention to the foods, they choose to take care of their figure.

Fruits and vegetables should be present in the Mediterranean menu in large quantities. They are a source of many vitamins, minerals, and antioxidants. López-Olivares et al. came to some conclusions about the consumption of fruits and vegetables in the student menu. in a study of Spanish students. Some of them (34.8%) ate at least three servings of fruit a day and more than half of the study participants (57.1%) chose vegetables at least twice a day.¹⁷ In turn, in the study of Hadjimbei et al. showed that students from higher education institutions in Cyprus mostly consumed fruit every day (73.1%), but only some of them (31.6%) chose their second portion during the day. A similar dependence of the results was observed for vegetables – more than half of the people consumed them once a day, and only 29.5% of the respondents ate them at least twice a day.¹⁸ In addition, the study by McLean-Meynsse et al. should also be mentioned, in which the authors also proved a

similar correlation. A very small percentage of students (13%) chose fruits and vegetables more than once a day. It turns out that half of the respondents did not eat them every day (for fruits and vegetables, 50% and 52%, respectively).¹⁹ Analyzing the above results, it can be concluded that students do not consume enough fruits and vegetables. It is recommended to introduce them to the daily menu due to their high content of vitamins, dietary fiber, and minerals.

Consumption of fish and seafood is important in the Mediterranean model of nutrition. These products are rich in omega-3 fatty acids and complete animal protein. Low consumption of fish was observed in the study of Kula and Śmiechowska. Their frequent consumption – more than two times a week – was found in a very small group of respondents (6%), and a complete lack of fish consumption was found in 9% of people. The authors of this article also presented the factors that influence these values. The students surveyed said that their frequency of buying fish is affected, among others, by the price (44%) or the ease of preparing this product at home (39%).²⁰ However, in another study, Kowalska noted a significant relationship between higher fish consumption by men compared to women.²¹ Slightly different conclusions were reached by Mieziene et al. in their study with more than 3,000 people. The authors of the study showed that men consume fish much less often than women. Furthermore, the higher the level of education or the more frequent physical activity, the greater the consumption of fish and seafood among Lithuanian students.²² Students consume too small amounts of fish, which means that they do not meet the basic recommendations of the Mediterranean diet, which indicates a minimum of 2–3 portions of this product a week. Low consumption is certainly due to the high price, taste, or eating habits developed in youth. Due to the high content of unsaturated fatty acids and a large amount of protein, they should definitely be eaten more often among people of all ages.

Choosing the right source of fat in the diet is very important. Excessive consumption of it can lead to: excessive body weight. According to the assumptions of the Mediterranean model of nutrition, it is recommended to use olive oil every day, preferably with every meal. It should be the main source of fat in your diet. The very high consumption of olive oil in the diet of Spanish students is highlighted by the study by López-Olivares et al., where most respondents (95.2%) used it in their diet.¹⁷ However, in the study by Cobo-Cuenca et al., it has been shown that men and women in Spain – with a slight male predominance – use olive oil as the main source of fat to a similar extent (92.1% and 90.1%, respectively).²³ It is also worth analyzing the study by Mieziene et al., in which the nutritional patterns of Lithuanian students were exam-

ined. The study showed that only a small part of people (19.3%) chose olive oil as the basic fat in their daily diet. The students consumed an average of about 2.5 tablespoons each day, which is a small amount considering the recommended 4 tablespoons per day in the Mediterranean diet. The authors also noticed a certain correlation between the more frequent consumption of this source of fat and the gender and level of education of the respondents. Compared to men, women were much more likely to use olive oil in their cooking. The same was found among people with higher academic degrees compared to students with lower education. Furthermore, researchers have shown that Lithuanians who are more physically active consume this source of fat more frequently than sedentary people.²² The low consumption of olive oil every day among the student population in Poland may be due to its material status or taste. The use of this fat in countries close to the Mediterranean Sea is quite popular due to its widespread availability and the lower price resulting, among others, from the lack of transport costs.

The number of scientific articles on the Mediterranean diet is constantly increasing. There is a lot of interest in this way of eating, which is why researchers are still trying to show new aspects regarding the positive impact of this diet on health and various entities of disease. According to current research, the Mediterranean model of nutrition is widely used in the prevention of many diseases. It is indicated for use at any age and also pays special attention to the right lifestyle. According to own research, students have a basic state of knowledge about this diet and implement its recommendations in their menu to an average degree. It is recommended to further educate and make each age group aware of the positive impact of the Mediterranean diet based on the latest scientific research on this issue.

The strengths of the study include the possibility of examining respondents from various universities throughout the country and the lack of time limits to answer. The weaknesses of the study include a non-standardized questionnaire, lack of direct contact with the respondents, the wrong understanding of the questions, or lack of complete answers. According to the recommendations of the Mediterranean diet, the frequency of consumption of different products varies, so it is recommended to use the same frequency of consumption scale in future studies.

Conclusion

Most of the Polish population students (39.6%) showed an average level of knowledge about the assumptions of the Mediterranean diet and adhere to its recommendations to the same extent (55% of the people). The higher the level of knowledge, the better the adherence to the Mediterranean diet recommendations among Pol-

ish students. Gender, place of residence, or BMI value are not related to the level of knowledge of students about the Mediterranean diet, while their age or level of education significantly affect this relationship. Adherence to Mediterranean diet patterns is related to the age, place of residence, and academic degree of college students. Gender or body mass index (BMI) do not significantly affect the level of adherence to the recommendations of the Mediterranean diet. Students who have more knowledge about the basic assumptions of this model of nutrition consume more often: wholegrain products, fruits, vegetables, fish and seafood, olive oil, legumes, nuts, and spices. The value of the BMI index does not affect the higher consumption of recommended products in the Mediterranean diet. Students have basic knowledge about the positive influence of the Mediterranean diet on various diseases. The greater the adherence to the recommendations of this way of eating, the greater the awareness of the pro-health effect of this diet on the occurrence of: cancer, atherosclerosis, hypertension, depression, or problems with getting pregnant.

Declarations

Funding

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Author contributions

Conceptualization, S.K. and K.D.; Methodology, S.K. and K.D.; Formal analysis, S.K.; Investigation, S.K.; Resources, S.K.; Writing – Original Draft Preparation, S.K.; Writing – Review & Editing, S.K. and K.D.; Supervision, K.D.

Conflicts of interest

The author(s) declare no competing interests.

Data availability

The data sets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval

All subjects gave their informed consent for inclusion before participating in the study. The study was carried out in accordance with the Declaration of Helsinki.

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