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## BIOLOGICAL CONDITION OF SERVICEWOMEN OF THE POLISH BORDER GUARD

### INTRODUCTION

The rapid globalization processes significantly influence people's lifestyles. The common thirst for a successful career determines people's activities, causing many paradoxes. For instance, the biological condition of people beginning their professional careers is significantly determined by the kind of practiced profession. Physical fitness is a state which enables a person to carry out activities of daily living without being overtired and with sufficient reserves to make use of leisure time [2]. The job of the Border Guard servicemen and servicewomen requires, in a controlled way, a defined lifestyle and heavily restricts one's spare time. This is caused by the specific character of this profession, irregular work time and health risks connected with the performed tasks. Along with the development of the Polish Border Guard, a wide range of job possibilities was created for women. The aim of the present work was to assess the level of chosen somatic and motor development features as well as selected lifestyle factors of the Polish Border Guard servicewomen.

### METHODS

The subjects were 55 women aged 20-29 (average 25.03), trainees in the Border Guard General Training Centre in Koszalin. For the purpose of the study, anthropometric measurements and physical fitness tests were conducted with the use of survey method.

The subjects' body height was measured using an anthropometer with an accuracy of 0.1 cm. The measurement of body mass was performed with the use of medical scales, in sports outfits, with an accuracy of

0.1 cm. On the basis of the measurement results of somatic features, the body mass index (BMI) was calculated.

To estimate the level of physical fitness, a set of tests was used including standing jump [cm], static strength of a forearm muscles – clenching a fist around a hand dynamometer [kG], and flexibility – bend and reach trial [cm].

The interview survey method was used in the examination of the group of women, who individually filled in the questionnaire including the following data: level of education, smoking and sports practiced at the school age and at present. The obtained results were statistically analyzed. In the statistical analysis the mean and standard deviation values were calculated. The significance of the differences between the mean values was estimated with Student's t-test.

### RESULTS

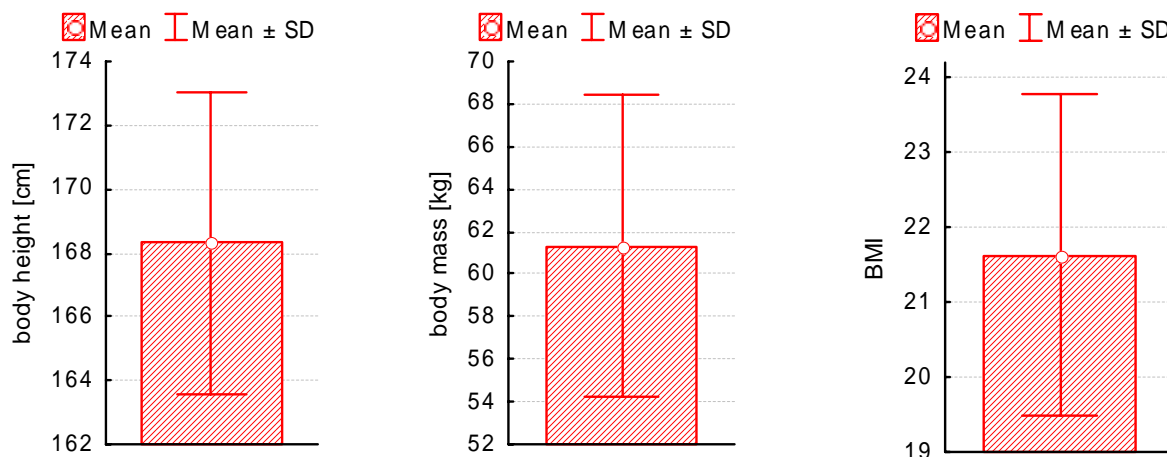
#### *Somatic characteristics*

Body height is an inherent homogeneous feature classified as a basic measurement of somatic development. In the examined group of women, the mean body height was 168.3 cm. The variability of this feature was not significant, which shows the group's homogeneity with reference to the body height. The control group consisted of women aged 20-29, declaring systematic physical exercises (trainings) [3], with the mean body height of 167.5 cm. The results of the comparison between both groups show that the women starting their professional career in the Border Guard are taller than other women at the same age practicing sports.

Body mass is, to a moderate degree, a genetically controlled feature, greatly responding to nutrition and lifestyle conditions, more than any other anthropometric indicators. The mean value of the subjects' body mass was 61.3 kg. The control group achieved the mean value of 58.5 kg. The higher value of the body mass in the servicewomen in comparison with the control group results from the higher body height values. The difference between the two groups was statistically insignificant.

strength measurement. The slight difference between the groups was not statistically significant.

Flexibility trial is an important component of physical fitness, which in a special way determines health and independence of an individual [4]. The examined group of Border Guard servicewomen reached the result of 27.05 in the spine fitness trial. The control group reached the value of 26.64. This allows us to state that both populations are characterized by a comparable



**Figure 1.** Body height, body mass and the BMI of the examined women

The body mass index is commonly used as a source of information concerning body fatness, obesity, and nutrition condition [1, 5]. In the examined population the mean BMI was 21.63. In the control group it amounted to 20.79. Slight differences show close weight-height proportions in both groups within the reference range (WHO 1997).

