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A survey of the state of dietary knowledge of students of the medical faculty of Polish Medical Universities

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Abstract

Introduction:

Proper nutrition is an important element in pursuit of health. Appropriate selection of macro- and micro-ingredients allows to maintain the correct weight, avoid nutritional deficiencies and many health problems. Despite the fact that the topic of nutrition is primarily the concern of nutritionists, knowledge of nutrition is often helpful also for doctors.

Aim is to examine the state of knowledge of medical students studying in Poland on the principles of healthy eating.

Material and Methods: An anonymous online survey was conducted. The responses of 140 students of medicine from Polish medical universities were analyzed.

Results: Despite the fact that 52.1% of the respondents declared that they are interested in the topic of healthy eating, only 40.3% of the respondents correctly stated that buckwheat is a good source of magnesium in the diet. 72.7% of respondents wrongly thought that olive oil is a good source of omega-3 fatty acids in the diet. 78.1% of respondents correctly stated that canned food with a high salt content is a risk factor for stomach cancer. 52.5% of respondents believe that coffee increases the excretion of magnesium in the urine. The same number of respondents correctly considered green tea to be a source of substances similar to caffeine. 59.7% of respondents correctly stated that onions, leeks and cabbage should be avoided while following the diet recommended in irritable bowel syndrome.

Conclusion: Despite the expressed interest in the subject of healthy eating by the majority of the surveyed students, the results of the study suggest that the dietary knowledge of students of the medical faculty of Polish Medical Universities is not very good. In some questions, only about half of the respondents gave correct answers.

Key words: diet, magnesium, omega-3, irritable bowel syndrome

1. Introduction

Proper nutrition is one of the key elements necessary to stay healthy. Food is a source of carbohydrates, proteins, fats, macronutrients, micronutrients, trace elements and vitamins. All these ingredients are essential for the proper functioning of the human body. In addition to the quantitative supply of these ingredients, their quality is also important. In the case of fat, it is important, among others, ratio of omega-3: omega-6 in the diet [1].

Food is also a source of other substances, e.g. caffeine or ingredients that act similarly to it. Excessive consumption of this type of elements can be a source of health problems, especially for pregnant women [2].

A specific type of food may also be associated with a higher risk of developing a disease. This is e.g. in case of a relationship between the consumption of canned foods with a high salt content and the risk of stomach cancer [3].

However, some disease entities require the exclusion of certain foods from the diet to reduce symptoms that are burdensome for the patient. An example of such a condition is irritable bowel syndrome [4].

The aim of the study is to examine the state of knowledge of medical students studying in Poland on the principles of healthy eating.

2. Material and method

An anonymous online survey was conducted. Students were asked about the degree of interest in healthy eating, whether they believe that healthy eating is important for maintaining physical and mental health, and whether they believe that the correct nutritional strategy supports the treatment / rehabilitation process of patients. Then, the respondents were asked to indicate products which, according to them, are a good source of magnesium in the diet (assuming the criterion: > 100 mg of magnesium / 100 g of product). The products were selected on the basis of dietary tables available on the website of the *Medycyna Praktyczna* publishing house. In the next question, the respondents were asked to indicate good, in their opinion, sources of omega-3 fatty acids in the diet. These sources were selected in accordance with the publication of the Nutrition Standard for the Polish population published by the National Food and Nutrition Institute in 2017. Subsequently, subjects had to choose products which consumption is associated with an increased risk of stomach cancer. Later, students were asked to mark true sentences (based on current scientific research) about coffee consumption. In the next question, the respondents had to select beverages which, in their opinion, are a source of caffeine / substances with a caffeine-like effect. In the last question, the respondents were asked to mark the foods that should be avoided while following the diet recommended in irritable bowel syndrome.

The responses of 140 students of medicine from Polish medical universities were analyzed. 81.4% of the respondents were students of the Medical University of Lublin. 17.1% studied at the Pomeranian Medical University in Szczecin. Individuals studied at other universities. Most of the students (53.2%) were in the 5th year of studies at the time of the study. Students of the 3rd year constituted 24.5% of the group, 1st year - 7.9%, 2nd year - 5%, 4th year - 5% and 6th year - 4.3%.

3. Results

140 students took part in the study. 52.1% of them expressed interest in the topic of healthy eating. 40% stated that they are interested in nutrition to a small extent. 7.9% declared that they were not interested in the topic of healthy eating.

