ESTIMATION OF NUTRITIVE STATE OF RECRUITS FROM CENTRAL POLAND IN 1996–2003

Anna KŁOS, Jerzy BERTRANDT
Military Institute of Hygiene and Epidemiology, Warsaw, Poland

One of the fundamental environmental factors influencing on human development and keeping good health state is proper nutrition. Without proper nutrition men cannot make use of his genetically determined possibilities of optimal physical and mental development (6).

Researches on interdependence between nutrition manner and nutrition state show possibility of negative influence of irregular meals consumption on human organism (7). Many economic and non-economic factors influence on nutrition manner. Dietary habits are shaped by social environment (4).

Different feeding situation of the population causes large variety in nutrition state, from protein and energy-protein deficiency through intermediate forms up to obesity and its consequence. Obesity is commonly recognized as one of the fundamental factors of coronary heart disease and cardiac infraction threat (3).

To estimate nutrition state of young men coming from different social environments and differently educated and beginning military service short evaluation was done based on anthropometric measurements. Many years' observations of relations between anthropometric measurements and nutrition manner revealed that such parameters as body tallness, body mass or fat content in organism were very good nutritive state indices (5).

Aim of work

The aim of work was anthropometric assessment of nutritive state of young men beginning military service in years 1996, 1997, 2002 and 2003.

Material and methods

Total of 998 young men, aged 19-21, were examined. They represented different social environments and different education level. Estimation of nutrition state was done based on the following measurements: body tallness, body weight, thickness of four selected skin folds – on biceps, on triceps under scapula and over iliac. Body Mass Index (BMI) value and percentage fat content was the base for overweight and obesity occurrence indication (2).

Results and discussion

Examined group consisted of in 50,9% of men coming from cities and small towns while 49,1% came from the country (Fig. 1).

Percentage of recruits technically educated significantly decreased throughout the years from 77,4% in 1996 to 47,8% in 2003. At the same time percentage of recruits secondary educated increased from 17,1% in 1996 to 51,3% in 2003. Percentage of recruits elementary educated was different in particular examination years (Fig. 2).

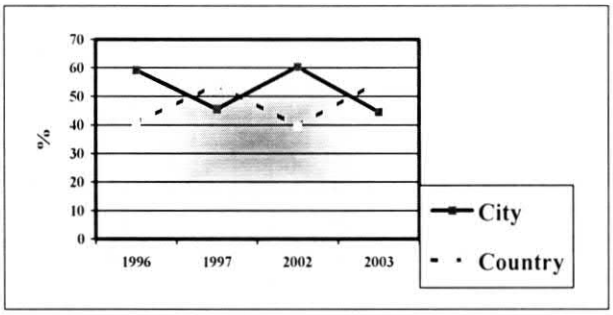

Fig. 1: Percentage of recruits coming from big cities, small towns and the country in examination years

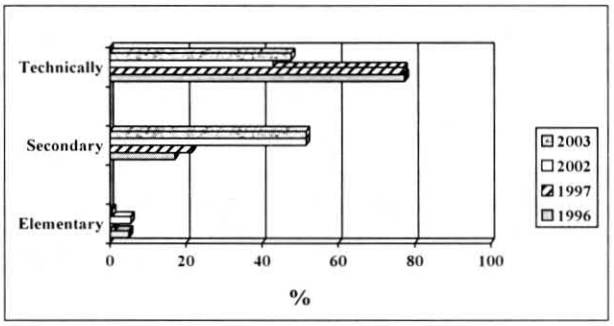

Fig. 2: Distribution of examined depending on education (in %)

Systematic increase of mean body mass among examined coming from the cities and small towns by 6.1 kg and from the country by 6.5 kg was observed during performed examination. Mean body tallness of the men amounted of 176.9±6.1 cm (city and small town) and 176.1±5.2 cm (country).

