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Lifestyle Factors Associated with Children's and Adolescents' Adherence to the Mediterranean Diet Living in Mediterranean Countries: The DELICIOUS Project

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Abstract: Background/Objectives. Traditional dietary patterns are being abandoned in Mediterranean countries, especially among younger generations. This study aimed to investigate the potential lifestyle determinants that can increase adherence to the Mediterranean diet in children and adolescents. **Methods.** This study is a cross-sectional analysis of data from five Mediterranean countries (Italy, Spain, Portugal, Egypt, and Lebanon) within the context of the EU-funded project DELICIOUS (UnDerstanding consumer food choices & promotion of healthy and sustainable Mediterranean Diet and Lifestyle in Children and adolescents through behavIOUral change actionS). This study comprised information on 2011 children and adolescents aged 6–17 years old collected during 2023. The main background characteristics of both children and parents, including age, sex, education, and family situation, were collected. Children's eating (i.e., breakfast, place of eating,

etc.) and lifestyle habits (i.e., physical activity level, sleep, and screen time) were also investigated. The level of adherence to the Mediterranean diet was assessed using the KIDMED index. Logistic regression analyses were performed to test for likelihood of higher adherence to the Mediterranean diet. **Results.** Major determinants of higher adherence to the Mediterranean diet were younger age, higher physical activity level, adequate sleep duration, and, among dietary habits, having breakfast and eating with family members and at school. Parents' younger age and higher education were also determinants of higher adherence. Multivariate adjusted analyses showed that an overall healthier lifestyle and parents' education were the factors independently associated with higher adherence to the Mediterranean diet. **Conclusions.** Higher adherence to the Mediterranean diet in children and adolescents living in the Mediterranean area is part of an overall healthy lifestyle possibly depending on parents' cultural background.

Keywords: Mediterranean diet; determinants; children

1. Introduction

The Mediterranean dietary pattern refers to the dietary habits evolved over centuries adopted by the individuals living in the Mediterranean area [1]. Although there is no univocal definition due to the diversity in cultural and heritage background, some common characteristics include high consumption of fruits, vegetables, legumes, nuts, and whole grains; low consumption of red meat and sweets; extra virgin olive oil as the main source of fat; and moderate consumption of dairy products, poultry, eggs, and fish as sources of animal proteins [2]. The Mediterranean diet is also an example of a sustainable diet in which seasonal and traditional foods and biodiversity are favored [3,4]. Scientific evidence has demonstrated that higher adherence to the Mediterranean diet is associated with a lower risk of noncommunicable diseases, including cardiovascular disease [5], metabolic syndrome and its components [6,7], neurodegenerative diseases [8], and preventive effects against certain cancers [9]; overall, the adoption of this dietary pattern has been related to a prolonged lifespan [10]. The mechanisms related to the benefits of the Mediterranean diet rely on an optimal balance between nutrients, including healthy unsaturated fats, fiber, and limitation of trans fats and refined sugars, as well as richness in plant-based products, providing a large variety of vitamins and potentially beneficial bioactive compounds [11,12]. Concerning children and adolescents, a recent meta-analysis of randomized clinical trials investigating the effect of Mediterranean-diet-based interventions has confirmed its efficiency in reducing body mass index and obesity [13], resulting in higher quality of life [14]. The benefits associated with the Mediterranean diet could be related to the anti-inflammatory and antioxidant properties of the many components of such plant-based dietary patterns, as well as a proper balance between macro- and micronutrients, fiber content, and limited contribution to energy intake of unhealthy fats and sugars [15]. Notwithstanding the aforementioned benefits, while diet quality has been registered as being improved globally [16], adherence to the Mediterranean diet has decreased over time [17] and has been shown to suffer from poor popularity among children and adolescents living in Mediterranean countries [18]. Aside from diet quality, concerns regarding engagement in overall unhealthy lifestyles have been raised over the last decades [19]. Regarding eating habits, it has been observed that skipping breakfast [20] and out-of-home eating [21] are associated with higher prevalence of obesity and increased risk of becoming overweight or obese, respectively. Similarly, the frequency of school and family meals is associated with better diet quality and may reduce the risk of obesity and poorer mental health and wellbeing [22]. On top