The vast majority of respondents (97.1%) considered that healthy eating is important for maintaining physical and mental health. The same number of people stated that the correct nutritional strategy supports the treatment / rehabilitation process of patients.

As products that are a good source of magnesium in the diet, the respondents most often indicated dark chocolate, almonds and buckwheat groats.

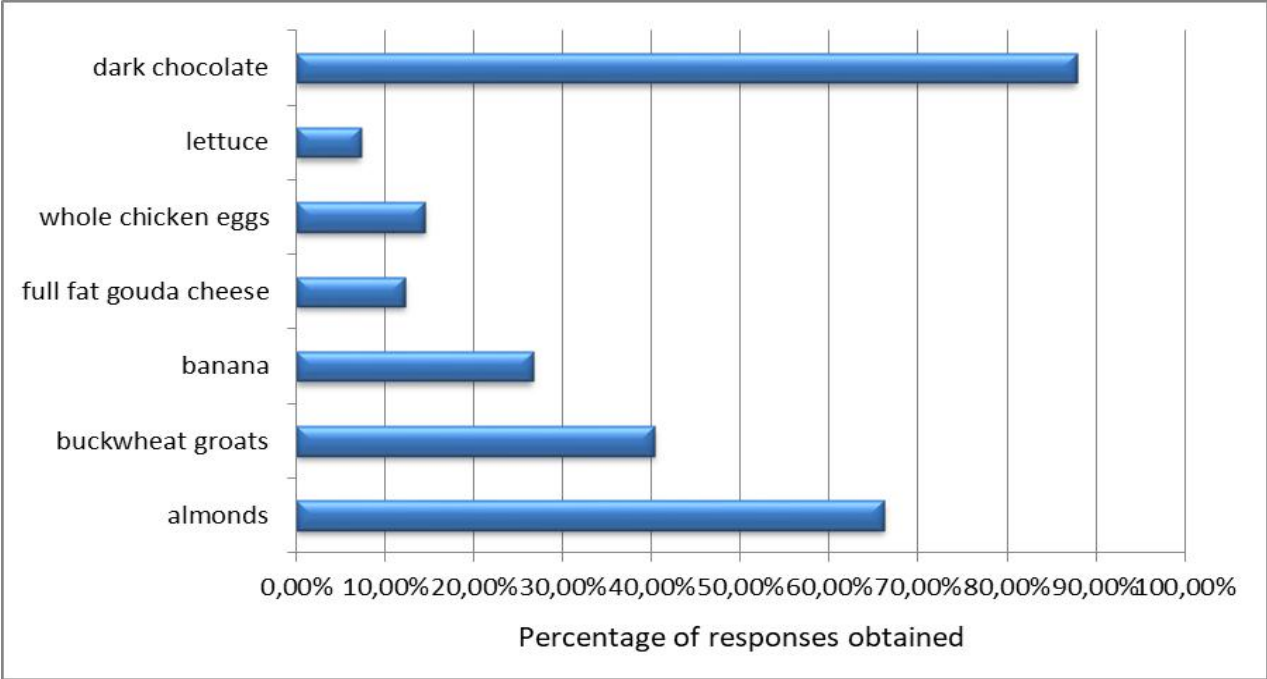


Figure 1. The percentage share of responses obtained about products that are a good source of magnesium in the diet

Dark chocolate obtained 87.8% of the responses, almonds 66.2%, buckwheat 40.3%. They were the only products in the list that met the criterion of magnesium content > 100mg / 100g of the product (Figure 1).

As a good source of omega-3 fatty acids in the diet, students most often indicated oily sea fish (89.9% of responses), olive oil (72.7%) and walnuts (64%). Out of these 3 foods, olive oil is not a good source of omega-3 fatty acids. Another product that is a good source of these fatty acids in the diet, sunflower oil received only 25.2% of the votes (Figure 2).

