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*Knowledge of rules of healthy lifestyle and their realization  
among students of junior and senior high schools*

The concept of health and its protection has been changed and expanded for many years. It results from the social and civilization progress. Health is understood as a good frame of mind and its protection is primarily concerned with disease prevention. The unit which is increasingly responsible for health prevention is the family. It involves leading healthy lifestyle and acquiring abilities allowing to counteract against real health dangers (3). Lifestyle, that is the total of health behaviours, influences the state of health in 50–60%, while genetic conditions account for 20% and environmental conditions (physical and social factors, state of health care) – for approximately 20% (8). The National Health Programme, which should be developed from the youngest age, aims at improving the way of nourishment as well as the quality of food (6).

The aim of the paper was to evaluate the knowledge of rules of healthy nourishment as well as their realization among students of junior and senior high schools. Body Mass Index (BMI) and the level of the acceptance of their own appearance were examined among the subjects.

#### MATERIAL AND METHODS

The research was carried out with the use of an anonymous survey, which was filled in by 200 students of junior high schools and 200 students of senior high schools in Lublin. The results underwent a statistical analysis.

#### RESULTS

The research included 400 people – 200 students of junior high schools and 200 students of senior high schools. The majority of the respondents were girls (66.7%). In senior high school, girls accounted for 80%, while boys for 20%. In junior high school the proportion was: 53.3% girls and 46.7% boys. 47.3% of the respondents live in the city, 52.7% – in the country. In junior high schools the dominant group, namely 64%, came from the country, while in senior high school – from the city (58.7%).

#### KNOWLEDGE OF THE RULES OF HEALTHY EATING

In order to establish the knowledge of the rules of healthy eating, the respondents were asked about the recommended ingredients of a daily diet. Most of the respondents (95%) know the positive

influence of wholesale bread on health, especially girls from senior high school. Nearly all of them (98.7%) maintain that milk and its products should be eaten every day. 66.7% of the respondents claim that the healthiest source of protein is the fish meat, especially sea fish. The majority of the group are senior high school students (81.3%), as compared to 52% of junior high school students. Fish should be consumed twice a week or more according to 45.4% of junior high school students and 70.8% of senior high school students. More than a half of the students (63.3%) know that it is better for health to consume vegetable fat, out of whom 81.7% are senior high school students, while 46.7% of junior high school students do not know what kind of fat is healthy. 36% of the students are not able to show any source of vegetable fat in a diet (58.7% of junior high school students and 13.3% of senior high school students). 16.7% were not able to mention any products containing animal fat. 94.7% claim that fruit and vegetables should be consumed every day. Nearly all of the subjects know that products containing much cholesterol should be avoided. However, they cannot mention any of them. Among junior high school students 56% mentioned only one product containing large amount of cholesterol, while 26.8% could not mention any. 44% of senior high school students mentioned 2 products rich in cholesterol and only 18.6% of them mentioned three or more (Fig. 1). Only 50% of the subjects could accurately define the role of dietary fibre in a diet (60% of senior high school students, 40% of junior high school students). 37.7% of the subjects could not mention any product rich in cellulose. This referred more often to junior (63%) than to senior high school (12%) students. The teenagers under the survey had also difficulties with mentioning products being the source of protein in a daily diet. The most frequently mentioned were: dairy products (36%), fish (25.3%), meat (12%), eggs (2.7%), pod vegetables (6.7%), grain products (4.7%). 22% of the respondents were not able to mention any source of protein in a diet, mainly junior high school students (46.6%) but also a considerable percentage of senior high school students (8%). 90.7% claim that meals should be eaten frequently but in small amounts. According to 94%, regular mealtimes are of great importance. The meals that should be eaten every day are: breakfast (according to 97.3%), dinner (66.7%) and supper (44%).

