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Survey upon the Living Habits of Romanian but Hungarian Nationality Students Major in Biology and Physical Education

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SUMMARY. The present research paper had both a pedagogical type of work and also an investigative, assessing character, which was prepared with educative intention. The idea was the following: we have to know the reality concerning the lifestyle of our students, in order to decide the direction of further health education. The survey was performed by a questionnaire. The questionnaire applied for the research included 25 basic questions and further 33 questions with a segmented character. The results of the questionnaires prove that the hygienic knowledge of the students is insufficient, or they are not able to apply it properly. The majority of the interviewees feel the need to develop their hygienic knowledge. Most of the youths know the essence of health preservation, rules, but they do not apply them in practice, as they do not strive to prevention by their behavior and attitude.

Summarizing the ideas formulated in the present research paper, it is evident that the importance of health education has increased. The knowledge of the youths broaden during their high school and university studies, but these classes are insufficient. In the future it is essential to initiate modifications concerning the whole society on a higher level and united in order to change the health condition of society in the short run.

Keywords: food pyramid, healthy nutrition, narcotics

Introduction

"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"- this is the definition of health according to the WHO* (1948). Health is not an external factor, but the internal,

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essential accessory of our own physical and psychical being, which can be preserved only by a purposeful continuous activity. Our way of living and living habits is essential in preserving our health. It is in great part the responsibility of each person to maintain his/her own health. Families and different educational and pedagogical institutions are mainly in charge with the education for the proper lifestyle (Reilly and McDowell, 2003). At home and in the educational institutions those physical activities and competencies can be built in the system of knowledge and habits of the youngsters, which becoming elements of their lifestyle, will generate health, work capacity and vim.

Among the factors that imperil our health, the harmful habits are extremely significant. They appear decisively during young age, while such habits as smoking, consuming alcohol or drugs can evolve, endangering one's health on the long term. This is also the age when sexuality comes forward. Inappropriate forms of behavior imperil one's physical and psychical health, perturbing one's development, the evolution of the personality and the integration into society. The behavior that is destructive for health may not only bring the person into a life threatening situation, but also by its multitudinous character it is maleficent for the whole society (Ayliffe and Glanville, 2010, Szakály *et al.*, 2013).

The necessity of health education in our country is justified by the statistical analysis according to which the number of the Hungarian population in Romania decreased significantly by the data of the latest census. Among the main causes of the decrease of the population can be identified the significant emigration due to unemployment, which affects not only the Hungarian minority, but also the number of Romanian population, too. Another factor is the decrease of the number of live-births and last but not least there is the list of the diseases causing death, as related to some of these we are at the head of the statistics. The diseases connected with nutrition and lifestyle (such as cardiovascular diseases, evolution of tumors, diabetes and obesity) are the most frequent among the worldwide population (2005**). The diseases connected with nutrition and lifestyle are those ones caused in a substantial part by consuming too much, or too little energy, introducing some nutriments excessively such as too much salt or animal fat, or insufficiently as deficient amount of calcium. These diseases could be prevented through healthy nutrition and lifestyle.

The main goal of current research is the assessment and analysis of the habits of the students' community studying at the Biology and Physical education Faculties, from the point of view of hygiene. Considering the complex nature of this study, our goals can be formulated as follows: survey healthy nutrition (the frequency of consuming vegetables, fruit, meat, nutriments enriched with carbohydrates, and dairy products); judging the healthy lifestyle (doing exercise, sports, frequency of participating at competitions); racing the use of harmful substances (cigarettes, drugs and alcohol); determine the frequency of chronic (cardiovascular, metabolic) diseases occurring in the family.

Materials and methods

The hygienic survey was conducted with the contribution of 152 university students. The students were chosen from two faculties, biology and physical education. The surveying was performed by a questionnaire. The questionnaire applied for the research included 25 basic questions and further 33 questions with a segmented character. It includes the following questions: age, gender, data of birth, weight, height, BMI, nutritional behavior (vegetables, fruits, milk, sugar added foods, animal protein) physical activity, smoking, alcohol consumption, family history of metabolic and cardiovascular disease. Data was presented using descriptive statistics in the form of percentages. The results were processed by the means of the *Excel* program.