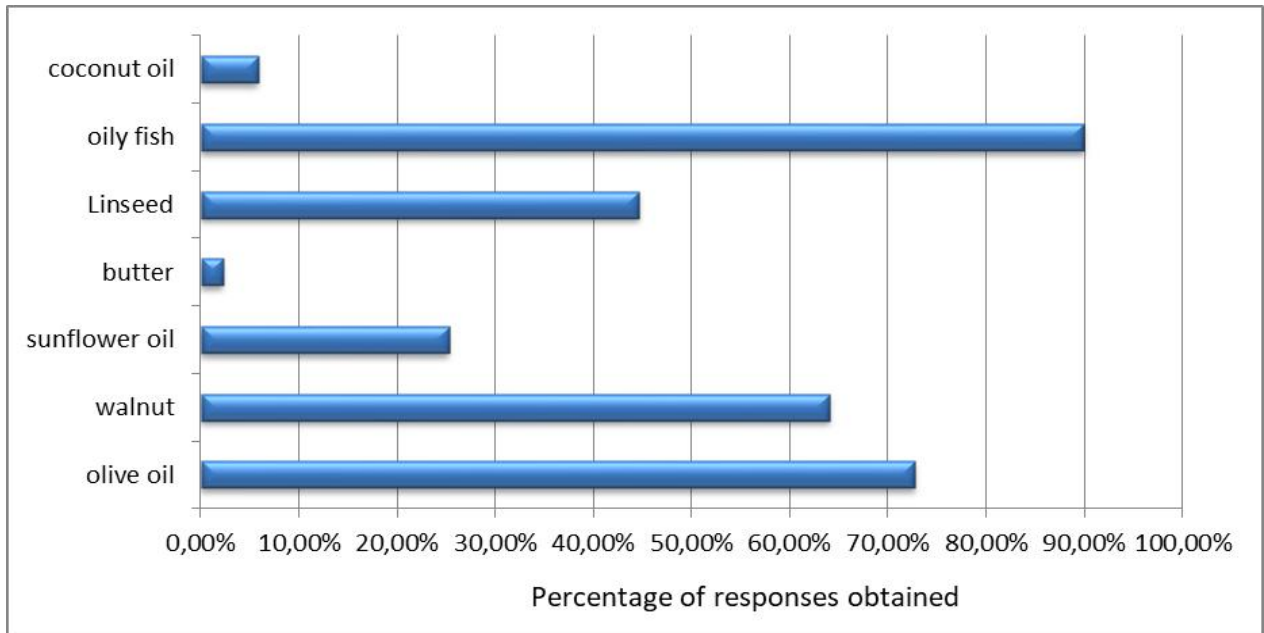


Figure 2. Percentage share of responses obtained about products that are a good source of omega-3 fatty acids in the diet

In the question concerning food products considered as a risk factor for stomach cancer, the respondents most often correctly indicated canned food with a high salt content (78.1% of the answers), smoked products (70.8%), and nitrites (69.3%). Red meat, which was not a risk factor for stomach cancer, obtained 49.6% of the responses (Figure 3).