#### LIFESTYLE AND EATING HABITS OF THE RESPONDENTS

86.7% of the students eat breakfast every day, 92% – dinner and 74.7% – supper. 38.7% of the subjects take lunch to school and dessert is consumed by 31.3% of the students. Girls often avoid eating desserts and supper, while boys often decide not to eat breakfast. Only 66.7% of the subjects eat fruit daily, while 40% eat vegetables on a daily basis (Fig. 1, 2). Junior high school students include fruit and vegetables in their daily diet more seldom than senior high school students. 72.7% of the respondents eat fish once a week, mainly senior high school students (Fig. 3). Only 17.3% of the subjects eat fish more often than once a week. 10% of the subjects, predominantly junior high school students (16%), do not eat fish. 36% of the subjects, including the majority of girls, eat sweets on a daily basis. The teenagers under the survey consume mainly white bread (58%), with the vast majority of junior high school students (70.7%) as compared to 45.3% of senior high school students. The most popular drinks are: tea (88.7%) and juice (21.3%). 16.6% admitted drinking milk, 9.3% – mineral water, 7.3% (mainly junior high school students) drink sweet fizzy drinks. 6.7% of the whole population under the survey drink coffee on a regular basis, for the most part – the senior high school students. 78% , including 82% of boys and 76% of girls, try to keep fit. 22% of the respondents, predominantly senior high school students, do not take up any physical activity. What is alarming is the fact that only 41.3% of the subjects have not tried alcohol. 8.7% consume alcohol once a week, while 2% of the subjects admit drinking more than once a week. 16%, predominantly boys, claim that they smoke.

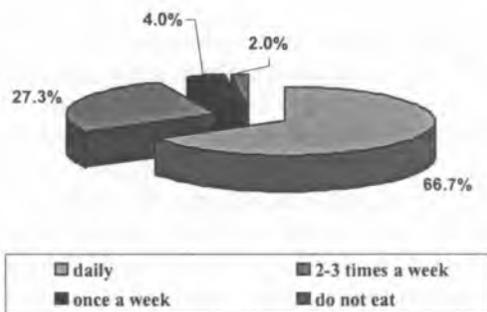


Fig. 1. Fruit consumption

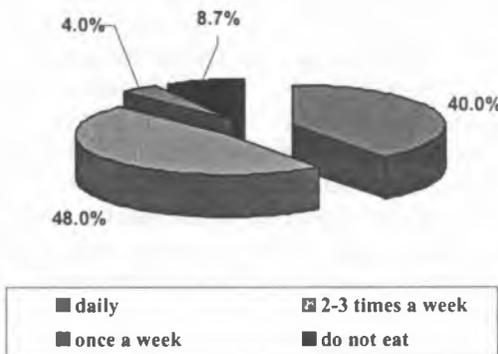


Fig. 2. Vegetable consumption

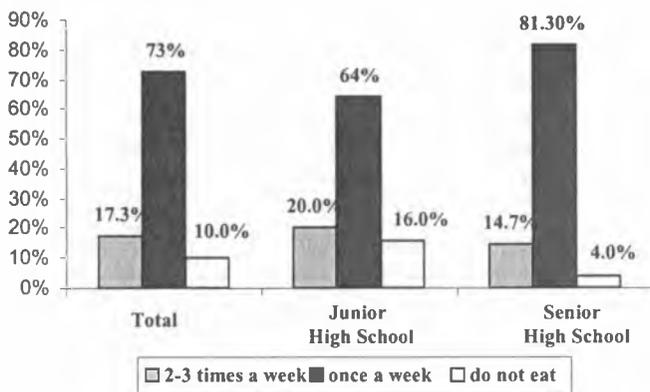


Fig. 3. Fish consumption

## STATE OF HEALTH OF SUBJECTS

Only 18.7% of the teenagers do not observe any health problems. The remaining ones complain about headaches, anxiety, depression, stomachache, and backache. Less frequent but equally alarming are: menstruation disorders, frequent infections, sleep disorders. In 4.7% of the subjects protracted especially allergic, diseases, have been recognized as well as high blood pressure (Fig. 4).

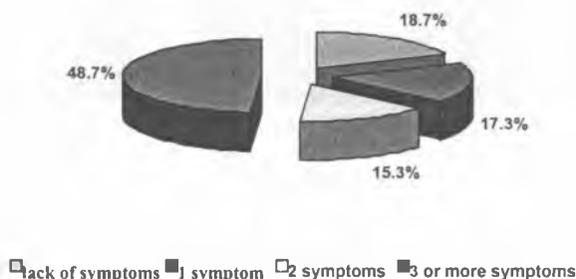


Fig. 4. Health problems of respondents

## BODY WEIGHT

BMI of the surveyed population is normal in 56% of the cases, predominantly among boys. 39.3% of the population are underweight, with nearly a half of girls. 4.7% of the subjects, mainly boys are overweight. In one case Body Mass Index of a girl is 13.9. According to 76%, the major cause of overweight and obesity is inappropriate nutrition, which is the opinion expressed mainly by senior high school students. Junior high school students mention metabolism disorders and genetic factor as the causes of obesity. 98.7% recognize the connection between obesity and diseases of blood circulation system and diabetes. Being underweight, according to 80.7% of the subjects, has also negative influence on health. The most frequent consequences of low body weight are anemia, mental disorders, nervous system diseases, hormonal disorders and immune system disorders.