of that, sedentary behaviors (such as screen time) and lack of physical activity have been reported worldwide, with about half the after-school time spent in sedentary activities [23]. Curiously, higher rates of scarce physical activity have been reported in Mediterranean countries, where the climate and the traditional lifestyle could actually promote opposite behaviors [24]. Also, unhealthy lifestyles established during childhood have been reported to form the foundation for such behaviors in the future [25]. Overall, intervening at an early stage in order to establish healthy eating behaviors during childhood, has been considered a good strategy to prevent age-related noncommunicable diseases in adulthood [26]. The aim of this study was to identify the main factors that can influence the adherence to the Mediterranean diet in children and adolescents in five Mediterranean countries.

2. Materials and Methods

2.1. Study Design and Population

This cross-sectional analysis was carried out in the framework of the European-funded DELICIOUS (UnDERstanding consumer food choices & promotion of healthy and sustainable Mediterranean Diet and Lifestyle in Children and adolescents through behavIOUral change actionS) project [27]. For the purposes of this study, a preliminary survey was conducted among parents of 6–17-year-old children and adolescents from five Mediterranean countries (Italy, Spain, Portugal, Egypt, and Lebanon). Participants were enrolled on a voluntary basis from the network of collaborators of the Technological Institute for Children's Products & Leisure (AIJU). Inclusion criteria were the following: (i) having children fitting the target population in terms of age range and (ii) having access to the internet to fill out the survey. There were no exclusion criteria once the volunteers agreed to be enrolled in the survey. Taking into account similar studies conducted in Mediterranean countries with similar goals [28–32], a target of about 400 individuals per each Mediterranean country was estimated to be sufficient to detect significant differences across groups of exposed individuals. However, given the variety of variables investigated and the voluntary nature of the participation in the survey, the sample cannot be considered truly representative of a random population but, rather, indicative of the target one. Data were collected via an electronic survey filled out by the parents, which provided an informed consent prior to enrollment in the survey. All procedures were carried out according to the Declaration of Helsinki (1989) of the World Medical Association.

2.2. Data Collection

Each participant was asked to report data regarding demographic and lifestyle characteristics: parents' sex, age, education, and occupation and children's sex, age, anthropometric measures, eating habits, level of physical activity, and screen and sleep time. Parents' education was categorized as (i) low (primary), (ii) medium (secondary), (iii) and high (tertiary), while occupation was categorized as (i) unemployed and (ii) currently working. Based on the guidelines of the Centers for Disease Control and Prevention (CDC) weight-for-height growth charts percentiles for children and teens ages 2 through 19 years [33], sex- and age-related body mass index (BMI) of children/adolescents was calculated from obtained height and weight, and it was used to categorize children/adolescents as (i) normal weight (BMI 5th–84th percentile), (ii) overweight (BMI 85th–94th percentile), and (iii) obese (BMI \geq 95th percentile for children and teens of the same age and sex). Lifestyle quality of children/adolescents was assessed using the Electronic Kids Dietary Index (E-KINDEX), which incorporates 3 main domains of questions about (i) food groups intake (13 items), (ii) eating beliefs and behaviors (8 items), and (iii) dietary practices (9 items) [34]. For the purposes of this study, only domains related to lifestyle were used (as food groups intake represented the outcome of interest). Physical activity level was assessed using

The International Physical Activity Questionnaire-Short Form (IPAQs), referring to the last 7 days before compilation about three specific types of activities (walking, moderate-intensity activities, and vigorous-intensity activities), with frequency (measured in days per week) and duration (time per day) collected separately for each activity type [35]. Finally, based on the recommendations of the National Sleep Foundation concerning the optimum sleeping time in children and teenagers, sleep duration (in hours) has been categorized as follows: (i) <8 h, (ii) 8–10 h, and (iii) >10 h [36], while screen time (in hours) was categorized as (i) <2 h/day, (ii) 2–4 h/day, and (iii) >4 h/day.

