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# THE IMPACT OF NUTRITION ON STUDENT PERFORMANCE AND HEALTH: WHY THE MEDITERRANEAN DIET?

**Elmira Rama, Xhezair Abdija, Ajten Rushiti**

<sup>1</sup> University of Tetova, Faculty of Natural Sciences

Department of Biology

E-mail: [elmira.ra@libero.it](mailto:elmira.ra@libero.it)

 <https://orcid.org/0000-0002-8510-8322>

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## Abstract

Malnutrition is associated with poor psycho-physical health, behavioral problems, and unsatisfactory learning outcomes. Numerous studies show that adhering to a healthy diet such as the Mediterranean Diet (MD) can have beneficial effects on students, increasing their academic performance, quality of life, and their health status. 200 students aged 10-15 years it turns out that a large proportion of students surveyed; despite the information they have about healthy foods, do not eat properly and have admitted that they have low concentration and lack of attention during the learning process. Based on this identified situation, it is necessary to orient students towards a correct lifestyle and mainly towards the Mediterranean diet as a healthy dietary model.

**Keywords:** Food, students, Mediterranean diet, learning process, learning outcomes.

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## I. Introduction

Education in schools for healthy eating is seen as a key strategy for promoting healthy eating habits, while a friendly school environment with physical activity ensures a lower risk of overweight. [1] Improper eating habits during adulthood can have short-term effects on the adolescent individual and relational psycho-physical health, but also long-term effects (American Dietetic Association, 2006).[2] This includes both excessive food consumption and vice versa, which over time can also affect serious health problems. The Mediterranean diet represents one of the healthiest dietary models, but unfortunately, among children and adolescents, recent decades have witnessed a shift from the Mediterranean diet to the "Western" diet, which consists of a higher consumption of meat, sugars and saturated fats.[3]

Globalization seems to be affecting the neglect of consumption of local products, leading to changes in the tradition of nutrition [4] and an incorrect diet.

### ***1.1 Mediterranean diet***



Picture1. Ingredients of the Mediterranean diet

The Mediterranean diet is recognized by UNESCO as the Intangible Cultural Heritage of mankind. It remained virtually unchanged until 1950 and goes beyond a simple list of foods, as it relates to the culture of life, social, traditional and agricultural practices.[5]

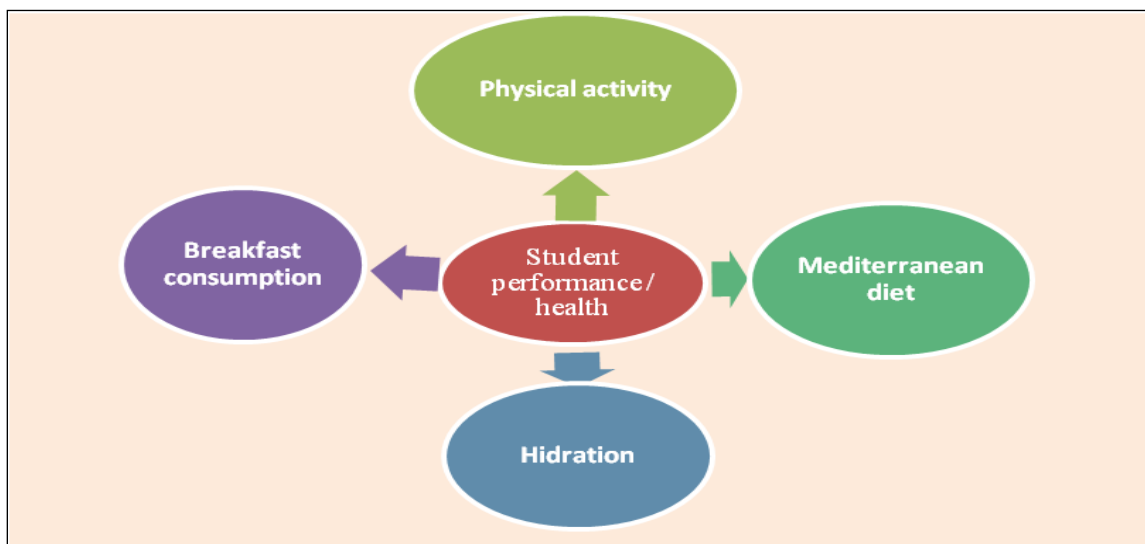
The Mediterranean diet is based on a consumption of carbohydrates with an index of low glycemic, unsaturated fats, olive oil, fruits, and vegetables in a low consumption of meat and dairy products. It is also characterized by a limited consumption of sugar. The Mediterranean diet includes the consumption of local and seasonal products.[6]

Some studies have identified the importance of promoting this diet in the early stages of life in order to encourage normal physical and academic development in children and adolescents [7, 8].