## FACTORS THAT INFLUENCE LIFESTYLE

Mass media create the image of a modern person paying special attention to the appearance. Such examples are often followed by young people and stimulate them to try to change their body weight (46% of the subjects). This opinion is more frequently expressed by senior high school students (54.7%) than junior high school students (37.3%) and by girls rather (53%) than by boys (32%). 54.7% of the teenagers claim that the media shape their knowledge of the rules of healthy lifestyle (70.7% of senior high school students and 38.7% of junior high school students). The factors that influence healthy lifestyle include: family (43.3%), mass media (31.9%), health service (25.3%), friends (10%) (Fig. 5, 6).

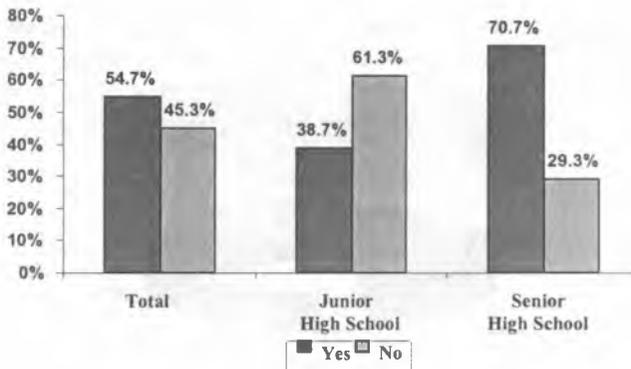


Fig. 5. Influence of media on healthy lifestyle

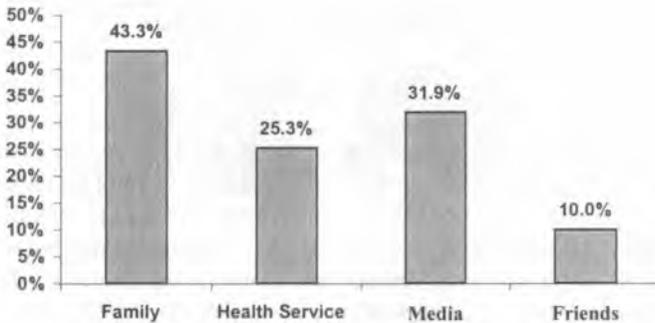


Fig. 6. What shapes healthy eating habits most

#### SELF-ACCEPTANCE

The majority of the subjects evaluate their appearance as good (48%) or average (27.3%). Full self-acceptance is observed in 11.3% of the population, mainly junior high school students and male. 62.7% of the students wish to change their appearance, predominantly girls. As for body weight, 58% of the respondents consider it normal (64% of boys and 55% of girls). 32% claim they are overweight (40% of girls and 20% of boys). Only 10% of the students claim that they are underweight (20% of boys and 5% of girls). 34% of the girls have applied slimming diets several times, some of them even for one year.

#### DISCUSSION

Nearly all the subjects, regardless of the kind of school, emphasized health advantages of daily consumption of wholemeal bread, milk and its products, vegetables and fruit. The importance of cellulose in a diet is recognized by a low percentage of teenagers, mainly junior high school students. It proved difficult for them to mention products containing cellulose. On the basis of the national research low consumption of vegetables, fruit and pod vegetables was recorded. While the recommended

norm of cellulose consumption is 40 g per day, in Poland the average 33 g per day is consumed. The teenagers, especially junior high school students, had problems with mentioning products rich in cholesterol. Too high consumption of fat is also recorded in the Polish society. 38% of the energy delivered to the organism comes from fats, while the recommended proportion is 15–30%. Daily cholesterol consumption should level at less than 300 mg, while in Poland it reaches 360 mg (2, 4). Health benefits of eating fish at least twice a week are known to a small percentage of the subjects, predominantly junior high school students.

