Original Article

Study on the relationship between knowledge of nutrition rules, their application and health

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Abstract
     Healthy eating consists of consuming various, moderate foods, which are distributed over the course of the day in the form of three main meals and 1-2 snacks. In order to benefit from a healthy diet, small amounts of foods containing simple carbohydrates (refined sweets) should be consumed; people should use up to 5 grams of salt per day; should consume sufficient water; should reduce food fats, especially saturated ones; should consume enough quantities of fresh cereals, vegetables and fruits.
     This paper presents a study of 60 students from the Physical Education and Sport and Motric Performance Education Programs regarding the identification and comparison of the level of knowledge that students in the first and third years have about nutrition and how much they apply in practice the main nutrition rules.
     The research methods used were: the study of the specialized literature, the questionnaire survey, the table method, the statistical-mathematical method and the graphic method.
     After interpreting the data obtained from the centralization of the results, we found that, as far as nutritional knowledge is concerned, the average score obtained by the students in the first year is 4,5 and 7,5 by the students of the third year. More than half of the respondents (60% for the first year and 55% for the third year) fail to respect the hours for the main meals; 84% for year I and 79% for year II do not consume fresh vegetables and fruits daily; 23% for the first year and 28% for the second year consumes fast-food products; 26% of year I and 30% of year III do not consume an adequate amount of water.
Key Words: ballance, energy, nutrition, health.

Introduction

     According to the Explanatory Dictionary of the Romanian Language, nutrition represents the totality of the physiological processes through which the organisms acquire the necessary nutrition for the growth and development, the obtaining of energy for vital processes, tissue restoration, etc. ".
     According to Wikipedia's Free Encyclopedia, nutrition is the science that interprets the interactions between nutrients and other substances in food (eg phytonutrients, anthocyanins, tannins, etc.) in relation to the maintenance, development, reproduction, health and disease state of an organism. Includes food intake, absorption, digestion, biosynthesis, catabolism and excretion. "
     Niac G. (2004), states that "human nutrition must satisfy several requirements of the body: the energy requirement, the growth and renewal of tissues, and the provision of the necessary substances for the regulation of vital processes." Considering the progress of contemporary science and technology, the life of modern man has transformed, becoming easier. This benefic fact draws the disadvantage that people have become more sedentary, their energy consumption decreasing. On the other hand, important changes have also been made in terms of nutrition through the quality of the ingredients used, the manufacturing technology, the use of food additives, attractive packaging, semi-prepared products, etc. As a result of the above, the energy consumption of modern man has progressively decreased while food has become more abundant and richer in nutritional factors. The inconsistency between the energy needs of the body and the consumption of food over time has led to overeating.
     Issue approached:
What do we know about nutrition?
How much do we follow the nutrition rules?
     "Diet and nutrition are important factors in promoting and maintaining good health throughout human life. There is a close link between diet-nutrition and the evolution of chronic diseases ... It is predicted that chronic diseases will account for 3/4 of the deaths in 2020, with cardiovascular deaths (70-75%) being predominant. With regard to diabetes, which in 1995 affected 87 million people, in 2025 the number of people affected will reach 228 million, a 2.5 growth. (Banu C., 2009).

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"We Romanians eat too much of everything: too much sugar, too much fat and too much salt. We consume too many calories. And over and over, we eat too many times a day. This "abundance" helps set the foundation for coronary artery disease (heart nerve), stroke, hypertension, arthritis, adult onset diabetes, obesity, and some cancers. These diseases are responsible for three-quarters of all deaths. And their appearance, as we have already said, is related to lifestyle, more precisely how we feed ourselves "(Deihl H., Ludington A., 2002).

Among the main diseases which affect the population we come across nutrition disorders, obesity, diabetes, heart, liver diseases, etc. In all these diseases the nutrition factor has an increasingly important role. The speed with which all day-to-day activities are taking place determines less of a man's concern for food behavior (what they eat, how they eat and how much they eat), and greater care for material income and spending time. Thus, after an alert and exhausting work during the week, during leisure time at the end of the week instead of resting, the man loses time until late at night, consumes dishes and drinks more and more harmful to the body, smokes, rests less, etc., all of these damaging the health on long term.