### 1.2 Description of the situation and purpose

Some behaviors of our students become more and more present and the management of the classroom becomes more and more difficult for the teachers. Numerous trainings are held with teachers, where important issues on the development of the teaching process in the competency curriculum are addressed, but I have not yet heard the connection between nutrition and learning discussed. The purpose of this research is to identify errors in the way students eat, to turn the attention of the education sector to the organization of projects that orient them towards a correct way of consuming food.

### 1.3 Conceptual framework of the study



### 1.4 Research question

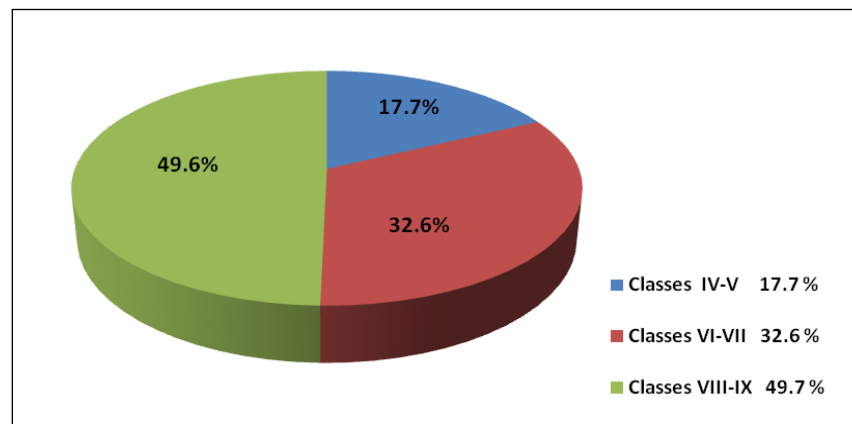
The main question that the study aims to answer is:

Does the way of nutrition affect the performance and health of students, and why is the Mediterranean diet suggested?

Asking for the answer to the main question, based on the students' self-declaration, we also answered the questions: How do our students eat? What is their level of well-being in the classroom?

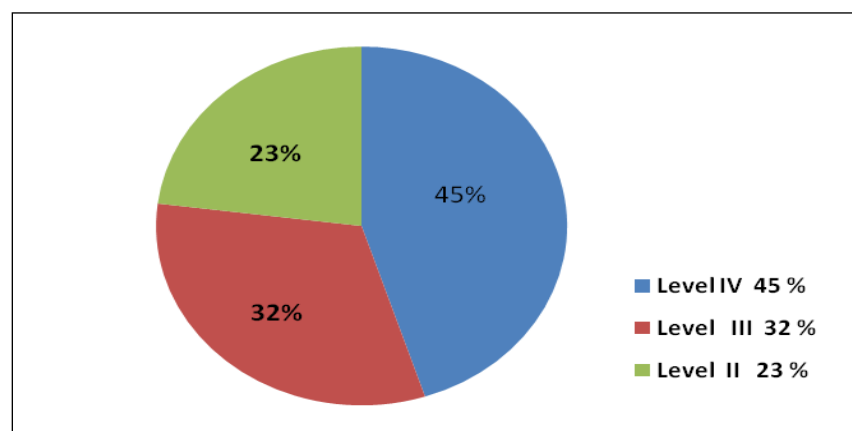
### 1.5 Methodology and general student data

The study was conducted through the completion of an online questionnaire by a sample of 200 school students under the jurisdiction of DRAP, Fier and DRAP, Durrës. Of these 120 were girls and 80 boys. The questionnaire was designed in Google Forms with simple and understandable questions for the age of the students, while maintaining their privacy. The structure of the questionnaire was without sections, focusing on questions that led to the discovery of conclusions in the interest of the study. This survey referred to the classes that are included in the grading system and almost all of them are public schools.