Based on BMI all examined were classified into following groups: low relative body mass (up to 21.4 kh/m^2), standard body mass (21.5–24.4 kg/m^2) and overweight (> 24.5 kg/m^2). Throughout the years considerable percentage decrease of people with low relative body mass was found both among men coming from the cities and small towns (31.1–13.4%) and from the country (24.3–11.8%). Simultaneously increase of percentage of examined indicating overweight from 5.1% to 16.9% (city and small town) and from 3.9% to 15.1% (country) was found (Fig. 3, 4).

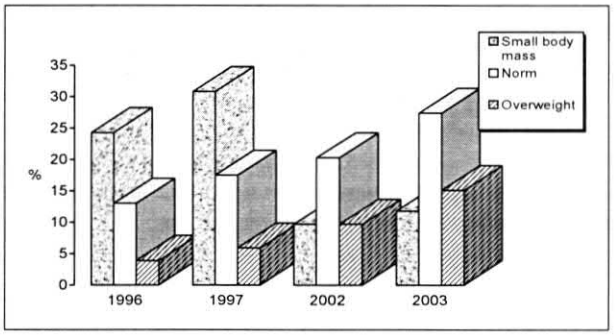

Fig. 3: Overweight occurrence among recruits coming from big cities and small towns

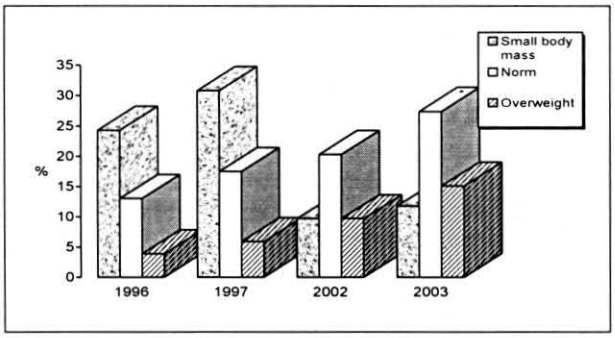

Fig. 4: Percentage of recruits coming from the country indicating small relative body mass standard body mass and overweight

In the group of men coming from cities and small towns low relative body mass indicated 26.3% of them in 2003 and 43.0% in 2002. In the same group percentage of obese men decreased from 8.5% in 1996 to 3.2% in 2003. Among recruits coming from the country the biggest percentage of men with low relative body mass were 40.2% in 1997 and the lowest of 26.0% in 1996. Percentage of obese men slightly decreased from 4.9% in 1997 and 2.4% in 2002 (Fig. 5, 6).

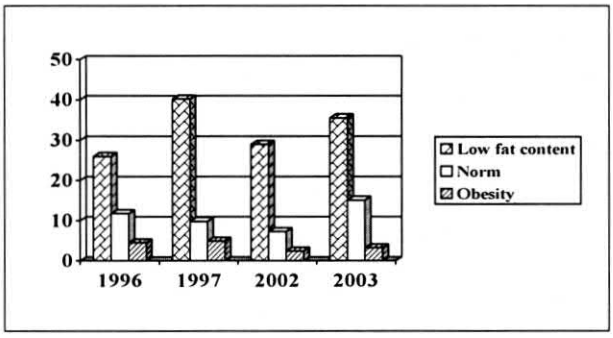

Fig. 5: Obesity occurrence among recruits coming from big cities and small towns in %

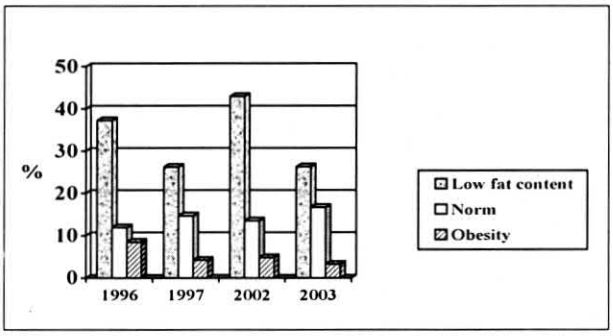

Fig. 6: Percentage of recruits indicating low fat content, standard fat content and obesity coming from the country

In the group of men technically educated decrease of percentage of men indicating overweight from 13.6% (1996) to 9.2% (2003) was found. Percentage of men with low relative body mass decreased from 20.3% (1996) to 10.8% (2003). Similar event was found among elementary educated men. Men indicating overweight was 1.7% in 1996 and only 0.5% w 2003. Different event was observed among secondary educated men. During the examination period percentage of men indicating overweight increased from 1.7% in 1996 to 19.9% in 2003. At the same time increase of percentage of men with low relative body mass was states as well. Increase was as follows: from 3.4% (1996) to 14.5% (2003) (Fig. 7).

