

Research Paper

Adherence to the Mediterranean dietary pattern among University students

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Abstract. The Mediterranean dietary pattern is one of the healthiest dietary patterns. Despite Malta's central location in the Mediterranean Sea, the Maltese dietary habits may have become more Westernised. The aims of this cross-sectional pilot study are to assess adherence to the Mediterranean diet in students at the University of Malta and investigate the feasibility of such a study and pilot the measurement tool. A structured interview was conducted with n=50 students who were conveniently recruited outside the University premises. The interview addressed lifestyle information and questions on the participants' consumption of food items typical of a Mediterranean dietary pattern using a literature-based score. A photographic food atlas was used to aid the quantification of food portion sizes. A maximum of 18 points score indicating adherence was generated for each participant. The majority of students were female, Maltese, aged between 18–20 years old and within the normal BMI range. Students were unlikely to consume alcohol or smoke. The majority had a low-moderate intake of fruits, vegetables and legumes, low intake of fish and high intake of meat. The mean (95% CI) adherence score to the Mediterranean dietary pattern was 8.8 (8.1, 9.5) out of 18, classifying 72% of the students as medium adherers. No significant associations were found between overall adherence and all study parameters (p-value = 0.05). This study was the first to investigate the adherence to the Mediterranean dietary pattern in a sample of the Maltese population. A larger sample size is required to

highlight associations between adherence levels and lifestyle factors.

Keywords. Mediterranean dietary pattern, adherence score, University students, Malta.

1. Introduction

The Mediterranean diet is an eating pattern that is predominant in countries surrounding the Mediterranean basin. The term diet is derived from the Greek word *diaeta* which means 'way of life'. Hence, the Mediterranean diet does not only comprise of eating practices but it also represents a lifestyle that involves several traditional habits of the Mediterranean culture (Arnoni & Berry, 2014). It is characterised by daily consumption of fresh foods of plant origin, namely seasonal fruits, vegetables, legumes, nuts and cereals. It also includes moderate to high consumption of fish and dairy products. On the other hand, the consumption of red meat, poultry and their products are limited to weekly meals. Additionally, the Mediterranean dietary pattern is known for its moderate consumption of alcohol, mainly in the form of red wine during meals and special occasions. And lastly, extra virgin olive oil is used on a daily basis as the main source of dietary fat (Gerber & Hoffman, 2015).

The positive effect of the Mediterranean dietary pattern on overall health outcomes, disease risk and life expectancy is frequently addressed in the nutrition literature (Sofi et al., 2014). In addition, several systematic reviews and meta-analyses of observational studies, prospective studies and randomised controlled trials

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(RCTs) provided consistent robust evidence on the inverse correlation between the adherence to the Mediterranean diet and neurodegenerative diseases (Dinu, et al., 2018), reduced type 2 diabetes mellitus risk (Kolooverou, Esposito, Giugliano, & Panagiotakos, 2014) and cancer development (Schwingshackl & Hoffmann, 2015; Sofi et al., 2014). Furthermore, recent conclusions from the Evención con DIeta MEDiterránea (PREDIMED) Study stated that the Mediterranean diet can help lower cardiovascular events such as stroke, myocardial infarction or death by 30%.

(hazard ratio: 0.70, 95% confidence interval (CI) 0.55–0.89) when compared to a low-fat diet (Estruch et al., 2018).

Despite the fact that Malta is located in the centre of the Mediterranean Sea, the Maltese population may not follow the traditional Mediterranean dietary pattern, and there is evidence to show that the Maltese diet is becoming more Westernised as it is low in dietary fibre and high in saturated fats, salt and sugar (Rocchiccioli, et al., 2006). Research on University students concluded that the latter follow unhealthy diets since most of them did not meet the benchmarks for a healthy diet which include the daily consumption of five servings of fruits and vegetables, a healthy breakfast and nutritional meals, snacks and drinks (Cefai & Camilleri, 2011; Fenech, 2012).

The main aim of this study is to measure adherence to the Mediterranean dietary pattern in students at the University of Malta. The study also aims at investigating the feasibility of conducting such a study as well as piloting the used measurement tool.