"In order to ensure a proper nutrition, a balance needs to be struck between the nutritional needs of the body and the quantities of nutrients. The emergence of an imbalance is the result of inadequate nutrition, which may have repercussions for changes in growth, work capacity and health ... At present, the nutritional needs of the population have undergone changes as a result of changing living and working conditions energy expenditure dropped at the expense of increased nerve demand. As a result of the development of the food industry, modified food products have emerged from natural raw materials, the result of such industrial processing being in many cases the production of imbalances due to the concentration of nutrients and the removal of others "(Cioroiu S.G., 2009).

The purpose of the paper was to identify and compare the level of knowledge that students of the first and third years have about nutrition and how much they apply in practice the main nutrition rules.

Research methods: study of specialized literature, survey by questionnaire, table method, statistical-mathematical method and graphic method.

Results

Nutrition is an important branch of science through which knowledge about this and correct application of it is reflected in the health of the population. Starting from this idea, we made two questionnaires, one with what students should know about nutrition, and another with how to comply with the rules about nutrition and alimentation.

Questionnaire I. What should we know about nutrition:
1. What is nutrition?
2. What are the effects of nutrition on body health?
3. What foods are considered healthy for the body?
4. What foods are considered unhealthy for the body?
5. What food combinations are beneficial to the human body?
6. What food combinations are harmful to the human body?

Questionnaire II. Main Nutrition and Nutrition Rules:
1. Do you respect the main meals hours for serving?
2. Do you serve the meals in peace and chew food properly?
3. Do you combine foods correctly?
4. Do you consume an adequate amount of water?
5. Do you eat fresh fruit and vegetables daily?
6. Do you read the food labels you buy?
7. Do you consume fast-food?
8. Do you consume carbonated juices?

The questionnaires were distributed to 60 students - 30 students in the first year and 30 students in third year of the Physical and Sports Education and Sport and Motric Performance Education programs. In Questionnaire I, the answers were noted with points 1 to 10 for each question.

After analyzing the answers and centralizing the results, the scores are presented in Table 1.

Table 1

QUESTIONNAIRE I		
Question	**Year I Answer**	**Year III Answer**
1.What is nutrition?	3,5	7,5
2. What are the effects of nutrition on body health?	4,5	8
3. What foods are considered healthy for the body?	6	7
4. What foods are considered unhealthy for the body?	5,5	7
5. What food combinations are beneficial to the human body?	3	7,5
6. What food combinations are harmful to the human body?	4,5	8
Average answers:	**4,5**	**7,5**

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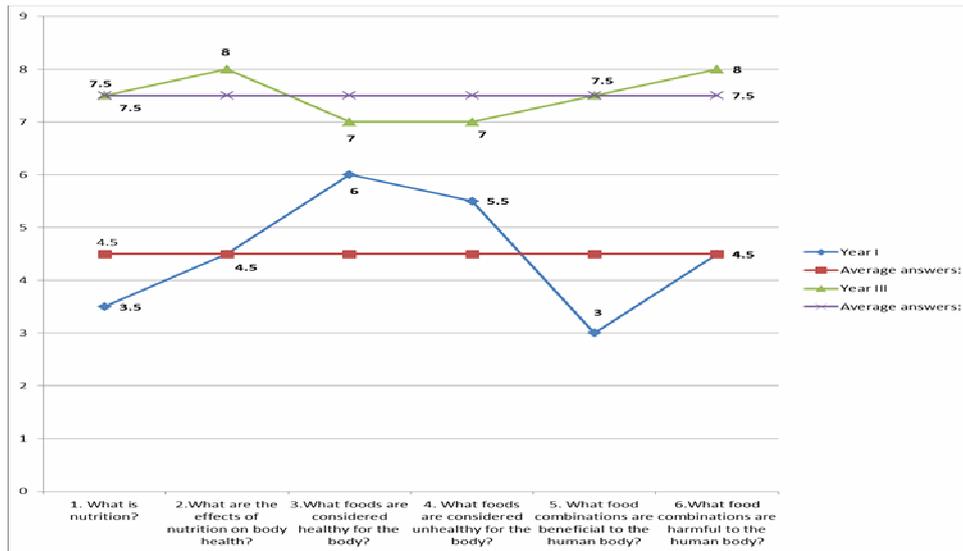