2.3. Dietary Assessment and Mediterranean Diet Adherence

Using a semi-structured 24 h recall, dietary information was collected. Participants were asked the type of foods and drinks for each meal (including snacks) their offspring had consumed in the previous 24 h among 20 main food groups provided (fruit, fresh and cooked vegetables, olive oil, pasta or rice, red meat, white meat, tea, coffee, chocolate, juices, legumes, fish and seafoods, cakes and biscuits/pastries, milk, yogurt, nuts, whole grains, eggs, junk foods, and fast foods) and an open-ended space for additional foods. Consumption of foods occurring over the time span of a week was assessed through food frequency questions including the most common food items. Adherence to the Mediterranean diet was assessed through the Mediterranean Diet Quality Index (KIDMED) test, which is a 16 yes/no question assay on dietary habits. Answers with questions that had a negative connotation towards the Mediterranean diet received a score of -1 , while those with questions that indicated a Mediterranean habit received a score of $+1$, reaching a possible total score of 12. According to the literature [37], the KIDMED score was divided into categories and a score ≥ 7 was deemed as having high adherence to the Mediterranean diet.

2.4. Statistical Analysis

Categorical variables were provided as absolute numbers and relative frequencies, with differences between background characteristics tested through the chi-squared test. Logistic regression analyses were performed to test the association between the variables of interest and high adherence to the Mediterranean diet by calculating the odds ratios (ORs) and 95% confidence intervals (CIs). Variables of interest were grouped and adjusted based on macro domains (i.e., demographic characteristics of parents and children/adolescents, eating behaviors, and lifestyle habits). An additional multivariate analysis was conducted with those variables that showed significance in each domain. All p -values were reported as two-sided and considered significant when <0.05 . SPSS 28 (SPSS Inc., Chicago, IL, USA) software was used for all the statistical tests.

3. Results

A total of 2011 participants were recruited. Based on parents' responses, 865 children and adolescents had been reported to have high adherence to the Mediterranean diet. The main demographic characteristics of the study population (parents and children/adolescents) according to adherence to the Mediterranean diet are presented in Table 1. A higher proportion of younger children aged between 6 and 8 years ($p = 0.017$), female sex respondents ($p = 0.006$), and those with a higher parental educational level ($p < 0.001$) and older age ($p < 0.001$) were found among those with higher adherence to the Mediterranean diet (Table 1). A multivariate analysis of these variables showed that those whose parents had a higher level of education were significantly associated with high adherence to the Mediterranean diet (OR = 2.11, 95% CI: 1.15, 3.88). However, a significant negative association with high Mediterranean diet adherence was also found in partici-

pants aged between 12 and 14 years (OR = 0.72, 95% CI: 0.54, 0.98), those that were obese (OR = 0.68, 95% CI: 0.50, 0.93), and those with older parents (OR = 0.64, 95% CI: 0.48, 0.85).

Table 1. Demographic characteristics of parents and children/adolescents participating in the study by level of adherence to the Mediterranean diet (n = 2011).

	Adherence to Mediterranean Diet		<i>p</i> -Value	High Adherence to Mediterranean Diet
	Low	High		OR (95% CI) *
Age groups, (n, %)			0.017	
6–8 y	296 (25.8)	249 (28.8)		1
9–11 y	267 (23.3)	235 (27.2)		1.00 (0.75, 1.35)
12–14 y	282 (24.6)	196 (22.7)		0.72 (0.54, 0.98)
15–17 y	301 (26.3)	185 (21.4)		0.73 (0.54, 0.99)
Sex, (n, %)			0.472	
Male	575 (50.2)	420 (48.6)		1
Female	571 (49.8)	445 (51.4)		0.96 (0.78, 1.19)
Weight status, (n, %)			0.159	
Normal weight	599 (68.6)	488 (68.8)		1
Overweight	135 (15.5)	128 (18.1)		1.02 (0.76, 1.36)
Obese	139 (15.9)	93 (13.1)		0.68 (0.50, 0.93)
Parent's age			<0.001	
<44 y	204 (17.8)	219 (25.3)		1
≥45 y	942 (82.2)	646 (74.7)		0.64 (0.48, 0.85)
Parents occupation, (n, %)			0.060	
Unemployed	854 (75.8)	679 (79.4)		1
Current working	272 (24.2)	176 (20.6)		0.91 (0.69, 1.20)
Parents education, (n, %)			<0.001	
Low	68 (6.2)	23 (2.7)		1
Medium	467 (42.6)	283 (33.8)		1.48 (0.80, 2.72)
High	561 (51.2)	532 (63.5)		2.11 (1.15, 3.88)

* Analyses were adjusted for all variables presented in the table.