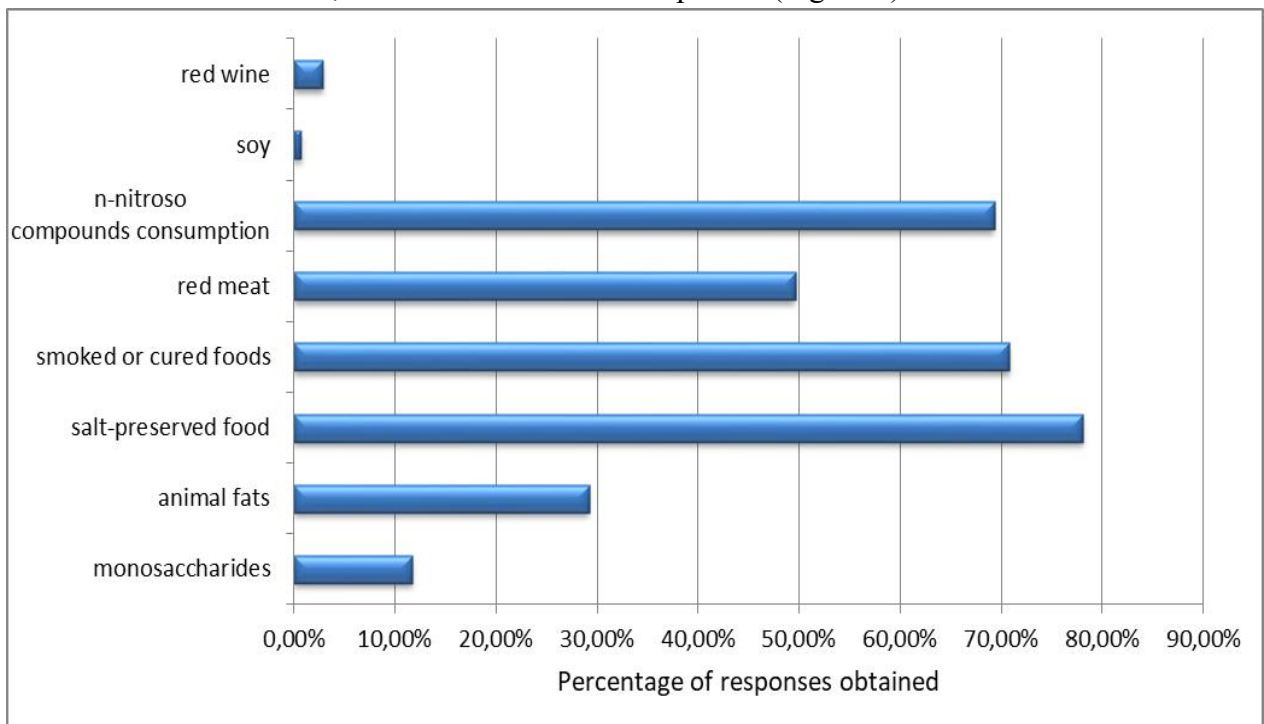


Figure 3. Percentage of responses obtained about food products considered a risk factor for stomach cancer

66.2% of respondents correctly attributed coffee to some anti-cancer properties, while 46.8% rightly assessed that coffee reduces the risk of developing type 2 diabetes. (Figure 4).

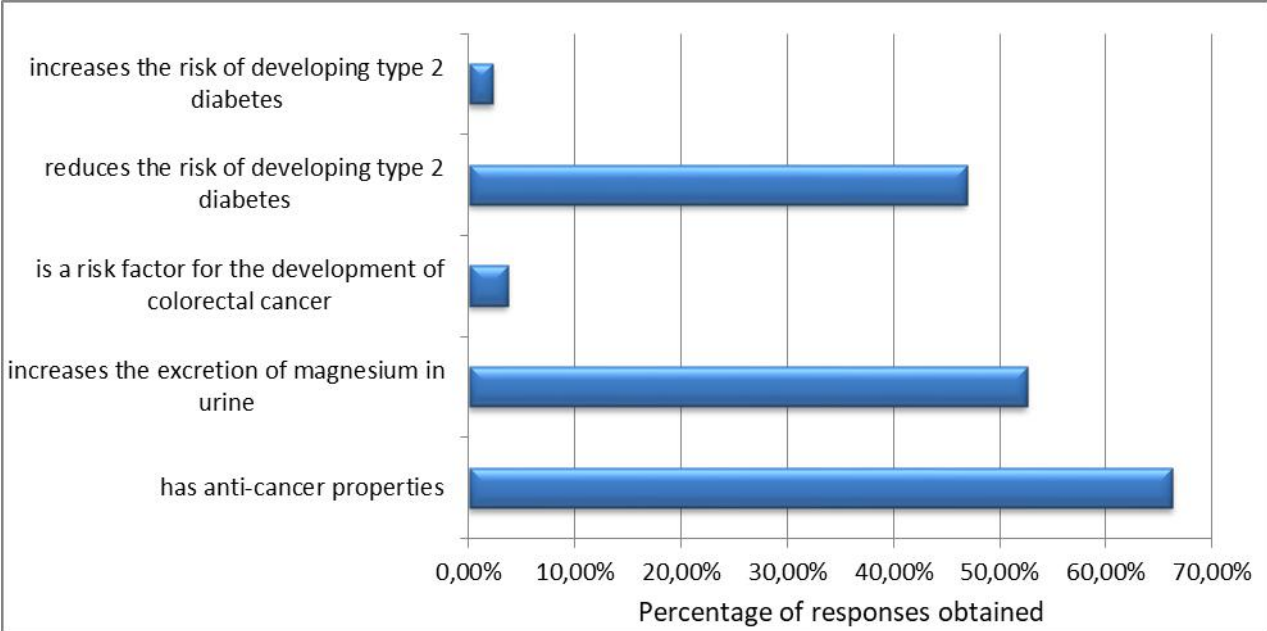


Figure 4. Percentage share of answers obtained about the properties of coffee

As the sources of caffeine, students most often mentioned coffee (93.5%), energy drinks (87.8%), black tea (86.3%), coca-cola (83.5%) and yerba-mate (81.3%) . Green tea was rightly considered a source of caffeine by 52.5% of respondents (Figure 5).