#### *Motor characteristic*

Explosive strength trial is an ability to break down external resistance or to counteract it at the expense of muscle work. Its proper level is necessary for general health and efficient body movement [4]. Having compared the mean values of the two groups, we can see significant differences in the explosive strength of lower limbs. The examined servicewomen reached the mean result of 174.04 cm, whereas in the control group the mean result amounted to 162.86 cm. The difference was statistically significant.

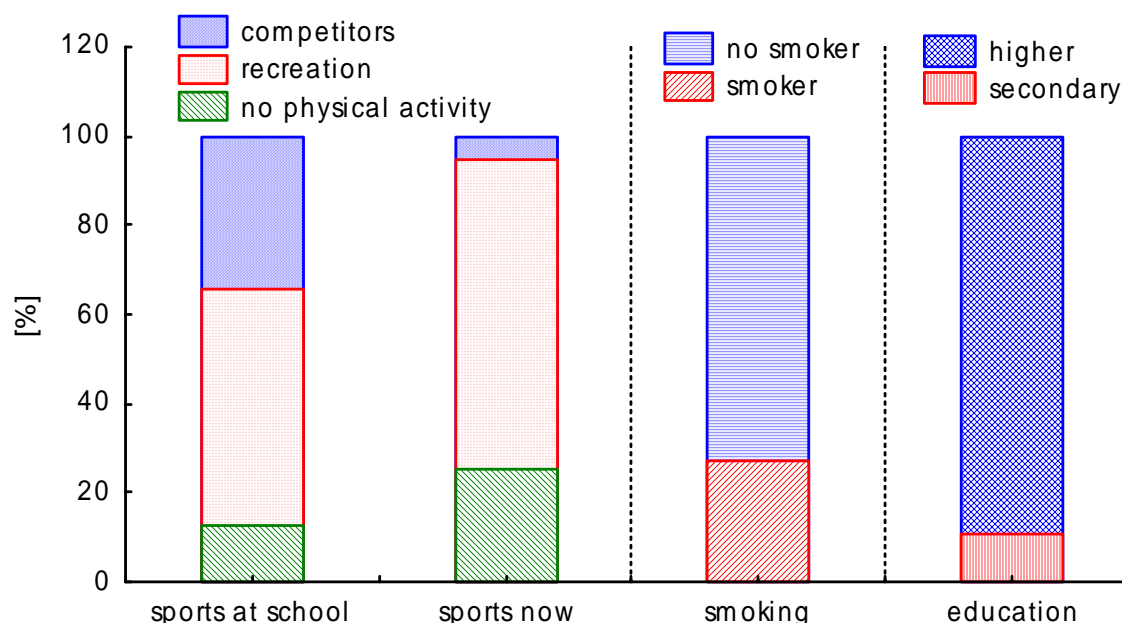
The result of the hand-clenching trial in the servicewomen amounted to the average of 34.16 kG. The control group obtained the mean result of 33.87 kG. The tendency of strength advantage observed in the previous trial in the servicewomen, remained also in the case of hand

level of hybrid abilities which determine the range of movement in the spine and the hip joints.

#### *Results of the interview survey*

Education. In the group of Border Guard servicewomen the level of education determines the membership of this professional group, in accordance with the Border Guard Act. Students with secondary education (10.9%) are directed to the corps of non-commissioned officers, whereas those with higher education (89.1%) become members of the corps of warrant officers. This recruitment classification is determined by the current need to assemble the personnel of Border Guard that is to assume shortly the various ranges of professional duties.

Smoking. 27.28% of the examined servicewomen were smokers. In the control group, systematic smoking was declared by 6.33% of the respondents. A significant difference to the servicewomen's disadvantage may result from irregular work time and stress connected with their duties.



**Figure 2.** Percentage values of the chosen factors of lifestyle in the examined population

**Physical activity.** In the survey concerning physical activity, 34.5% declared practicing competitive sports during their school education, at the same time 52.7% of the servicewomen claimed that they practiced physical recreation activities, and 12.7% did not practice any sport at all. This proportion changes considerably at the moment of starting working for the Border Guard: 5.45% practice competitive sports, 69.09% practice recreational sports and 25.54% do not perform any physical activity in their spare time.

#### Conclusions:

On the basis of the presented results it can be concluded that women working for the Border Guard display a high level of somatic development and physical fitness. It can be assumed that physical requirements for the Border Guard servicewomen include the necessity of sports training. Additionally, keeping fit is necessary for the servicewomen because of their duties, and annual physical fitness tests conditioning their further work for the Border Guard. The analysis showed that the higher values of basic somatic parameters of the servicewomen in comparison with the control group of the same age could be to the great advantage of the former. The higher explosive strength of the lower limbs may be also connected with the effects of the Border Guard training. Other fitness trials did not show significant discrepancies. From the survey data, it appears that over 80% of the examined population showed interest in more intensive physical activity during their school education, which translates

into their present physical activity. Therefore, it can be stated that the Border Guard servicewomen are characterized by specific somatic features and a high level of physical fitness.

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