2. Methodology

Participants were recruited in the period between October and December 2018 using convenience sampling in public areas near the University of Malta. A brief summary of the study's aims and objectives was provided to potential participants, along with an information sheet and a consent form. After that, a face-to-face structured interview was then carried out by the researchers. Each interview lasted approximately 10 minutes and was divided into two sections. The first included self-designed questions on demographics (gender, age and nationality) and lifestyle information (smoking status, height, weight and hours of physical activity). The second section involved a validated literature-based adherence score, proposed by Sofi and colleagues (2014), to assess

the participants' adherence to the Mediterranean dietary pattern. The adherence score consisted of nine food groups: fruits, vegetables, legumes, cereals, fish, meat and meat products, dairy products, alcohol and olive oil. The cut-off values were based on portion sizes (grams per day or per week) while the scoring criteria (0, 1, 2) depended on whether a food group is part of the Mediterranean diet and its consumption category (low, medium, high). The score ranged from 0 to 18 points, with 0 being the lowest degree of adherence and 18 being the highest degree of adherence (Sofi et al., 2014). Each participant was classified as a low, medium or high adherer to the Mediterranean dietary pattern, based on the adherence score obtained. The score was divided into three categories – low, medium and high. One was categorised as a low adherer if he scored between 0 and 6, a medium adherer with a score between 7 and 12, whilst those who scored between 13 to 18 were said to be high adherers. Finally, participants were shown different portion sizes depicted pictorially, using a photographic atlas (MAFF, 1997) to allow a more accurate quantification of portion sizes.

The study was ethically approved by the Faculty Research Ethics Committee (FREC) at the Faculty of Health Sciences and the University Research Ethics Committee (UREC) (reference number: FRECFHS_1718_090). This was followed by approval from the Office of the Registrar at the University of Malta.

Data analysis was carried out using the Statistical Package for the Social Sciences (SPSS) version 23. Sociodemographic and lifestyle data were analysed using descriptive statistics. The adherence score was considered the dependent variable of the study and so, a normality test was conducted. The test result indicated that the adherence score variable follows a normal distribution. The normality assumption of the adherence score is also satisfied with each level of the categorical variables – gender, age, smoking status, nationality and faculty type. Therefore, One-way Analysis of Variance (ANOVA) was conducted to study the association between the adherence score and the categorical variables. Associations between the score and the continuous variables – body mass index (BMI) and physical activity were investigated using the Spearman Correlation test. This test was considered relevant as it measures the correlation between the mentioned variables and its nature i.e. positive or negative. In addition, the Chi-Squared test (χ^2) was chosen to study any associations between the categorical variables and the individual food groups of the adherence score, whilst

ANOVA test was used to study the correlations between the continuous variables and the individual food groups. An alpha of 0.05 was used as a cut-off for significance.

(82%), aged 18–20 (70%), non-smokers (90%) and reading for degrees that are not related to health care professions (68%). The mean BMI of the participants was 23.1 kg/m² and they reported doing a mean of 5.4 hours of physical activity per week.

3. Results

3.1. Characteristics of the participants

A total of 50 students participated in this study. The baseline characteristics of the students' demographics and lifestyle behaviours are presented in Table 1. The majority of the participants were females (62%), Maltese

Table 1 – Baseline characteristics of study participants according to gender.

Variable N (%) or mean ± SD	Total (50) (100)	Male (19) (38)	Female (31) (62)	p-value
Age (in years) N (%)				0.359*
18–20	35 (70)	13 (37)	22 (63)	
21–23	10 (20)	3 (30)	7 (70)	
24–26	4 (8)	3 (75)	1 (25)	
More than 26	1 (2)	0 (0)	1 (100)	
Nationality				0.282*
Maltese	41 (82)	17 (41)	24 (59)	
Non-Maltese	9 (18)	2 (22)	7 (78)	
Faculty type				0.500*
Health care	16 (32)	5 (31)	11 (69)	
Non-health care	34 (68)	14 (41)	20 (59)	
Smoking Status				0.285*
Yes (Current smoker)	5 (10)	3 (60)	2 (40)	
No (Non-smoker)	45 (90)	16 (36)	29 (64)	
Height (m)	1.68 ± 0.09	1.75 ± 0.08	1.64 ± 0.06	<0.001**
Weight (kg)	65.6 ± 13.5	76.1 ± 12.2	59.2 ± 9.8	<0.001**
BMI (kg/ m2)	23.1 ± 3.6	24.7 ± 3.0	22.2 ± 3.6	0.015**
Physical activity (hours/ week)	5.4 ± 5.4	8.5 ± 7.2	3.6 ± 2.8	0.001**

Data are presented as n (%) or mean ± standard deviation.