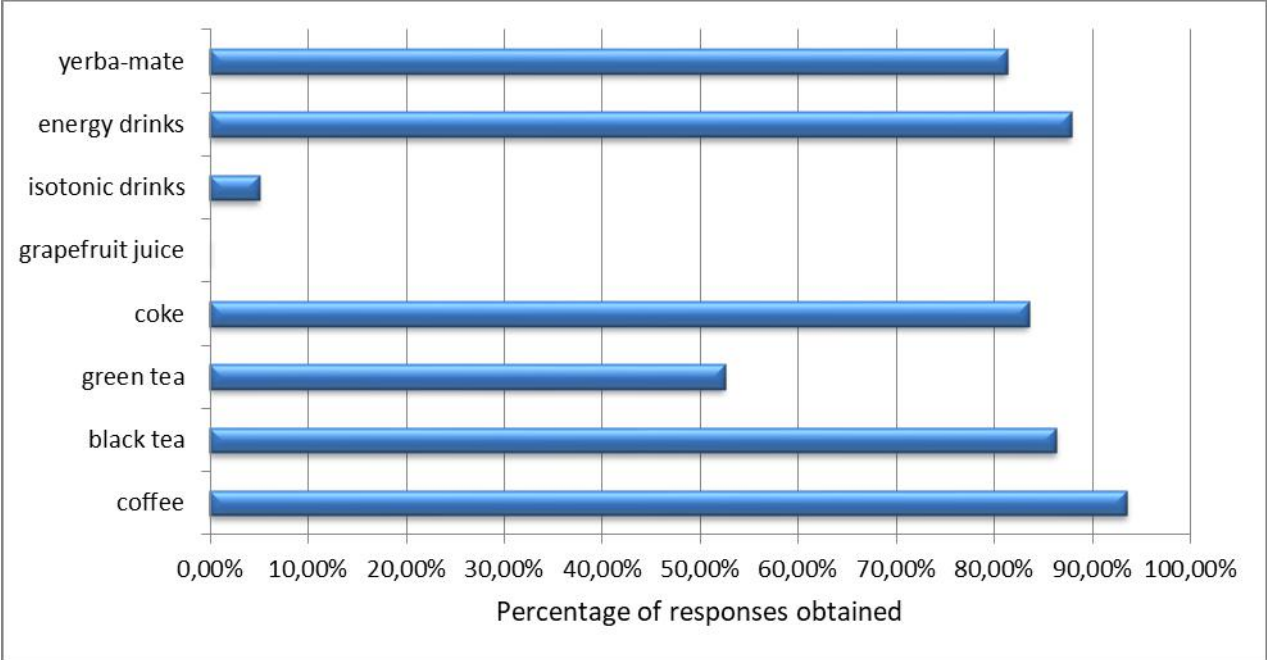


Figure 5. The percentage share of responses obtained about beverages that are a source of caffeine

As products to be avoided during the diet recommended in irritable bowel syndrome, the respondents most often correctly selected onions, leeks and cabbage (59.7%), cottage cheese, buttermilk and milk (48.5%) and sweeteners (sorbitol, mannitol, maltitol ; 47.8%) (Figure 6).