Results and discussion

The students were born within the 1992-1994 period. 94.74% of the students participating in the research were born in Romania and 5.26% in Hungary, but these latter ones accomplished their high school studies in Romania as their parents had moved back to their hometowns.

The parameter of healthy lifestyle that can be traced easiest, is the body mass index (BMI), which can be calculated by the square ratio of weight and height. Normal body weight is characterized by values between 18.5 and 24.99. BMI values under 18.5 are characteristic for emaciation and malnutrition, while values above 25 are characteristic for obesity, overweight.

Childhood obesity is a global epidemic and rising trends in overweight and obesity are apparent in both developed and developing countries (Flynn *et.al.* 2006). Several clinical data prove that obesity increases the probability of the emergence of not only metabolic and cardiovascular diseases, but also of different forms of cancer (Chang *et al.,* 2006, de Greeff *et.al.*, 2016, Halmi, 2008, Koponen *et al.,* 2013, Roberts *et al*., 2010, Wolin *et al*., 2010). The most frequent type of cancer among women is the endometrial carcinoma (Kis *et al*., 2015), which evolves in most cases in obese individuals with BMI over 30. According to WHO, obesity is rising by 30 million cases per year whereas the overall number of new cancer cases will increase by 300.000 cases per year. Both obesity and cancer contribute to increased worldwide mortality and healthcare costs. They are now both recognized as global healthcare concerns and have been the subject of worldwide calls to action (Ashrafian *et al.,* 2011)

The BMI between the interviewed students was higher than 25 for 10.52 % of them, belonging to the overweight category (Fig. 1). The highest BMI value was around 30. 82.89% of the students have normal BMI values, while 6.57% of the students can be rated in the undernourished group as their BMI was under 18.5 and the lowest BMI value was around 15. This group is also a category at risk as undernourishment increases mainly the risk of diseases of the vascular system.

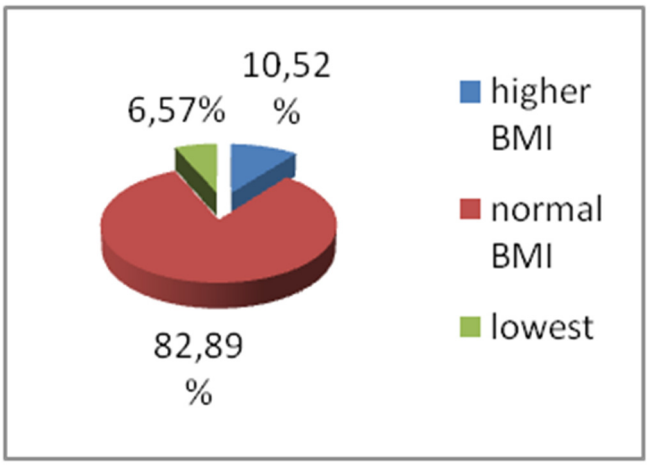

Figure 1. The body mass index (BMI) of the studied students

According to the results of this study, three-quarters of the students disposed to obesity are male though more than half of the interviewees are female.

As Fig. 2 shows, analyzing the habits of consuming vegetables of the interviewees, 51.97% of them consume vegetables daily, 19.07% three times a week, 17.76% twice a week, 5.92% four times a week, 2.63% rarely, less than once a week.