* $p < 0.05$ of significant difference (Chi-squared).

** $p < 0.05$ of significant difference (ANOVA).

Consumption of food groups which make up the Mediterranean diet score is reported in Tables 2a and 2b. The majority of students consumed low portions of fruits, medium portions of vegetables and high portions of cereals. Weekly consumption of legumes was relatively low where only 32% of the students consume more than two portions per week. Participants reported consuming more than 1.5 portions of meat and meat products per day and low to medium (<1–2.5) portions of fish per week. Around half of the interviewed students consume less than one portion of dairy products per day. Daily alcohol consumption is low with most participants consuming less than one alcohol unit per day, whilst almost a quarter reported using olive oil in cooking/ dressing on a regular basis.

Tables 2a and 2b also show significant associations between the individual food groups of the adherence score and the study parameters. For example, the consumption of more than two portions of fruits was higher in students who had a high BMI value. In addition, students from health care faculties consume more fruits and vegetables than students from non-health care faculties. On another note, students aged 21–23 years old consume more portions of legumes than other students from the other age groups. Lastly, the consumption of fish, meat and dairy was significantly different between gender where male students consume more portions of fish, meat and dairy than female students.

Table 2a – Food groups consumption and relationship with gender, age group and BMI.

Food Components (consumption category)	Total	Gender		p-value	Age				p-value	BMI (Kg/m ²)	p-value ANOVA <0.05
		Male	Female		18–20	21–23	24–26	>26			
		n=19 38%	n=31 62%		n=35 70%	n=10 20%	n=4 8%	n=1 2%			
Fruits				0.835					0.612		0.037
<1 portion / day (lowest)	44	42.1	45.2		42.9	50.0	50.0	0.0		22.3 ± 3.5	
1–1.5 portions / day (medium)	32	36.8	29.0		37.1	20.0	25.0	0.0		22.5 ± 3.1	
>2 portions / day (highest)	24	21.1	25.8		20.0	30.0	25.0	100.0		25.4 ± 3.5	
Vegetables				0.993					0.202		0.660
<1 portion / day (lowest)	26	26.3	25.8		28.6	30.0	0.0	0.0		22.4 ± 3.4	
1–2.5 portions / day (medium)	64	63.2	64.5		65.7	40.0	100.0	100.0		23.4 ± 3.6	
>2.5 portions / day (highest)	10	10.5	9.7		5.7	30.0	0.0	0.0		23.7 ± 4.5	
Legumes				0.730					0.007		0.501
<1 portion / week (lowest)	36	42.1	32.3		48.6	10.0	0.0	0.0		23.8 ± 3.8	
1–2 portions / week (medium)	32	26.3	35.5		22.9	30.0	100.0	100.0		23.2 ± 3.7	
>2 portions / week (highest)	32	31.6	32.3		28.6	60.0	0.0	0.0		22.3 ± 3.2	
Cereals				0.065					0.976		0.267
<1 portion / day (lowest)	10	0.0	16.1		11.4	10.0	0.0	0.0		21.2 ± 3.8	
1–1.5 portions / day (medium)	24	15.8	29.0		25.7	20.0	25.0	0.0		22.4 ± 4.0	
>1.5 portions / day (highest)	66	84.2	54.8		62.9	70.0	75.0	100.0		23.7 ± 3.3	
Fish				0.006					0.576		0.206
<1 portion / week (lowest)	40	21.1	51.6		34.3	50.0	75.0	0.0		22.1 ± 3.2	
1–2.5 portions / week (medium)	40	36.8	41.9		42.9	30.0	25.0	100.0		23.6 ± 3.4	
>2.5 portions / week (highest)	20	42.1	6.5		22.9	20.0	0.0	0.0		24.3 ± 4.3	

Table 2a – Food groups consumption and relationship with gender, age group and BMI.

