PREPAREDNESS AND PHYSICAL FITNESS
OF MILITARY PERSONNEL

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ABSTRACTS

Physical activities are important for the military personnel to preserve physical preparedness and endurance. The physical endurance of the military personnel is a basis for the military career and fulfilling military duties. Everyday activities of soldiers are connected with physical fitness, which demands a high level of physical preparedness. Everybody in military service is obliged to pass annual physical tests.

Sports activities are very popular in the army. The military personnel can choose sports’ activities that are suitable and available, that increases physical fitness and the health capacity. Physical activities are planned for free time and weekend periods.

The fitness and strength training in a fitness hall is very common and popular. It is an efficient strategy to increase the muscular condition. This is an important tool to enhance the sports performance. It seems, however to have a limited impact on the cardio-respiratory and metabolic functions. Strength training alone is not effective to promote weight loss and to support considerable changes of body the composition. The amount of physical activity of working people has dropped and the resulting poor physical condition is becoming a threat to their working ability, health and well-being. The contemporary life style is connected with a full time job that reduces the time for physical activities. The consequence of physical inactivity is associated with multiple health related problems. The reduction of physical fitness reveals the increasing of the number of the military personnel who cannot pass physical control tests.
**Key words:** Physical activity, health, fitness, military personnel

**INTRODUCTION**

Individual physical preparedness is a basis for successful service and a military career. Physical activities are important for the military personnel to preserve physical preparedness and fitness. Everyday activities of soldiers are connected with physical activities that demand a high level of physical preparedness. Everybody in military service is obliged to pass annual physical tests. Physical test check ups take place annually. There are three types of physical control: the cross country race, the push-ups test and the sit-ups test. Physical activities are popularised and planned for free time and weekend periods [5,6,7,8,9].

The fitness and strength training in a fitness hall is very common. It is an efficient strategy to increase the muscular condition. This is an important tool to enhance the sports performance. The contemporary lifestyle is connected with a full time job that reduces the time for physical activities. The consequence of physical inactivity is associated with multiple health related problems. The reduction of physical fitness reveals the increasing of the number of military personnel who cannot pass physical control tests.

**MATERIAL AND METHODS**

The aim of the present study was to evaluate health capacities and the physical preparedness level. 120 persons were included in the study. They are divided into two groups: 60 persons – cadets of the NDA, they form the 1st group. We have subdivided them according to the age into the two subgroups: under 25 years of age and above 25 years of age. 60 persons- the military personnel form the 2nd group. We have subdivided them into two subgroups: under 40 years of age and above 40 years of age.

Studies have indicated the number of smokers, assessed the results of physical tests, analyzed the anthropometric indices: the body mass and body chest circumferences. We have made the correlation analysis between physical tests data and anthropometric characteristics.
RESULTS AND DISCUSSION

The first examined group included 60 persons: 10 females (8 of them were in the age under 25 years, 2 of them were above 25 years) and 50 males (42 of them were in the age under 25 years). The distribution of the examined persons according to the age have been indicated in Fig.1.

![Figure 1](image)

**Figure 1.** Distribution of the examined persons according to the age (%).

The second examined group included 60 persons: 12 females (5 of them were in the age under 40 years, 7 of them were above 40 years) and 48 males (25 of them were in the age under 40 years, 23 of them were in the age above 40 years). The distribution of the examined persons according to the age have been indicated in Fig. 1.

120 subjects were asked to indicate their attitude to smoking. We have fixed the presence of this harmful habit in 51 subjects from the total of 120 subjects. There were 30 cadets (1st group) and 21 military personnel (2nd group). The assessment of data in the 1st group has shown that 86.7% (26 subjects) were in the age under 25 years, 13.3% (4 subjects) were in the age above 25 years. The number of smokers in the 2nd group was: 38.1% (8 subjects) were in the age under 40 years, 61.9% (13 subjects) were in the age above 40 years (Fig. 2).
Figure 2. Distribution of the examined persons according their attitude to smoking (%).