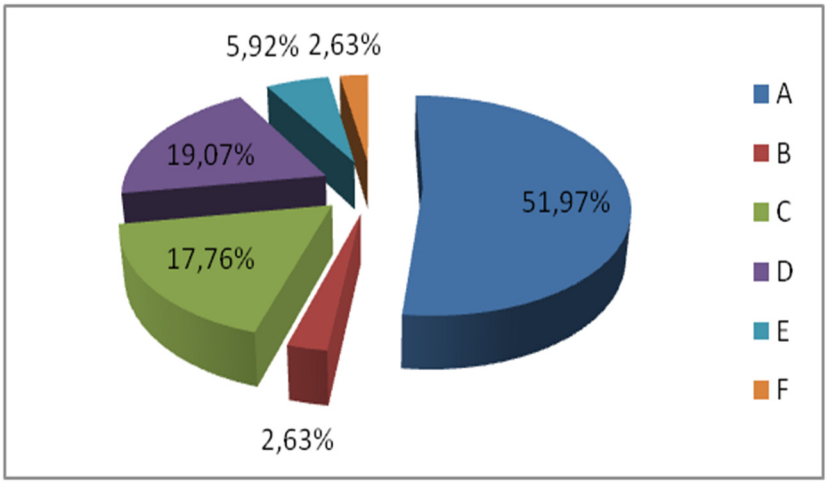

Figure 2. The proportion of vegetables consumers among the students; A-daily, B-ocasionaly, C-twice a week, D-three times a week, E-four times a week, F-less than once a week.

The vegetables are consumed raw, or the majority of the students consume them steamed, boiled. 48% of the interviewees consume vegetables on a weekly basis. More than half of the students consuming vegetables daily are women (53.16%). Analyzing the habits of fruit consuming, 61.84% of the interviewees consume fruit on a daily basis, 18.42% of them three times a week, 7.23% twice a week, 6.57% four times a week, and 5.92% rarely (Fig. 3). The proportion of the students consuming fruit daily is much higher than the vegetable consumers'. Analyzing the distribution by gender, women consume fruit in a much greater number (53.16%). Similarly to the habits of consuming vegetables, 38% of the interviewees consume fruit on a weekly basis.

If we examine the bibliographic sources of dietetics it is evident that vegetables and fruit constitute the base of the food pyramid (Horváth, 2003).

Vegetables provide an important intake of fibers, minerals, glucose and vitamins, while fruit provide especially an intake of glucose, vitamins and minerals (Vanczák *et al.*, 2004). The consumption of vegetables and fruit among the interviewees correspond to the food pyramid***.

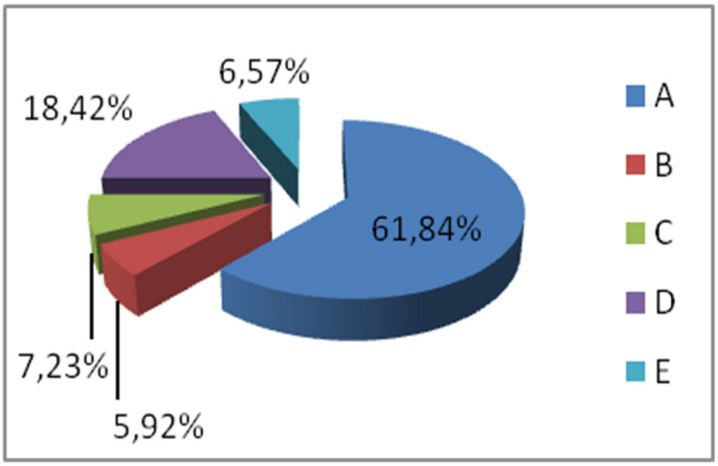

Figure 3. The fruit consumption on a weekly scaling, A-daily, B-rarely, C-twice a week, D- three time a week, E-four time a week

The proportion of people consuming sugar added food is high: 93.43%. Only 6.57% of the interviewees said that they do not consume sweets at all. The majority of the consumers of sweets also consume sweetened foods (Fig.4.) such as cakes, sweet soft drinks and sorts of chocolate on a daily basis. Merely 16.19% of the interviewees consume sweets rarely (less than once a week).

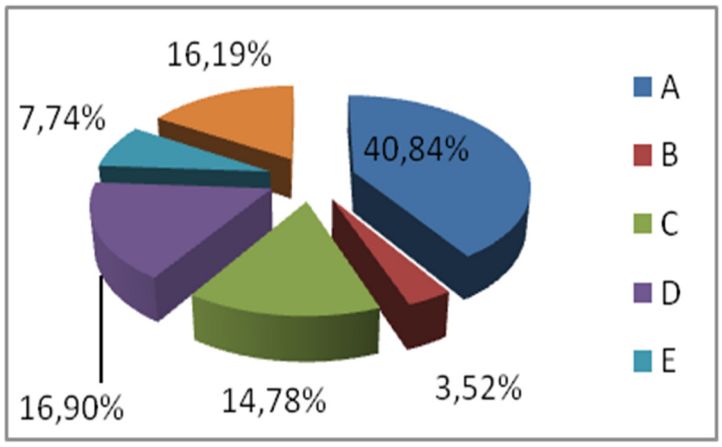

Figure 4. The frequency of sweet consumption on a weekly scaling;
A- daily, B- four times a week, C- three times a week,
D- twice a week, E- once a week, F -rarely