Food Components (consumption category)		Total	Gender		p-value	Age				p-value	BMI (Kg/m ²)	p-value
			Male	Female		X ²	18–20	21–23	24–26			
N	%		n=19	n=31	<0.05	n=35	n=10	n=4	n=1	<0.05	Mean ±SD	ANOVA
			38%	62%		70%	20%	8%	2%			<0.05
Meat and Meat Products												
<1 portion / day (lowest)	34	26.3	38.7		0.047	31.4	40.0	25.0	100.0	0.593	22.1 ± 3.5	0.426
1–1.5 portions / day (medium)	24	10.5	32.3			28.6	20.0	0.0	0.0		23.5 ± 4.3	
>1.5 portions / day (highest)	42	63.2	29.0			40.0	40.0	75.0	0.0		23.6 ± 3.2	
Dairy Products												
<1 portion / day (lowest)	52	15.8	74.2		<0.001	54.3	50.0	50.0	0.0	0.255	22.0 ± 3.0	0.072
1–1.5 portions / day (medium)	14	21.1	9.7			8.6	20.0	25.0	100.0		24.8 ± 4.3	
>1.5 portions / day (highest)	34	63.2	16.1			37.1	30.0	25.0	0.0		24.1 ± 3.7	
Alcohol												
<1 AU* / day (lowest)	98	100.0	96.8		0.429	97.1	100.0	100.0	100.0	0.932	23.1 ± 3.6	0.833
1–2 AU* / day (medium)	0	0.0	0.0			0.0	0.0	0.0	0.0			
>2 AU* / day (highest)	2	0.0	3.2			2.9	0.0	0.0	0.0		23.9 ± 0	
Olive Oil												
Occasional (lowest)	48	47.4	48.4		0.531	54.3	40.0	25.0	0.0	0.421	22.4 ± 3.5	0.095
Frequent (medium)	28	21.1	32.3			28.6	30.0	25.0	0.0		22.7 ± 3.8	
Regular (highest)	24	31.6	19.4			17.1	30.0	50.0	100.0		25.0 ± 3.0	
AU= alcohol unit = 12g												

Table 2b – Food groups consumption and relationship with nationality, faculty type and physical activity.

Food Components (consumption category)	Total	Nationality		p-value		Faculty Type		p-value χ^2	Hours of Physical Activity Mean \pm SD	p-value (ANOVA)
		Maltese	Non-Maltese	χ^2		Health care	Non-health care			
	N	n=41	n=9	<0.05		n=16	n=34	<0.05		<0.05
	%	82%	18%			32%	68%			
Fruits				0.055				0.024		0.669
<1 portion / day (lowest)	44	36.6	77.8			18.8	55.9		4.71 \pm 4.78	
1–1.5 portions / day (medium)	32	34.1	22.2			37.5	29.4		5.72 \pm 7.17	
>2 portions / day (highest)	24	29.3	0.0			43.8	14.7		6.42 \pm 4.01	
Vegetables				0.265				0.031		0.479
<1 portion / day (lowest)	26	22.0	44.4			12.5	32.4		4.39 \pm 3.26	
1–2.5 portions / day (medium)	64	65.9	55.6			62.5	64.7		5.48 \pm 6.21	
>2.5 portions / day (highest)	10	12.2	0.0			25.0	2.9		7.90 \pm 4.56	
Legumes				0.572				0.405		0.734
<1 portion / week (lowest)	36	39.0	22.2			25.0	41.2		5.20 \pm 4.54	
1–2 portions / week (medium)	32	29.3	44.4			43.8	26.5		6.31 \pm 7.75	
>2 portions / week (highest)	32	31.7	33.3			31.3	32.4		4.84 \pm 3.49	
Cereals				0.301				0.832		0.440
<1 portion / day (lowest)	10	7.3	22.2			6.3	11.8		4.60 \pm 2.70	
1–1.5 portions / day (medium)	24	26.8	11.1			25.0	23.5		7.21 \pm 8.24	
>1.5 portions / day (highest)	66	65.9	66.7			68.8	64.7		4.92 \pm 4.42	
Fish				0.459				0.235		0.296
<1 portion / week (lowest)	40	36.6	55.6			43.8	38.2		4.28 \pm 4.84	
1–2.5 portions / week (medium)	40	43.9	22.2			50.0	35.3		6.90 \pm 6.43	
>2.5 portions / week (highest)	20	19.5	22.2			6.3	26.5		4.85 \pm 4.07	

Table 2b – Food groups consumption and relationship with nationality, faculty type and physical activity.