The eating habits of participants according to level of adherence to the Mediterranean diet and their associations are presented in Table 2. There was a significant difference in adherence to the Mediterranean diet, with higher rates among children and adolescents always having breakfast ($p < 0.001$) and eating more frequently with family members ($p = 0.004$) and at school ($p = 0.010$). Regarding the association between the variables, having breakfast (OR = 3.03, 95% CI: 2.18, 4.21), out-of-home eating (OR = 1.66, 95% CI: 1.18, 2.33), and eating with family members (OR = 2.49, 95% CI: 1.10, 5.63) were associated with higher Mediterranean diet adherence.

The lifestyle habits of children/adolescents according to Mediterranean diet adherence and the association between these potential determinants and high adherence to the Mediterranean diet are presented in Table 3. A higher proportion of individuals with optimal sleep duration, between 8 and 10 h ($p < 0.001$), had higher Mediterranean diet adherence; however, in children and adolescents with lower physical activity levels ($p < 0.001$) and lower healthy lifestyle score (based on the E-KINDEX score, $p = 0.021$), a lower adherence to the Mediterranean diet was reported. A significant association between higher sleep duration (OR = 1.61, 95% CI: 1.01, 2.56), intermediate level of physical activity (OR = 2.24, 95% CI: 1.78, 2.21), higher healthy lifestyle score (OR = 1.28, 95% CI: 1.03, 1.60), and higher adherence to the Mediterranean diet was registered.

Table 2. Eating behaviors of children/adolescents by level of adherence to the Mediterranean diet (n = 2011).

	Adherence to Mediterranean Diet		<i>p-Value</i>	High Adherence to Mediterranean Diet
	Low	High		OR (95% CI) *
Breakfast habit, (n, %)			<0.001	
Never/seldom	209 (18.2)	68 (7.9)		1
Often	204 (17.8)	144 (16.6)		2.06 (1.45, 2.92)
Always	733 (64.0)	653 (75.5)		3.03 (2.18, 4.21)
Eating with family, (n, %)			0.004	
Seldom	33 (2.9)	8 (0.9)		1
Often	353 (30.8)	248 (28.7)		2.51 (1.11, 5.70)
Daily	760 (66.3)	609 (70.4)		2.49 (1.10, 5.63)
Eating alone, (n, %)			0.842	
Never/seldom	710 (62.0)	537 (62.1)		1
Often	344 (30.0)	253 (29.2)		1.20 (0.92, 1.56)
Daily	92 (8.0)	75 (8.7)		1.12 (0.79, 1.59)
Eating at school, (n, %)			0.010	
Never/seldom	504 (44.0)	327 (37.8)		1
Often	349 (30.5)	273 (31.6)		1.23 (0.98, 1.55)
Almost daily	293 (25.6)	265 (30.6)		1.12 (0.79, 1.59)
Eating advertised foods, (n, %)			0.261	
No	600 (52.4)	431 (49.8)		1
Yes	546 (47.6)	434 (50.2)		1.14 (0.93, 1.40)
Eating home-made foods, (n, %)			0.057	
Seldom	159 (13.9)	93 (10.8)		1
Often	512 (44.7)	379 (43.8)		1.19 (0.87, 1.62)
Almost daily	475 (41.4)	393 (45.4)		1.25 (0.93, 1.68)

*Analyses were adjusted for all variables presented in the table.

Table 3. Lifestyle behaviors of children/adolescents by level of adherence to the Mediterranean diet (n = 2011).