80% of the persons who do not consume sweets are male and 20% female. 94.5% of the sweets consumers are women and 5.5% are men. However, according to the BMI data men are more disposed to obesity. One possible explanation is the fact that the majority of the female students do sports on a daily basis, so the excess of energy ensuing from the sweets consuming is burnt this way.

The sweets consumption among the interviewees shows a high value. The perpetual sweets consumption on the long term puts a strain on the organism, which can cause different diseases. From this point of view 94.5% of the interviewees can be at risk.

44.73% of the interviewees consume meat on a daily basis, more than half of them weekly, and 2% do not consume meat at all.

More than half (55.88%) of the persons consuming animal protein on a daily basis are male. According to our results, women are leading in sweets consumption, men prefer animal proteins. Both of these are among the factors which increase the risk of obesity when they are consumed excessively. The different sorts of meat (pork, beef, venison) contain a lot of fat therefore increase the fat storage of the organism.

Despite the fact, that the energy value of fats is higher compared to carbohydrates, the organism degrades mostly carbohydrates and starts degrading the lipids accumulated in the adipose tissue only after the exhaustion of carbohydrates. The human body has always been used to storage, therefore those persons who want to achieve weight loss through an inappropriate diet, could gain weight despite low energy consumption.

As we could see, more than half of the interviewees are women; still the higher BMI is more frequent at men as they consume more animal protein than the interviewed women. If we represented the food pyramid of the interviewees, it would be widely different from the healthy food pyramid of a young adult organism. In a food pyramid that represents healthy nutrition the energy-rich foods are at the top of the pyramid, while by the own admission of the interviewees these foods are at the basis of their pyramids.

The answers to the inquiry related to the consumption of milk and dairy products, reveal that this type of food are more popular than the above mentioned ones. More than half of the interviewees consume milk and dairy products on a daily basis, while 2% do not consume them at all (Fig.5). On a distribution by gender there are no significant differences between the two sexes, since they both consume dairy products almost equally. Dairy products provide a significant intake of protein, minerals and liquids.

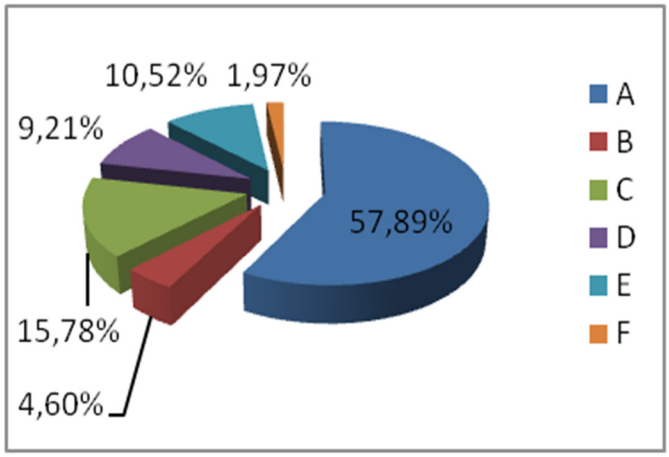

Figure 5. The consumers of milk and dairy products on a weekly scaling; A- daily, B- four times a week, C- three times a week, D- twice a week, E- once a week, F- does not consume milk or dairy products

Another requirement of healthy lifestyle is regular exercise, training. Physical inactivity affects metabolism and all major body systems, exerting powerful positive influences on the brain and spinal cord, consequently, on physical health, and motivation and ability to learn (Basch, 2011).