Food Components (consumption category)	Total	Nationality		p-value		Faculty Type		p-value χ^2	Hours of Physical Activity	p-value (ANOVA)
		Maltese	Non-Maltese	χ^2		Health care	Non-health care			
	N	n=41	n=9	<0.05		n=16	n=34	<0.05		<0.05
	%	82%	18%			32%	68%		Mean \pm SD	
Meat and Meat Products										
				0.047				0.901		0.071
<1 portion / day (lowest)	34	41.5	0.0			37.5	32.4		4.53 \pm 3.84	
1–1.5 portions / day (medium)	24	19.5	44.4			25.0	23.5		3.25 \pm 1.37	
>1.5 portions / day (highest)	42	39.0	55.6			37.5	44.1		7.43 \pm 7.21	
Dairy Products										
				0.605				0.370		0.021
<1 portion / day (lowest)	52	51.2	55.6			37.5	58.8		4.33 \pm 4.19	
1–1.5 portions / day (medium)	14	12.2	22.2			18.8	11.8		2.71 \pm 1.29	
>1.5 portions / day (highest)	34	36.6	22.2			43.8	29.4		8.27 \pm 7.00	
Alcohol										
				0.636				0.141		0.529
<1 AU*/ day (lowest)	98	97.6	100.0			93.8	100.0		5.51 \pm 5.48	
1–2 AU*/ day (medium)	0	0.0	0.0			0.0	0.0			
>2 AU*/ day (highest)	2	2.4	0.0			6.3	0.0		2.00 \pm 0	
Olive Oil										
				0.606				0.949		0.369
Occasional (lowest)	48	46.3	46.3			50.0	47.1		5.29 \pm 4.42	
Frequent (medium)	28	26.8	26.8			25.0	29.4		4.18 \pm 3.23	
Regular (highest)	24	26.8	26.8			25.0	23.5		7.21 \pm 8.57	
AU= alcohol unit = 12g										

3.2. Mediterranean diet adherence score

The majority of students (72%) were classified medium adherers to the Mediterranean dietary pattern (refer to Table 3), with a mean (95% CI) overall adherence score of 8.8 (8.1, 9.5).

Table 3 – Mean (95% CI) and median adherence scores of participants by adherence category.

Mediterranean Diet Adherence Score	N (%)	Mean (95% CI)	Median (interquartile range IQR)
Overall Adherence	50 (100.0)	8.8 (8.1, 9.5)	9 (3)
Low (0–6)	10 (20.0)	5.0 (4.4, 5.6)	5 (2)
Medium (7–12)	36 (72.0)	9.0 (8.8, 9.8)	8 (3)
High (13–18)	4 (8.0)	13.8 (12.2, 15.3)	13.5 (2)

There was no significant association between the adherence score and gender, age, nationality and faculty type (refer to Table 4). Furthermore, correlations between the adherence score and BMI and physical activity were not significantly different from 0.

Table 4 – One-way ANOVA test results for the adherence score and the categorical variables.

Baseline characteristics	N (%)	Mean adherence score (95% CI)	P-value (<0.05)
Gender			0.641
Male	19 (38.0)	8.58 (7.43, 9.73)	
Female	31 (62.0)	8.94 (7.93, 9.94)	
Age (years)			0.386
18–20	35 (70.0)	8.43 (7.53, 9.33)	
21–23	10 (20.0)	9.70 (7.85, 11.55)	
24–26	4 (8.0)	8.75 (6.75, 10.75)	
Nationality			0.060
Maltese	41 (82.0)	9.12 (8.32, 9.93)	
Non-Maltese	9 (18.0)	7.33 (5.53, 9.14)	
Faculty Type			0.342
Health care	16 (32.0)	9.31 (7.78, 10.84)	
Non-health care	34 (68.0)	8.56 (7.70, 9.41)	

4. Discussion

This study evaluated adherence to the Mediterranean dietary pattern in students at the University of Malta. An overall medium adherence was reported, with a mean score of 8.8 (95% CI 8.1, 9.5) from a maximum score of 18. Notwithstanding the fact that the calculation of adherence varies between studies, similar results were reported in studies with a study population from other Mediterranean countries including Cyprus, Turkey and Spain (Baydemir, Ozgur, & Balci, 2018; García-Meseguer, Burriel, et al., 2014; Hadjimbei, Botsaris, Gekas, & Panayiotou, 2016; Navarro-González et al., 2014).