	Adherence to Mediterranean Diet		<i>p-Value</i>	High Adherence to Mediterranean Diet
	Low	High		OR (95% CI) **
Sleep duration, n (%)			<0.001	
Less than 8 h	246 (21.5)	125 (14.5)		1
8–10 h	846 (73.8)	696 (80.5)		1.46 (1.14, 1.86)
>10 h	54 (4.7)	44 (5.1)		1.61 (1.01, 2.56)
Screen time (n, %)			0.211	
<2 h/day	650 (56.7)	481 (55.6)		1
2–4 h/day	398 (34.7)	325 (37.6)		1.06 (0.88, 1.29)
>4 h/day	98 (8.6)	59 (6.8)		0.85 (0.60, 1.22)
Physical activity level, (n, %)			<0.001	
Low	666 (58.1)	351 (40.6)		1
Medium	209 (18.2)	252 (29.1)		2.24 (1.78, 2.81)
High	271 (23.6)	262 (30.3)		1.78 (1.43, 2.21)
Healthy lifestyle score *, (n, %)			0.021	
Low	467 (40.8)	311 (36.0)		1
Medium	332 (29.0)	244 (28.2)		1.16 (0.93, 1.46)
High	347 (30.3)	310 (35.8)		1.28 (1.03, 1.60)

* based on the E-KINDEX score. **Analyses were adjusted for all variables presented in the table.

Figure 1 shows the multivariate analysis of the major determinants of higher adherence to the Mediterranean diet. A significant association between higher parental education (OR = 2.06, 95% CI: 1.14, 3.76), intermediate physical activity level (OR = 2.31, 95% CI: 1.78, 3.00), and higher healthy lifestyle scores (OR = 1.46, 95% CI: 1.10, 1.93) was confirmed.

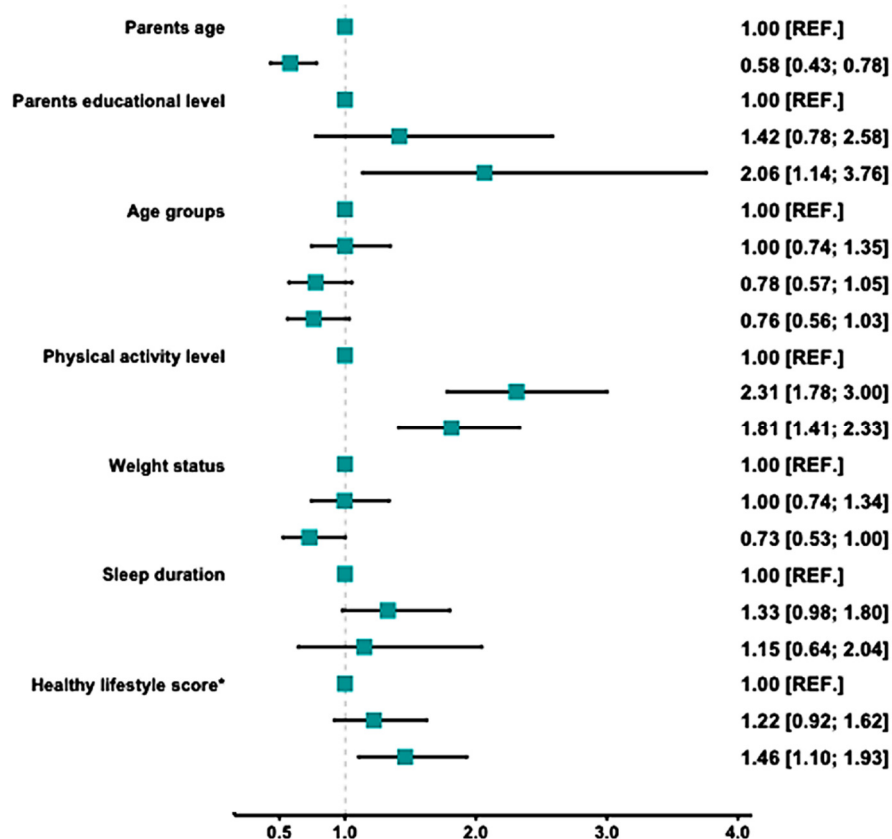


Figure 1. Multivariate analysis of factors associated with high adherence to the Mediterranean diet. * Healthy lifestyle score based on the E-KINDEX score.

No significant differences in the association between the potential Mediterranean diet determinants (i.e., parents’ age, parents’ educational level, age groups, physical activity level, sleep duration, and healthy lifestyle score) and high adherence to the Mediterranean diet were found among the countries involved in this study (Supplementary Table S1).