Graphic 1. Participation in the survey by classes

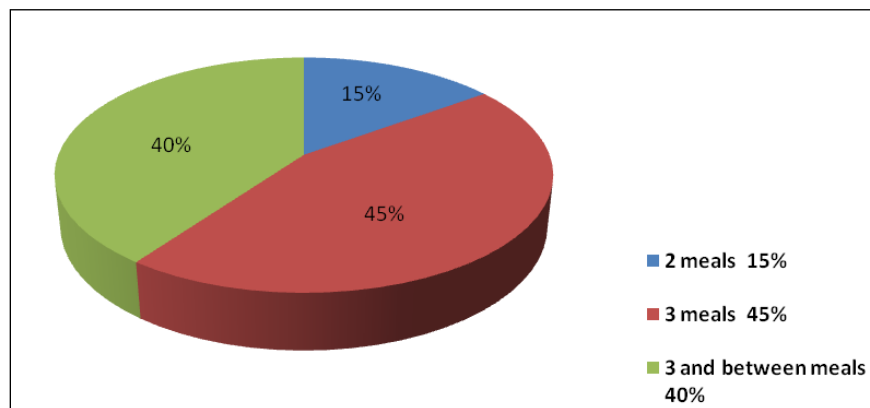
Graph no.2 shows the percentage of students who are with very good achievements (level IV, grade 9-10) with good achievements (level III, grade 7-8) and sufficient achievement (level II, grade 5-6)



Graphic 2. Level of achievement of surveyed students

## 2. Questionnaire Results

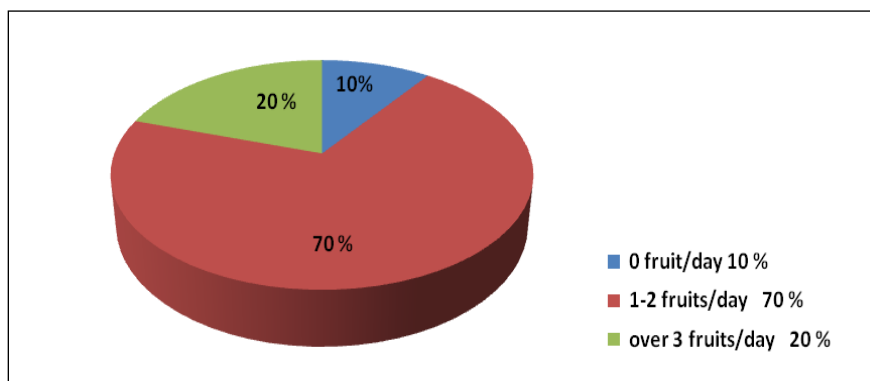
To the first question, if they have knowledge about healthy eating, 90% of the surveyed students answered 'yes'. The distribution of meals during the day results as in graph 3:



Graphic 3. Distribution of meals during the day

15% of students state that they do not consume breakfast. 85% say 'yes', but 45% refer only to a boiled egg, a glass of milk or a banana, while 40% usually eat bread with butter, jam, biscuits.

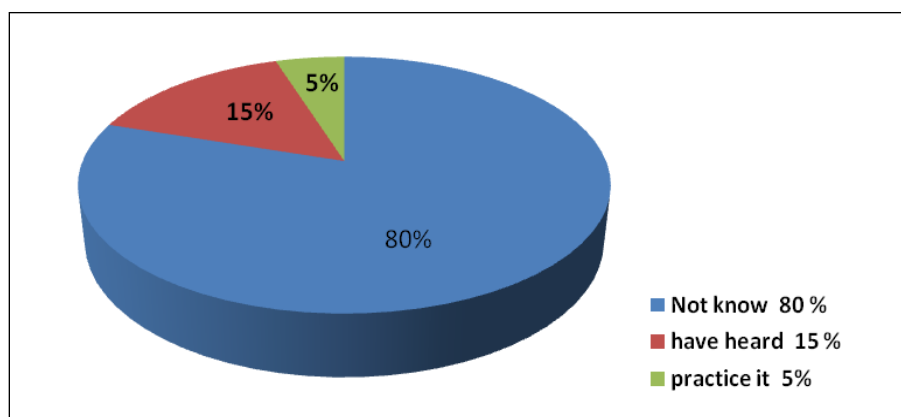
94% of students consume between breakfast-lunch meals (during the long break), foods bought in stores such as: molto, chips, chocolate, sandwiches, pie, toast, etc. Only 6% of students said they receive food from home. Fruit consumption was also assessed by the question "How much fruit do you consume per day" and we see that 10% of students answered 'None'.