Physical inactivity has been identified as a risk factor of diabetes mellitus independently of its effects on body size, and dietary patterns. Physical activity of moderate to vigorous intensity and duration decreases the risk of conversion of impaired glucose tolerance into diabetes even in the absence of significant weight loss, and independently of other risk factors (Alberti *et.al*., 2007). Diabetes mellitus is a growing public health problem affecting people worldwide both in developing and developed countries, and poses a major socio-economic challenge. (Dahiru et.al., 2008).

In 2000, 171 million people were estimated to have diabetes around the world, and this figure is expected to rise to 366 million by 2030 (Wild et.al., 2004).The answers given to the questions related to doing exercise (fig.6), sports regularly reveal that 20% of the interviewees do not do any sports or exercise at all, while 80% do sports regularly. 33% of the regularly sporting students train does sports daily. Most of the students who do exercise on a daily basis train daily for several hours, but these students study mainly at sports departments. 22% of the interviewees do sports three or four times a week, 9% twice a week, 5% once a week, and 10% less than once a week.

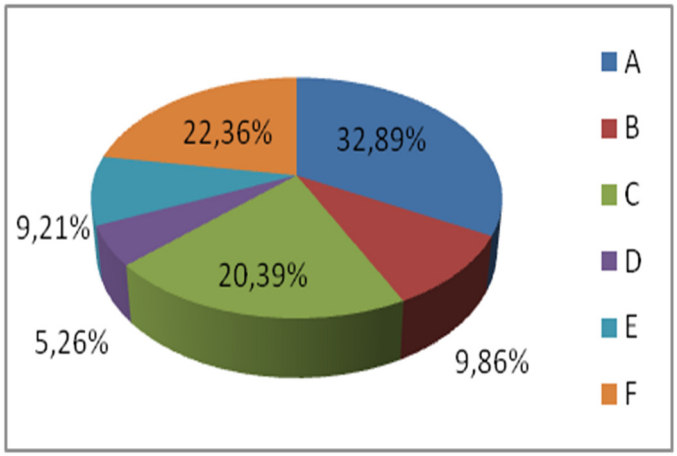

Figure 6. The frequency of doing sports, exercise on a weekly scaling; A- daily, B- rarely, C- not do sport, D- once a week, E- twice a week, F- three or four times a week

Half of the interviewees participate at sports competitions as well (51.14%). This higher proportion is due to the fact that three-quarters of the interviewees study at sports departments where daily trainings are obligatory, respectively participating at sports competitions is more popular than among the students studying at the Biology department.

Exercise raises the energy traffic of the human body and ensures a higher consumption of oxygen. Properly done exercise trains not only the muscles but also the vascular and respiratory system. Due to regular sporting the capacity of the lungs and heart increases, a greater amount of air enters the body that provides the oxygen necessary for the activity of the cells. Besides a good oxygen supply of the tissues it provides the evacuation of the decomposition products. Furthermore, regular exercise speeds up metabolism, prevents the storage of excessive nutriments, and hence prevents obesity, diabetes, hypertension, and the premature evolution of heart attack (Mahfouz *et al.,* 2015). Hence balanced sporting, training can be important tools of the health-preserving programs (Basch, 2011, Stamatakis *et al.*, 2009, Fair and Montgomery, 2009).

The consumption of health impairing substances (alcohol, cigarettes) is getting more and more popular among Romanian youths, too. 7% of the interviewees did not answer to the questions related to smoking, 67% do not smoke and 27% smoke. 32.25% of the smokers, smoke occasionally, while 67.75% of them smoke daily. The number of smokers is relatively low, but more than half of them smoke on a daily basis.

Smoking is the most dangerous among the health impairing risk factors (Wura *et al.*, 2016). According to the statistics of the WHO annual mortality due to smoking exceeds mortality due to drugs, alcohol, contagions and accidents altogether. In 1999 there were 1.25 billion smokers worldwide. In the developed countries 42% of men and approximately 24% of women are smokers, while in developing countries 48% of men and 12% of women smoke (Rydin, 2012). In developed countries smoking has decreased over the last years. This can be the result of the more and more successful health education, anti-smoking campaigns, restriction of the advertising of tobacco products, furthermore the increase of the smoke-free workplaces, means of transport and places of amusement.