4. Discussion

The present study investigated factors associated with adherence to the Mediterranean diet of children and adolescents living in five Mediterranean countries. The aim of this study was to highlight key findings concerning demographic and other potential influencing factors in order to identify potential targets for strategies for improvement. Adherence to the Mediterranean diet in the study population has been recently reported to be lower than one could expect in Mediterranean countries and similar across countries included in this study [38]. Among major food groups poorly consumed, fruit, vegetables, legumes, and cereals have been reported to be generally underrepresented in the diets of Mediterranean children and adolescents [39]. Recent studies reported slightly worse estimates, documenting a noticeable decline in adherence to the Mediterranean diet in Mediterranean countries, with high adherence ranging from 20% to 40% of children and adolescents in the countries involved in the present study [40–43]. Notably, the level of adherence to the Mediterranean diet in Mediterranean countries also suffered from the changes in lifestyle due to the recent COVID-19 pandemic (disrupted daily routines, including meal patterns,

physical activity, and school attendance), leading to an overall worsening of dietary habits, especially among younger age groups [44]. The results showed that higher adherence to the Mediterranean diet is rooted within an overall healthier lifestyle, including adequate physical activity, sufficient sleep and reduced screen time, and other specific eating habits, such as having breakfast and eating with family and at school. These findings are in line with the scientific literature published so far reporting that adherence to the Mediterranean diet has been generally influenced by both eating and lifestyle habits [45–48].

Among eating habits, having breakfast has long been hypothesized as a potential factor associated with adherence to the Mediterranean diet [49]. A multinational cross-sectional study involving different European countries showed that breakfast consumers had higher adherence to the Mediterranean diet than breakfast-skippers [50]. Similar results were found in a Lebanese cross-sectional study where breakfast-skippers had lower adherence to the Mediterranean diet [51]. However, recently, other aspects more related to the psychosocial domains of eating habits have gained interest: eating habits promoting conviviality, such as meals with parents or at school, have in fact been suggested to be related to higher adherence to the Mediterranean diet [52].

Among lifestyle factors, level of physical activity is among the most studied among younger generations for its association with dietary habits and a target for interventions to improve children's and adolescents' health [53]. Having an active lifestyle in childhood is important to estimate the risk of obesity in the upcoming puberty, a vulnerable period due to hormonal and lifestyle changes [54]. In fact, sedentary behaviors have been associated with unfavorable body composition and higher clustered cardiometabolic risk factors [55]. By contrast, a recent meta-analysis on children and adolescents showed that physical activity was associated with higher adherence to the Mediterranean diet and better general health [56]. With specific reference to those countries investigated in this study, a recent survey conducted in Lebanon regarding the role of some determinants on Mediterranean diet adherence underlined that a higher physical activity level was associated with greater adherence [57]. Similarly, several reports from Spain showed that individuals with higher physical activity levels were more likely to adopt a Mediterranean diet [58–60]. These trends have also previously been reported in Italian and Portuguese children and adolescents [49,61–65]. Also, the importance of having correct sleep hygiene [62–64] and reduced screen-time-related sedentary behaviors [66] is hypothesized to potentially be associated with higher adherence to the Mediterranean diet and prevention of obesity. Some studies specifically conducted on Spanish [58,67–70], Italian [31,71], Portuguese [43], and Lebanese [43] children and adolescents just support the hypothesis of an association between sleep quality (including sleeping time and length), reduced screen time, and higher adherence to the Mediterranean diet.

While most evidence suggests an association between lifestyle habits and adherence to the Mediterranean diet, we hypothesized that other background characteristics may be involved in determining dietary habits. In fact, our findings showed that family background characteristics may play a determinant role in such matters. A large number of studies suggest that adherence to the Mediterranean diet is consistently related to the demographic and social characteristics of both children and parents [68,72,73]. Some reviews have been performed regarding social factors affecting adherence to a healthy eating pattern in young adults [74,75] and eating behavior in children, emphasizing how different social factors, such as family environment, parental influences, education, and economic status, could affect children's food choices [76]. A large share of the literature agrees that parent educational level represents a crucial factor associated with higher adherence to the Mediterranean diet [77]. Concerning the countries directly involved in this study, previous cross-sectional analyses from primary school children with the purpose of in-