Graphic 4. Quantity of fruits

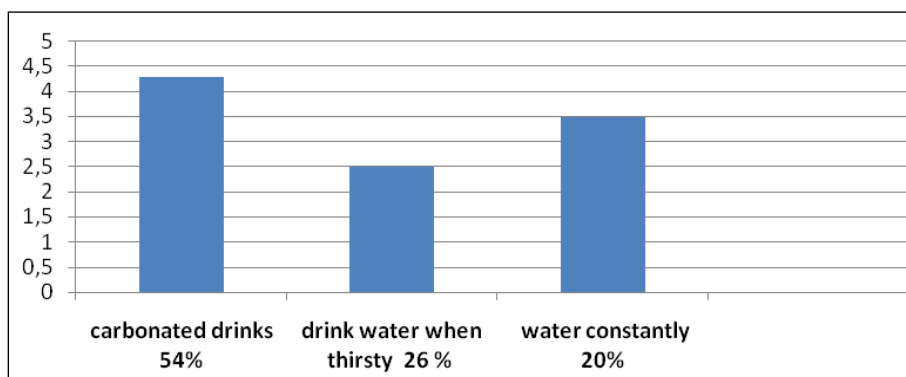
All respondents admit that they consume sweets even 60% of them admit that they like and consume them many times a day. While vegetables and legumes only 10 students mentioned, i.e., 5% of the total.

Meat consumption is present in all students with an average weekly frequency of 3-5 times a week, some have even responded every day of the week, while fish once a week by 75% of students, while the rest never. All students, more or less say that they perform physical activity outside of school hours. To assess adherence to the Mediterranean diet we asked a direct question to find out how many of them know and practice it. From the processing of answers we see that:



Graphic 5. Adherence to the Mediterranean diet

In terms of fluid consumption, as we see in graph no.6, 54% of students prefer to drink energy fluids such as: coca cola, B-52, sprite, red-bull, etc., while 46% drink water and of these only 26% only when thirsty.



Graphic 6. Consumption of fluids

We asked to assess the well-being of students during the learning process and for this we addressed the question "What makes you feel bad in class?". Some answers of 94% of students are as follows:

- Noise
- The shouts
- Vocabulary during the communication of some students
- Quarrels between students
- Hungry
- Bullying
- Insomnia, loss of attention, lack of concentration, etc.

Only 6% of students answer that they have no problems and confirm well-being throughout the lessons. In function of the purpose of the study, we also asked: "In what class do you start to lose concentration, feel drowsy or hyperactive in the classroom? 10 students answer in no lesson. 15% of students admit that they feel hyperactive, 5% drowsy in the first and third hour, 75% with loss of concentration in the last hours of class. In terms of sleep hours we can say that all students sleep an average of 9-10 hours. We also wanted to know the socio-economic situation of the students' families and only 8 students admitted that they have economic difficulties. With the last question we asked to know the students' opinion on what the school can offer regarding the lifestyle that favors their well-being and health. In summary of most answers one can formulate the opinion that more information is needed from the school about the way of nutrition. 6% of students say they have nothing needed in this regard, while 5 students have expressed the opinion that canteens should start in schools.

### **3. Discussion**

If we build an overview of the school-age table aged 10-15, we will see that it consists of a high consumption of sweets, meat, butter, canned products and energy drinks. Although we consume fruits, we do not know if they are seasonal, also vegetables and legumes are not consumed regularly, while olive oil is not preferred over butter. Unfortunately, 15% of respondents state that they skip breakfast regularly, and among those who eat breakfast, most usually consume cakes and butter. 45% of students who state that they consume 3 meals, we are not convinced if they consider food as a third meal in the long break: chips, molto, çibuk or chocolate. Seafood is rare in the diet of our students. In general, we can confirm through this surveyed sample that the way our students eat is incorrect and the observance of the Mediterranean diet is very poor. The impact of this wrong way is confirmed by the students by stating that there is noise and shouting in the classroom and that they do not feel focused and attentive throughout the learning process.



It is worth noting that 6% of students who answered that they do not present any concerns or loss of attention in any of the lessons, are almost all students who practice the Mediterranean diet, consume breakfast and belong to the assessment "very good" in learning achievements. Students ostensibly perform well, but this chronic malnutrition poses a risk to the future. A series of studies conducted on Mediterranean populations have shown that the Mediterranean diet combined with daily physical activity can prevent overweight with associated syndromes, and can also prevent the occurrence of chronic cardiovascular disease, tumors and type II diabetes [9].

#### 4. Conclusions and recommendations

In conclusion we can say that this study highlights the need for intervention in the form of school projects, to promote healthier food traditions in the younger generations. Education experts should take seriously the promotion of the Mediterranean diet, as an extremely healthy, environmentally sustainable food model and as a valuable ancient cultural heritage. Children as ambassadors of positive practices in their families will contribute to produce the changes that society currently needs in the optics of health and environmental care.

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