

Chair and Department of Hygiene, Skubiszewski Medical University of Lublin

BARBARA NIERADKO-IWANICKA, ANDRZEJ BORZĘCKI

### *Nutritional assessment and eating habits analysis in young adults*

Nutritional assessment is a part of health status evaluation. Nutrition plays a major role in the way an individual looks, feels, and behaves. Three major goals in the assessment of nutritional status include: 1) identification of malnutrition, 2) identification of patterns of overconsumption, and their link with the development of civilisation diseases, like obesity, diabetes mellitus, hypertension, cardiovascular disease, and cancer, 3) identification of nutritional parameters for optimal health and fitness. Nutritional assessment of an individual consists of: 1) anthropometric measurement (height, weight, body mass index – BMI, skinfold thickness, and circumferences), 2) biochemical measurement (total lymphocyte count, serum albumin, total iron binding capacity, creatinine height index, nitrogen balance, haemoglobin and hematocrit, and serum glucose), 3) clinical examination, 4) dietary analysis (4).

Good eating habits mean healthful eating and, together with an adequate physical activity, give chance for a long, healthy life. It is a matter of great importance to provide each human, from the moment of conception until death, the right amount of nutrients that yield energy to carry out vital functions, for physical activity, and for growth. There are the Dietary Guidelines for Americans known in most of the world that sum up the basics about eating and being active for health (3). There is also a well known Health Habits and History Questionnaire (HHHQ) invented by American National Cancer Institute Researchers widely used in developed countries. It includes standardized questions regarding personal data (age, marital status, education), habits (smoking, doing sports, taking vitamin supplements), medical information (past diseases and treatment), occupational information (occupational exposure, economic status), family history, and eating habits (1, 2). The aim of the study was to assess nutritional status and eating habits in young adults.

#### MATERIAL AND METHODS

The study was done with the use of a questionnaire consisting of three questions regarding personal information (age, gender, occupation), three questions about measurements (height, weight, and BMI), three open-ended questions about dieting, food preparation, medical history and used medication, and a table, where the examined persons gave detailed information about their eating plans from selected days. It was anonymous and voluntary. Sixty young adults aged 20 to 25 years (43 women and 17 men) were interviewed. It was January 2004.

#### RESULTS

The BMIs of all the examined individuals were within the “healthy” range of 20–25 kg/m<sup>2</sup> (Fig. 1). The caloric values of the analysed eating plans were adequate to the advised values in most of cases (Fig. 2). Being on diets declared four women (one of BMI 18.6 kg/m<sup>2</sup>, one of normal BMI, and two of BMI 25 kg/m<sup>2</sup>). None of the interviewed people suffered from food allergies, food intolerances, nor

from gastrointestinal or metabolic diseases forcing them to avoid some foods. All of them were students. One male only went in for sports (body building) regularly. The students used to eat at lunch time at the university cafeteria and prepared other meals themselves. Meal timing varied from having three balanced meals during the daytime to having snacks at daytime and big meals during long hours spent studying at night.

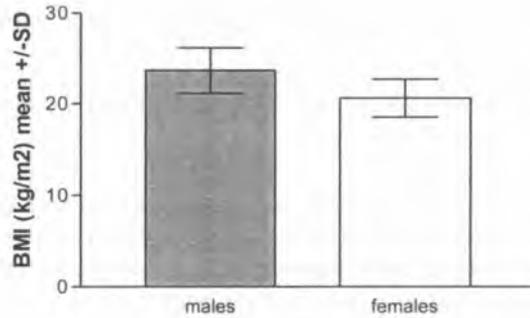


Fig.1. BMIs in the examined group of young adults

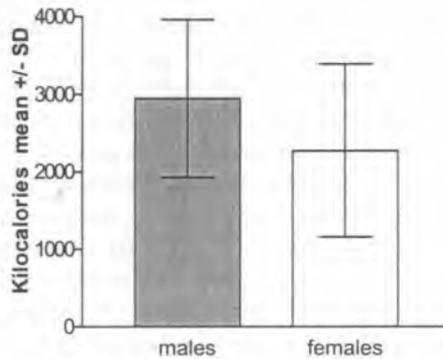


Fig. 2. Caloric value of daily eating plans by the examined young adults

## DISCUSSION

Both the Dietary Guidelines for Americans and the Recommended Dietary Allowances set up in the United States together with standards defined in other countries, find the group of the respondents to our questionnaire as a group that needs 2000 to 2400 kilocalories per day, or more than 2500 kilocalories in case of physically working men (3, 6). The mean values of dietary plans of the interviewed students were: 2272 kilocalories per day in females and 2943 kilocalories/day in males. The composition of the eating plans written by the students was based on the Eating Guide Pyramid published in developed countries and followed the main indications for the right use of food from six food groups: I – fats, oils, sweets – used sparingly, II – milk products– 2–3 servings daily, III – meat, poultry, fish, beans, eggs, nuts group– 2–3 servings daily, IV – vegetable group– 3–5 servings daily, V – fruit group– 2–4 servings daily, VI – bread, cereal, rice and pasta group– 6–11 servings daily (3, 6).