investigating the association between parents' lifestyle determinants and children's dietary habits reported that higher education of the mothers was an important determinant of their children's adherence to the Mediterranean diet [29,78,79]. Similar determinants of adherence to the Mediterranean diet have also been reported in Spanish children [67] and adolescents [80]. Interestingly, a comparative analysis of two cross-sectional nationwide representative studies investigating how children's and adolescents' dietary patterns have changed over 20 years in Spain reported that diet quality has worsened especially when parents' education was not university level [81]. Based on the data available in the scientific literature, it can be hypothesized that parents with a higher level of education could have more nutritional knowledge and positively influence adherence to the Mediterranean diet in their children [82]. In addition, parents with higher educational levels could have more motivation toward healthier choices to pass on to their offspring. Several studies in fact have underlined that adherence to a Mediterranean dietary pattern increased with greater nutrition knowledge [83–85].

To effectively promote adherence to the Mediterranean diet (MD) among children, interventions should be designed to address key factors such as parental education, sleep duration, and overall lifestyle behaviors. As evidence suggests that high parental education and active engagement in health-promoting behaviors are strong predictors of children's dietary habits, public health strategies should prioritize parental education programs that emphasize the importance of a balanced diet, particularly the Mediterranean dietary pattern. These programs can be integrated into community health initiatives, schools, and primary care settings. For example, providing parents with resources such as workshops, printed materials, and digital platforms focused on meal planning, cooking skills, and the nutritional benefits of traditional Mediterranean foods could foster positive dietary habits in children. Additionally, strategies aimed at enhancing the nutritional literacy of parents may contribute to the creation of a supportive home environment, which is crucial in shaping children's eating behaviors. Promoting parental role models who consistently follow the Mediterranean diet could also reinforce these healthy eating patterns within families. In addition, the content of such interventions should include the promotion of healthy lifestyles in general, which encompasses factors like sleep hygiene, physical activity, limited screen time, and balanced eating. For instance, schools could increase opportunities for physical activity through daily recess, sports programs, or after-school physical activity clubs, while also limiting the availability of unhealthy foods in school cafeterias. Public health campaigns could also promote the benefits of limiting screen time and engaging in active play, highlighting how these behaviors positively influence both sleep and dietary habits.

The current study presents strengths and limitations that should be considered. The main strength is represented by the multinational sample retrieved around the geographical Mediterranean area. Nevertheless, the cross-sectional analysis only permits estimating the association between background characteristics, eating and lifestyle habits, and Mediterranean diet adherence but not the casualty relation. Moreover, data collection through questionnaires administered to the parents referring to their children may be subjected to memory and social desirability bias. Additionally, data are self-reported; thus, it may also lack accuracy (i.e., concerning measures). Finally, given the voluntary participation and the large number of variables investigated, we cannot establish whether the sample collected is truly representative of the general population it refers to.

5. Conclusions

In conclusion, exploring current eating and lifestyle habits in children and adolescents might be useful to explore determinants of adherence to the Mediterranean diet and, more

generally, engagement in healthy or unhealthy lifestyle behaviors. Identifying potential determinants of adherence to healthy dietary patterns may represent a valid aid to select important targets of multidisciplinary interventions in children and adolescents. Efforts to improve adherence to the Mediterranean diet in European youth could benefit from targeted interventions that address the specific determinants identified in these studies. Promoting physical activity, reducing screen time, and enhancing nutrition education both at home and in schools are crucial steps. Incorporating these strategies into a comprehensive intervention framework such as the DELICIOUS project itself could enhance Mediterranean diet adherence in children, not only by targeting dietary behaviors directly but also by addressing the broader environmental and lifestyle factors that influence children's health. These efforts should be designed to be accessible, sustainable, and adaptable across various socio-economic and cultural contexts to ensure their widespread impact. Additionally, policies aimed at making healthy, Mediterranean-diet-compatible foods more accessible and affordable can help foster better adherence. Growing interest from governmental bodies is warranted to tackle the burden of children's and adolescents' malnutrition and adoption of behaviors related to detrimental effects in the future.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/nu17010026/s1>, Table S1: Factors associated with high adherence to the Mediterranean diet in individual countries participating in the study.

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