The realization of the rules of healthy nutrition is much more difficult than the knowledge of them. It is particularly apparent among junior high school students. The consumption of wholemeal bread, vegetables, fruit and fish is definitely insufficient. The alarming fact is the frequent use of alcohol and high percentage of smokers. In the study carried out by Niziółek and Juśko, 12% of the teenagers aged 16–18 smoked on a daily basis, and 43.7% drank alcohol 4 times a year or more often (7, 8). The results concerning the consumption of fruit, vegetables and wholemeal bread prove these negative tendencies. It turned out that the lifestyle of the respondents is mostly influenced by the family and the media. The media create the image of a perfect figure which is an example to follow for teenagers. In the population under the survey BMI rate was mostly at normal levels or below, but it was not satisfactory for many subjects, especially senior high school female students, who often applied slimming diets being dissatisfied with their appearance. The majority of the respondents observed the presence of health problems several times a week. They included headaches, backaches and anxiety. These symptoms may indicate poor resistance to stress. This state can be influenced by eating disorders and the lack of self-acceptance because of the appearance which is far from being perfect. Inability to cope with stress is a crucial factor of the development of many diseases, especially of the blood circulation system. Health education should turn to the issue of coping with stress by means of proper eating habits and self-acceptance. The improvement of eating habits of the population is the primary goal of the National Health Programme introduced in 1996. Education programmes do not refer to the issue of proper eating habits and the lack of sufficient knowledge was even recorded among physicians and nurses.

In the 1999 study teenagers complained about high exposure to stress. Fruit and vegetable consumption is also lower in younger age groups (1).

## CONCLUSIONS

1. The knowledge of the rules of proper nutrition among the population under the survey is insufficient. The lack of knowledge about the recommended food components, their sources and the frequency of their consumption was evident especially in junior high school students.

2. The majority of the subjects are aware of the negative health effects of overweight and underweight. BMI at normal levels was recorded among 56% of the subjects, predominantly boys. The state of being underweight was far more frequent among girls and the vast majority of them (72%) were dissatisfied with their appearance and applied slimming diets. Boys more frequently wish to have larger body weight.

3. The realization of the rules of healthy eating is also insufficient, mainly in junior high school students.

4. The majority of the subjects mention frequent health problems (81.3%), which include headaches, anxiety, depression, stomachache, backaches, and dizziness. It may be the evidence of high stress level and low resistance to stress.

5. According to 46% of the respondents, it is the media that create the image of a perfect figure and influence the knowledge of healthy lifestyle. The direct factors that influence the choice of healthy lifestyle include: family (43.3%), mass media (31.9%), health service (25.3%) and friends (10%).

6. Given the insufficient level of knowledge of the teenagers and difficulties with applying the rules of healthy eating, it would be advisable to consider the introduction of changes in the education programme, with the emphasis on the issue of the following of the rules in daily life.

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#### SUMMARY

The aim of the paper was to evaluate the knowledge of rules of healthy nourishment as well as the recommended components of a daily diet among students of junior and senior high schools. The lifestyle of the teenagers was analyzed in two groups – junior high school students and senior high school students. On the basis of the BMI the state of nutrition of the population was evaluated. The subjects were questioned about the most frequent health problems, and the connection between body weight and the development of diseases in the future. The research was carried out by means of an anonymous survey among 200 students of junior high schools and 200 students of senior high schools. The data underwent statistical analysis. The knowledge of healthy eating habits proved insufficient and their realization poor, especially among junior high school students. The factors that influence the lifestyle of the teenagers included the family and the media. In girls the lack of acceptance of their own appearance was recorded, which resulted in the desire to lower body weight and to apply slimming diets.

### Znajomość zasad zdrowego stylu życia i ich realizacja wśród młodzieży gimnazjum i liceum

Celem pracy było zbadanie poziomu wiedzy uczniów gimnazjum i liceum na temat zasad zdrowego żywienia, zalecanych składników codziennej diety. Zanalizowano prowadzony styl życia z podziałem na populację gimnazjum i liceum. Na podstawie BMI oceniono stan odżywienia badanej populacji. Zapytano o najczęstsze dolegliwości oraz związek wagi ciała z rozwojem chorób w przyszłości. Badanie zostało przeprowadzone za pomocą anonimowej ankiety wśród 200 uczniów gimnazjum i 200 liceum. Dane opracowano statystycznie. Znajomość zasad zdrowego żywienia okazała się niedostateczna, szczególnie wśród uczniów gimnazjum, a ich realizacja słaba. Wśród czynników wpływających na prowadzony styl życia badani najczęściej wymieniali rodzinę i media. Wśród dziewcząt znacznie częściej obserwowano brak akceptacji własnego wyglądu, chęć zmniejszenia wagi ciała, stosowanie różnych diet odchudzających.