Fig.1- Graphic representation of the questionnaire I

As can be seen from Table 1 and Fig. 1, the average score obtained by students in the first year is 4.50, which means a low level of knowledge about nutrition and the benefits of proper nutrition to the health which make us suppose that in the second questionnaire regarding the main alimentation and nutrition rules we will have less desirable answers (negative answers).

In order to verify this hypothesis, we will take as a variation an answer - "Yes", an indefinite answer - "Sometimes" and a negation "No".

It is also evident from Table I and Fig. 1 that the average score obtained by third year students is 7.5, which means a relatively high level of knowledge about nutrition and the benefits of proper nutrition to the health.

The answers to questionnaire II are presented in the tables and figures below.

Table 2

QUESTIONNAIRE II	
Question	**Answers Year I**
1. Do you respect the hours for serving the main meals?	Yes – 25%, No – 60%,Sometimes – 15%
2. Do you serve the meals in peace and chew food properly?	Yes – 35%, No – 45%,Sometimes – 20%
3. Do you combine foods correctly?	Yes – 29%, No – 58%,Sometimes – 13%
4. Do you consume an adequate amount of water?	Yes – 58%, No – 26%,Sometimes – 16%
5. Do you eat fresh fruit and vegetables daily?	Yes – 11%, No – 84%,Sometimes – 5%
6. Do you read the food labels you buy?	Yes –7%, No – 76% , Sometimes – 17%
7. Do you consume fast-food?	Yes – 23%, No – 46%,Sometimes – 31%
8. Do you consume carbonated juices?	Yes – 25%, No – 51%,Sometimes – 24%
Average answers:	**Yes – 213/8= 26,62%; No – 446/8 = 55,75%; Sometimes – 141/8 = 17,62%**

Table 3

QUESTIONNAIRE II	
Question	**Answers Year III**
1. Do you respect the hours for serving the main meals?	Yes – 28%, No – 55%,Sometimes – 17%
2. Do you serve the meals in peace and chew food properly?	Yes – 33%, No – 45%,Sometimes – 22%
3. Do you combine foods correctly?	Yes – 27%, No – 54%,Sometimes – 19%
4. Do you consume an adequate amount of water?	Yes – 51%, No – 30%,Sometimes – 19%
5. Do you eat fresh fruit and vegetables daily?	Yes – 16%, No – 79%,Sometimes – 5%
6. Do you read the food labels you buy?	Yes –18%, No – 66%,Sometimes – 16%
7. Do you consume fast-food?	Yes – 28%, No – 44%,Sometimes – 28%
8. Do you consume carbonated juices?	Yes – 21%, No – 51%,Sometimes – 28%
Average answers:	**Yes – 222/8= 27,75%; No – 424/8 = 53%; Sometimes – 154/8 = 19,25%**