The subjects participated in the physical tests that were taken annually. There are the push-up test, the revealed fitness and the strength of shoulder muscles. The sit-up tests that characterised the abdominal muscles strength and fitness and the country cross race 3000m (m) or 1500m (f) that indicated the general endurance of the subject.

The study indicated that smoking has an interaction to physical tests results. The test results revealed that smoking had a significant effect on the test outcome. The results in the push-up test were about 15 % lower in the smokers’ group than the results in the non-smokers’ group. We indicated the tendency of the decrease in the test outcome also in the sit-up exercise in the case of over 23% in the smokers group. We have fixed significantly lower (12 %) results in the country cross race in the smokers’ group than in the non-smokers’ group (Fig. 3).
We observed anthropometric coefficients and indices in the investigated subject groups. The most popular index is the body mass index (BMI). It is used for the assessment of overweight and obesity – the growing problem of the public health.

We analyzed the level of the BMI in subgroups of the 1st group-cadets’ group. The BMI level was higher (over 25 kg/m²) for 30% cadets (18 subjects). The BMI levels were higher (over 25 kg/m²) for 65% in the 2nd group. The military personnel group. We determined the significant increasing of the BMI (over 30 kg/m²) for 8 subjects (13.3%) Fig.4. The mean value of the BMI in the 1st group (cadets) was 23.3±2.4 kg/m², the mean value of the BMI in the 2nd group was 26.5 ± 3.8 kg/m².

We have revealed the correlation between physical tests results (country cross race) and the data of the body mass index (Fig.5).

We have used the weight-height index for the assessment of the anthropometric data of participants. There were 84 subjects (70%) who had the weight-height index over the standard level. It has been
estimated that in the 1st group (cadets) there were 71.6%, and in the 2nd group (military personnel) 68.3% of participants with a high weight-height index level (Fig 6). The average level of the weight-height index in the 1st group (cadets) was $459 \pm 72$ g/cm, the average level of the weight-height index in the 2nd group (military personnel) $\sim 450 \pm 72$ g/cm. Our study has shown that the data of the weight-height index have an interaction on the results of the push-up test that is shown in Fig 7.

![Figure 4. Distribution of the body mass index (BMI) data: in the cadets’ subgroups under the age of 25 years. (1), over 25 years. (2) and in the subgroups for the military personnel under 40 years. (3), over 40 years. (4).](image-url)
Figure 5. Correlation between body mass index and country cross race results in the 1st group (cadets) ($r=-0.40$, $p<0.006$).

Figure 6. Distribution of the weight-height index in subgroups: for cadets under the age of 25 years (1), cadets over 25 years (2) and the military personnel under 40 years (3), the military personnel over 40 years. (4).
CONCLUSION

1. The finding suggests that smoking has a negative impact on the physical fitness level that was reflected in decreasing the outcome of physical tests about 13–22% (in points). The results in the sit-up test for smokers were significantly lower (p=0.022), as well as the present tendency of reducing the results in push-up tests (p=0.116) in cross country race results and in the general endurance level (p=0.096) was revealed.

2. The evaluation of the anthropometric data in the cadets and in the military personnel groups reveals a tendency towards an increase in the body mass index, the weight-height index over the standard level. The average data of the body mass index and the weight-height index were close to the upper level of the standard. The mean value of the BMI in cadets was 23.3±2.4kg/m². The mean value of the BMI in the military personnel group was 26.5 ±
3.8kg/m², but the data of the BMI were over the standard level for 30% of cadets and for 65% of the military personnel.

3. The results of the investigation revealed close interaction between anthropometric characteristics and physical fitness data. We have determined the tendency to the correlation between the weight-height index and push-up test results (r = -0.27, p = 0.06), cross country race results and the BMI data (r = -0.30, p = 0.045).

REFERENCES


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