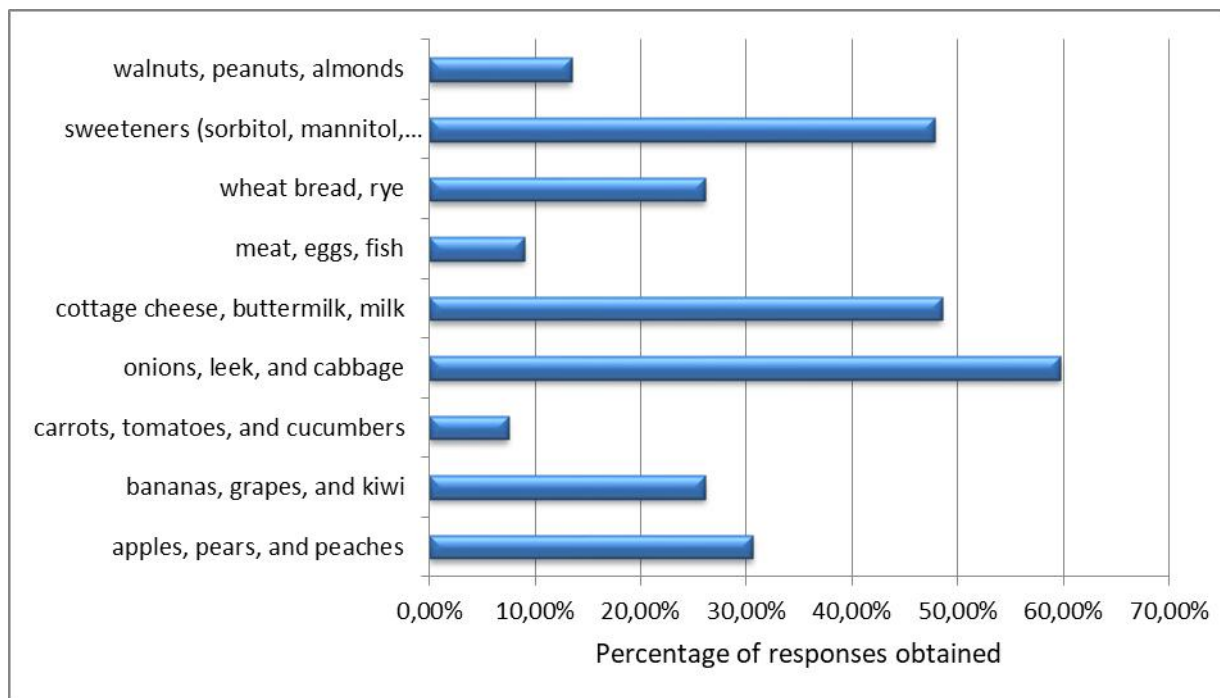


Figure 6. Percentage of responses obtained about foods to be avoided while following a diet recommended for irritable bowel syndrome

4. Discussion

Dietary knowledge is often a useful tool in the work of a doctor. Proper nutrition prevents the development of many diseases and supports their treatment. The benefits of using a healthy diet include[5]: improvement of lipid metabolism, prevention of cardiovascular diseases, protection against the effects of excessive oxidative stress, modification of the hormonal balance, improvement of the intestinal microbiota.

Most of the respondents correctly identified dark chocolate and almonds as good sources of magnesium in the diet. These products can be considered pro-health, however, among others due to their high fat content, they cannot fully cover the magnesium requirement. An alternative is for example buckwheat, which was recognized as a good source of magnesium by only 40.3% of students [6].

Omega-3 fatty acids fulfill a number of functions, including they are components of cell membrane phospholipids, where they play a structural and functional role. 72.7% of the respondents considered olive oil, which contains mainly monounsaturated fatty acids, to be a good source of the omega-3 fatty acids [1].

Stomach cancer is a cancer that is promoted by certain dietary behaviors, such as eating high-salt, canned foods, smoked products, and food nitrite. 49.6% of respondents indicated

the consumption of red meat as a risk factor for gastric cancer. Current scientific research does not confirm such a relationship [3].

In the light of the latest scientific research, regular consumption of coffee may have a number of health-promoting properties. 66.2% of the respondents rightly attributed coffee to certain anti-cancer properties, while 46.8% correctly assessed that coffee reduces the risk of developing type 2 diabetes [7]. Scientific reports on the effect of coffee on the excretion of magnesium from the body are inconclusive, but there are studies suggesting that regular consumption of this drink does not increase the excretion of magnesium in the urine. [8].

It is important to be aware of the caffeine content in food products. Excessive consumption of this substance, e.g. by a pregnant woman, may have serious health consequences for the mother and the fetus. Only 52.5% of the respondents considered green tea as a source of caffeine / a similar substance in the diet. This drink usually has less caffeine than coffee or black tea, but it can also be dangerous when drunk in greater amounts [9].

Sometimes a change in dietary habits is even necessary for the symptoms experienced by the patient to reduce their intensity (e.g. in irritable bowel syndrome). This disease affects 9-23% of the world's population, therefore dietary knowledge seems to be of great importance in this case [4].

5. Conclusions

Despite the fact that more than half of the surveyed students expressed an interest in the topic of healthy eating, only some of the respondents gave correct answers to a few questions. Perhaps it is worth enabling students to develop their dietary interests as part of optional classes, as the knowledge gained in this way may be useful in further professional practice.

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