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Regarding the way the nutrition rules are respected, the most frequent answer in the first year students was "No" = 55.75%, which confirms the above hypothesis (Table 2 and Fig. 2) . The affirmative responses recorded an average percentage of 26.62%, while the undecided ("sometimes") - an average of 17.62%.
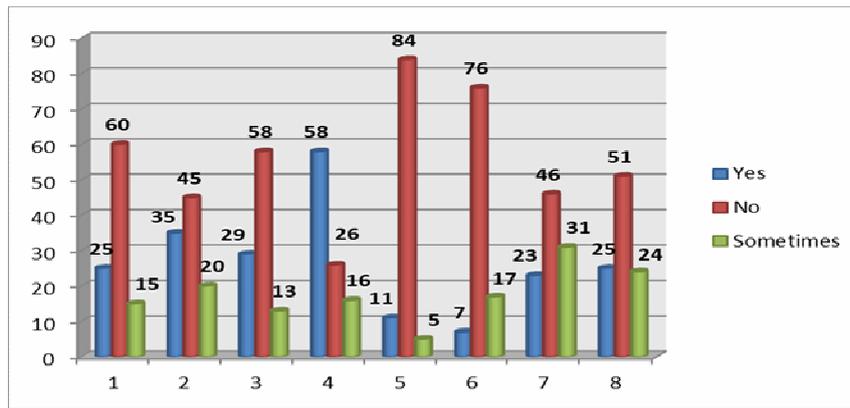

Fig.2 - Graphical representation of the answers to questionnaire II (Firts year students)

Also, in the third year, the most common answer was "No" = 53% (Table 3 and Fig. 3). The affirmative responses recorded an average percentage of 27.75% and the undecided ("sometimes") - an average of 19.25%.
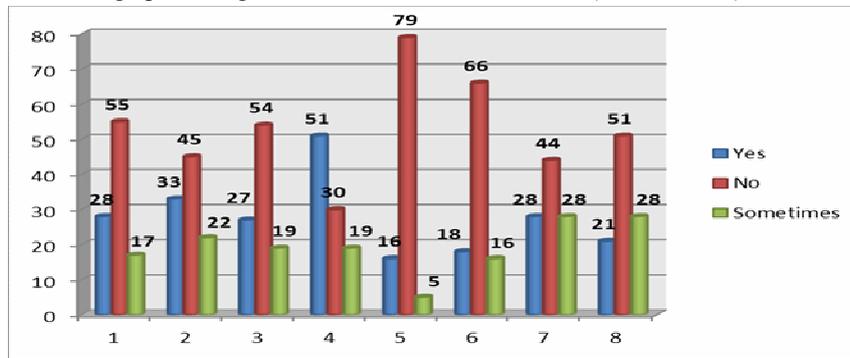

Fig.3 – Graphical representation of the answers to questionnaire II (Third year students)

Thus, a decrease in negative responses from 55.75% (in year I) to 53% (in year III) is noticed, which means that the students of the third year respect the nutrition rules to a slightly higher degree than those of first year.

Conclusions
- The level of knowledge people have about nutrition and their correct application in practice is directly reflected in health.
- The results obtained from the centralization of the answers to the questions of the first questionnaire by first year students (score 4.5) reveal a low level of knowledge about nutrition compared to the results obtained by third year students (average score 7.5), which means a relatively high level of knowledge about nutrition and the benefits of proper nutrition on health.
- The results obtained by third year students can also be explained by the knowledge they have gained in the first and second years of faculty at the different subjects they have gone through. A specific example would be the discipline "Education for Health and First Aid", which was studied in the 2nd year, 2nd semester, which has a substantial part of nutrition (proteins, lipids, carbohydrates, vitamins, minerals, food behavior, food safety etc .) and the relationship between diet and body weight and the influence of diet on health.
- Regarding the results of questionnaire II, about respecting and application of the knowledge that students have about nutrition, although the level of knowledge of the third year students is higher, they manage to apply them only to a slightly higher degree than the first-year students (the average negative response is 53% compared to 55.75% among students in the first year). This can be explained by the fact that many third-year students live in the host or in the student dormitory and fail to apply the knowledge they have about nutrition in practice because of their daily schedule, financial possibilities, etc. Contrary to the lower level of nutrition knowledge of first-year students, they have managed to apply enough nutrition rules in practice, and this is also explained by the fact that the study was conducted in October, and before that period they lived most with their parents who probably tried to contribute to a healthy diet of their children.

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- More than half of the respondents (60% from the first year and 55% from the third year) fail to respect the hours for serving main meals; 84% for year I and 79% for year II do not consume fresh vegetables and fruits daily; 23% students in the first year and 28% students in the third year consume fast-food products.

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