No evidence was found of any associations between the adherence score and the participants' characteristics. This is consistent with findings from other Mediterranean studies (Baydemir et al., 2018; García-Meseguer et al., 2014; Hadjimbei et al., 2016; Navarro-González et al., 2014; Štefan et al., 2017). The students' physical activity and their BMI were not associated with the adherence score. On the contrary, evidence from Croatian and Spanish studies reported significant positive associations between adherence score and physical activity (Štefan et al., 2017; Zurita-Ortega, Román-Mata, Chacón-Cuberos, Castro-Sánchez, & Muros, 2018). As for the association between BMI and the adherence level, the literature has mixed evidence where some studies reported a positive association (Durá Travé & Castroviejo Gandarias, 2011; Navarro-González et al., 2014; Štefan et al., 2017) while others reported non-significant associations (García-Meseguer et al., 2014; Grillone et al., 2018).

The study also aimed at assessing the students' consumption of the individual food groups comprising the Mediterranean dietary pattern. The intake of fruits and vegetables was in the lowest consumption category as it was also lower than the recommended amount of at least 400g daily (WHO, 2004). This is in line with a previous study on the dietary habits of the University of Malta students that reported students to consume only 1–2 servings of fruits and vegetables on a daily basis (Cefai & Camilleri, 2011). Students' weekly intake of legumes was low to medium which is consistent with results reported in international studies (Hadjimbei et al., 2016; Kyrkou et al., 2018; Navarro-González et al., 2014). The consumption of other foods that comprise the Mediterranean diet such as fish and olive oil was also low as only 1 in 5 students met the national recommendations for fish and olive oil consumption (HPDPD, 2016). In fact, the students in this cohort had the lowest consumption

of such food groups among their Mediterranean counterparts in universities in Spain, Cyprus and Greece (Hadjimbei et al., 2016; Kyrkou et al., 2018; Navarro-González et al., 2014). In agreement with previous local studies, the students' consumption of alcohol was very low (Abdel-Massih, 2015; Cefai & Camilleri, 2011; Fenech, 2012). Conversely, the consumption of foods that are not typical of a Mediterranean dietary pattern such as meat and meat products was high exceeding the national guidelines (HPDPD, 2016). Whilst the participants' daily intake of dairy products was less than the recommended amounts, this is inconsistent with results in international studies on consumption patterns in University students (Hadjimbei et al., 2016; Kyrkou et al., 2018; Navarro-González et al., 2014).

While there may be a true difference in eating patterns, this inconsistency in results from different studies may also be due to varied interpretations of what foods constitute the Mediterranean diet and thus a variation in the scores used to assess adherence to it. Furthermore, the association reported may be limited by the relatively small sample used in this study. Such findings point towards the conclusion that the diet of the majority of students in this study is a typical of the Westernized dietary pattern, that is low in fruits and vegetables (Romero-Polvo et al., 2012) and high in red and processed meat (Naja et al., 2015).

This cross-sectional study has a number of strengths. Besides being the first study in Malta that has explored adherence to the Mediterranean dietary pattern in a sample of University of Malta students, it made use of a literature-based adherence score to assess students' adherence which is suitable for assessing adherence at individual, clinical and epidemiological levels (Sofi et al., 2014). In addition, the use of a photographic atlas to facilitate the quantification of food portion sizes aided to reduce estimation errors (MAFF, 1997). The study's design, results and strengths indicate its feasibility and support the use of its measurement tool. Furthermore, some limitations have also been identified. Dietary assessment is notoriously considered one of the main limitations of nutritional epidemiology with daily intake being greatly affected by the day of the week, seasonality and culture (Willett, 2012). Bias and underreporting are typical limitations of studies using convenience sampling and face-to-face interviews (Bryman, 2016). Another limitation inherent to the study design includes the use of an adherence score (Michels & Schulze, 2005).

5. Conclusion

In this population of University of Malta students, a medium adherence to the Mediterranean dietary pattern was reported, consistent with evidence from international studies showing similar adherence among university students from countries in the Mediterranean region. The nutritional intake of students is inadequate for some food groups, indicative of a more predominant Westernized dietary pattern. Public health and policy initiatives should be considered at an international, national and individual levels to increase adherence to healthy dietary patterns and shift current dietary trends back to the traditional, healthier Mediterranean diet. This study design could be used on a larger sample population and in different population groups.

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Conflict of interest

Authors declare no conflict of interests.

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