According to the data of this research, two-third of the students does not smoke, but 17% did not answer to the question. It can be supposed that those who did not answer either do not know sufficiently the harmful effects of smoking, or they know it well and thus they do not want to admit it. Therefore it is essential to raise awareness among the interviewees related to the harmful effects of smoking.

While the proportion of smokers and users of narcotics is low, the consumption of alcohol is very popular among the interviewees. The alcohol consumption of the Hungarian population is high both within Hungary and beyond its borders. 3% of the interviewees do not answer, about 80% consume alcohol and only 17% do not consume alcohol at all. 41% of the alcohol consumers drink alcohol rarely but on a monthly basis, while 59% consume alcohol more often, on a weekly or even daily basis. Those who consume alcohol weekly drink alcoholic beverages, mainly beer or wine, usually twice or three times a week.

According to the results of this research those who consume alcohol regularly, happen to have an alcohol consumer family member. 11% of the interviewees did not answer to this question, whereas in the case of 20% there are alcoholic predecessors. 90% of those who have alcoholic predecessors consume alcohol regularly. According to the results of this research it can be concluded that the popularity of alcohol consumption within the family influences in a great deal the habits of young people concerning alcohol consumption. 14% of the interviewees have friends who consume alcohol on a regular basis. According to the hygienic survey, 43% of the students with alcohol-consumer friends also consume alcohol on a weekly basis. Based on the data of current survey next to the family, the frequency of alcohol consumption can be greatly influenced by the circle of friends.

Alcoholism is mainly considered the consequence of the "civilized" lifestyle, which is more frequent among persons with psychically traumatized personalities. Overwork, unsolved lifestyle, unsatisfied ambitions can all lead to such symptoms, behavior patterns (neurosis), for what the alcohol with its anxiolytic effect seems to be a solution. First it starts with a little daily amount of alcohol consumption which moderates the anxiety caused by discomfort in society. Nevertheless regular alcohol consumption causes addiction. Regarding their alcohol consumption habits, 80% of the interviewed students are at risk. Informative work is needed to raise their awareness of the harmful effects of regular alcohol consumption.

A person's health is greatly influenced by the "genetic health" inherited from the parents, therefore we asked about different metabolic and vascular diseases occurring within the family, too. The question specifically concerned the state of health of the close family members (parents, grandparents, siblings). More than half of the interviewees had someone within the family suffering from a chronic disease. Most students (52.63%) indicate diabetes and cardiovascular diseases.

Based on our survey 53% of the students are at risk, they can show tendency to the emergence of diseases occurring within the family.

Family history is an important risk factor for developing diabetes type 2. First-degree relatives of diabetic patients have long been known to have an increased risk of developing. Recent studies in genetic research have also identified the genetic variants linked with diabetes (Lyssenko *et al.,* 2008, Sladek *et al*., 2007).

Conclusions

Most of the students answer all the questions of the questionnaire.

The majority of the interviewees have BMI between 18.5 and 24.99, but there are also overweight and undernourished students as well.

The students consume vegetables and fruit regularly, the proportion of fruit consumption is higher at women. The excessive sweets consumption is characteristic for women; men consume less or do not consume sweets at all. The meat consumption is higher at men than at women. The proportion of consuming milk and dairy products is high, without any difference between men and women.

The culture of doing exercise of the students is undeveloped, they are unaware of its importance, only one-third of them do sports on a daily basis despite studying at biology or physical education specialization, where they encounter the notion of health daily.

A minor part of the students smoke, but they smoke on a daily basis. The proportion of alcohol consumers is high; they consume alcohol regularly, on a daily or weekly basis. The alcohol consumption is also popular in the families and circle of friends of those students who consume alcohol very often. More than half of the interviewees have precedents concerning diabetes and vascular diseases in their families.

On the basis of the results of the research the final conclusion is that regular sweetened food, alcohol consumption, and smoking can be considered as the greatest danger for the interviewees. Besides the rejection of the consumption of health-impairing substances, it is also essential to form the need to aspire to a healthy lifestyle. It is not enough to expound the health-impairing factors, but we have to strive to form a health preserving, sustaining and transmitting behavior.

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