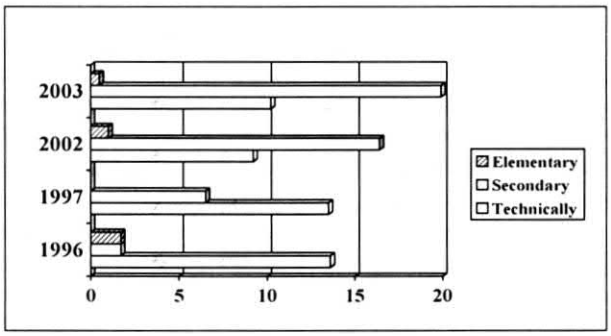

Fig. 7: Overweight occurrence among examined men considering education in %

Technically educated obese recruits were 9.8% in 1996 and only 2.4% in 2002 Simultaneously decrease of percentage of examined with low fat content (45.9%–33.3%) was observed. Percentage of obese elementary educated recruits decreased from 1.7% to 0.5%. Number of men with low fat content was different in particular years of examination. Throughout the years percentage of obese secondary educated recruits increased from 1.7% (1996) to 4.3% (2002), and percentage of men with low fat content increased as well (9.4% – 1997; 32,9% – 2002) (Fig. 8).

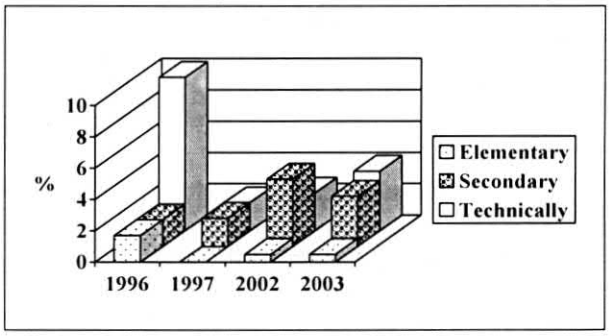

Fig. 8: Percentage obesity occurrence depending on education level of examined

Researches performed by Radulski and co. (6), in the second half of the eighties revealed that among 209 young men beginning military service 48.2% came from cities and small towns and 51.8%

from the country. Most of them, 86.3% was elementary or technically educated and only 13.7% was secondary educated. Recruits indicating overweight made 25.8%, and obese 17.7% of all examined. Among 2390 young men beginning military service in the Training Centers, Navy, Military Academies, Fire-Fighting Officers School and Radio Engineering Reconnaissance Units overweight was found in 23.2%, and obesity in 10.0% of examined (4). Researches on nutrition state of soldiers serving in the Peacekeeping UN missions in the Middle East revealed overweight occurrence among 32.9% examined in Syria and Lebanon (1). Percentage of obese men was not significant and amounted 3.6% in Syria and 4.2% in Lebanon.

Conclusions

1. Performed examinations revealed systematic increase, throughout the years, of overweight occurrence among young men coming from big cities and small towns and from the country as well, particularly among secondary educated recruits.
2. Systematically decreased number of obese men irrespective of dwelling place.
3. Decrease of obese men technically and elementary educated was found while number of obese men secondary educated increased.
4. Observed event of obesity occurrence among men creates necessity to carry out prophylaxis activity about proper nutrition, popularize proper dietary habits and spreading knowledge about obesity threats and its consequences for the health.

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Correspondence: Anna Kłos
Military Institute of Hygiene and Epidemiology
4 Kozielska St.
Warsaw
Poland

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