The optimal BMI in the interviewed group was 20–25 kg/m<sup>2</sup> (3, 6). All the respondents had their BMIs within the “healthy” range. None of them suffered from severe diseases nor had eating disorders resulting in malnutrition. It is an important observation, as underweight and loss of weight are important

signs in many disorders: psychological ones and in gut and liver disorders (5). None of the females had anorexia nervosa, secondary amenorrhea, nor anaemia. None of the males overused alcoholic drinks nor had gastrointestinal problems. Good health of the young people is a matter of great importance considering that majority of them are to start families and conceive an offspring sooner or later.

### CONCLUSIONS

1. The majority of the examined young adults keep their BMIs and the caloric values of their meals within the "healthy" range.
2. The young people do not do enough sports and often have high-calorie meals at night-time, which puts them at risk for civilisation diseases in spite of right BMIs.

### REFERENCES

1. Block G. et al.: Revision of dietary analysis software for the Health Habits and History Questionnaire. *Am. J. Epidemiol.*, 139, 1190, 1994.
2. Gernand W. et al.: The Polish modification of Health Habits and History Questionnaire as a verified tool for studying diet and risk factors for popular diseases. *Annales UMCS, Sectio DDD XV*, 119, 2002.
3. Larson Duyff R.: *Complete Food and Nutrition Guide*. 2<sup>nd</sup> Edition. Ed. John Wiley & Sons, Inc., Hoboken, New Jersey 2002.
4. Malasanos L. et al.: *Health assessment*. 4<sup>th</sup> edition. Ed. The C.V. Mosby Company, USA, 1990.
5. Rees P. J., Trounce J. R.: *A New Short Textbook of Medicine*. Ed. Edward Arnold. A division of Hodder & Stoughton, London 1988.
6. Rodwell Williams S.: *Essentials of Nutrition and Diet Therapy*. 6<sup>th</sup> ed. Mosby Year Book, Inc., USA, 1994.

### SUMMARY

Good eating habit is an essential part of a healthy lifestyle. It helps prevent civilisation diseases. The BMI and eating plan analysis are useful in individual's nutritional assessment. The aim of the study was to assess nutritional status and eating habits in young adults. An average BMI was 23.63 kg/m<sup>2</sup> in the interviewed men, and 20.6 kg/m<sup>2</sup> in women. Caloric value of the daily eating plans was average: in men 2943 kcal, in women 2272 kcal. Four people were on diets, but none of BMI over 25 kg/m<sup>2</sup>. There were no people suffering from food allergies nor gastrointestinal diseases. Only one male did sports (weight-lifting) regularly. The majority of the students ate at lunchtime at the university cafeteria or prepared meals themselves. The eating plans varied very much: the majority was based on the Eating Guide Pyramid and consisted of three balanced meals during the day-time; there were also single cases where students stuck to eating high-calorie meals at night-time mostly.

#### Ocena stanu odżywienia oraz nawyków żywieniowych w grupie młodych dorosłych

Prawidłowe nawyki żywieniowe są istotnym elementem zdrowego stylu życia. Pomagają one zapobiegać rozwojowi chorób cywilizacyjnych. Kontrola wskaźnika masy ciała (BMI) oraz analiza jadłospisów są prostymi metodami oceny stanu odżywienia jednostki. Celem pracy była analiza stanu odżywienia oraz nawyków żywieniowych grupy młodych dorosłych. Średni BMI wyniósł 23,63 kg/m<sup>2</sup> w grupie badanych mężczyzn i 20,6 kg/m<sup>2</sup> w grupie kobiet. Wartość kaloryczna jednodniowych

jadłospisów badanych wyniosła średnio: 2943 kcal w grupie mężczyzn, zaś w grupie kobiet 2272 kcal. Cztery osoby spośród ankietowanych stosowały dietę odchudzającą, żadna z nich nie miała BMI powyżej 25 kg/m<sup>2</sup>. Nikt w badanej grupie nie cierpiał z powodu alergii czy nietolerancji pokarmów ani chorób przewodu pokarmowego. Tylko jeden mężczyzna z badanej grupy regularnie uprawiał sport. Większość ankietowanych spożywała obiady w stołówce, zaś pozostałe posiłki przygotowywała samodzielnie. Analizowane jadłospisy były bardzo zróżnicowane: na ogół skonstruowane były zgodnie z zaleceniami piramidy pokarmowej dla dorosłych i składały się z trzech urozmaiconych posiłków w ciągu dnia. Były także nieliczne jadłospisy składające się z przekąsek w ciągu dnia i wysokokalorycznych posiłków w porze nocnej. Wnioski: 1. Większość ankietowanych młodych dorosłych utrzymuje swoje BMI oraz wartości kaloryczne dobowych jadłospisów w zakresie normy. 2. Młodzi ludzie w większości nie wykazują dostatecznej aktywności fizycznej, zaś niektórzy chętnie spożywają wysokokaloryczne posiłki w porze nocnej, co stwarza ryzyko rozwoju chorób cywilizacyjnych.