Physical activity of soldiers in the Polish Armed Force's military administration units and special units

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Summary

Study aim: To determine physical activity levels of soldiers in military administration units and special units.

Material and methods: The research included 58 military administration soldiers (male) and 45 special unit soldiers. The average age of the military administration soldiers was 45.2 ± 5.54 years, whereas in the case of special unit soldiers it was 31.4 ± 4.40 years. The research tool employed was the International Physical Activity Questionnaire (IPAQ), long version, last 7 days.

Results: According to the adopted criteria, all special unit soldiers and 41.4% of the military administration soldiers were assigned a high level of physical activity (p<0.001). Of the researched soldiers in the military administrative units, 29.3% were assigned to the adequate level and 29.3% were assigned to the inadequate level. One in two soldiers from military administration units does not participate in mandatory physical education classes nor do they compensate for the shortage of physical activity in their leisure time.

Conclusions: Definite steps should be taken regarding broadly based promotion of health and physical activity among Polish Armed Forces soldiers.

Key words: Regular soldiers – Physical activity – IPAQ

Introduction

Numerous academic studies bear out the notion that in terms of one’s health, physical activity functions as a preventive measure [5,6,13,17]. Undertaking physical activity plays an important role in the battle against the ever-increasing problems – seen both within a society and its armed forces – of being overweight, obesity, circulatory system diseases, and diabetes [1,4,8,16]. A lack of exercise and an unhealthy diet lead to being overweight or obesity. This disease of civilization affects about one-half to two-thirds of societies in highly developed countries [20]. As far as the Polish population is concerned, it has been estimated that being overweight and obesity affect about 50-60% of people [19]. It is the result of poor diet and low levels of physical activity, the effects of which Polish society has been suffering for years. Research conducted in 2003-2005 within the framework of the National Health Survey in Poland – Project WOBASZ – showed that about 30% of the Polish population does not do any physical exercise that lasts for more than 30 minutes. Furthermore, based on the analysis of the results of Eurobarometer surveys conducted in 2010, it was determined that only 3% to 6% of Polish males aged 25-45 years regularly undertake physical activity, and only 19% with some regularity [18].

In comparison to the male population of the European Union, these results are significantly lower (in the EU from 7% to 9% and 31%, respectively). The ever-increasing lack of exercise among the Polish children and teenagers constitutes an alarming phenomenon [3]. In the future, it could lead to an increased percentage of overweight or obese people.

Being a regular soldier requires special psychophysical predispositions, which are first evaluated as part of a qualification procedure for candidates wanting to join the armed forces of the Republic of Poland, and then periodically during their subsequent military service. According to legal requirements, a regular soldier is to have his or her physical fitness evaluated annually. If the soldier obtains an unsatisfactory mark in 2 consecutive years, he or she will suffer formal consequences. Until 2012, it was considered a mandatory discharge from military service; beginning in 2012, it results in lowering an overall score to satisfactory on the periodical evaluation. The soldier evaluated as such is required to participate in physical education classes in order to maintain physical fitness, thus allowing the soldier to effectively perform official duties. The main objective of these classes is to develop and enhance motor abilities, physical skills, and psychophysical dispositions. The secondary objective is to develop a habit of regular participation in physical recreation.

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Thus far, the results of research upon which the levels of physical activity among soldiers were determined differ. In 2008, research employing the International Physical Activity Questionnaire was conducted among soldiers of land forces that took part in training at the Training Center for Land Forces. Based on the research results, those soldiers were given a high grade and an adequate level of physical activity [9]. Additional research, conducted by Migasiewicz et al. [10], showed that almost 46% of soldiers from elite units such as the 25th Air Cavalry Brigade were not interested in any physical activity whatsoever [10]. Furthermore, Sokolowski et al. [15], after having conducted research among the candidates for non-commissioned officers of the land forces, assigned to more than half of them an inadequate physical activity level [15]. The results of this research should not come as a surprise, since soldiers come from a certain society and they are a reflection of it. They go through the same education system. Therefore, their attitudes towards physical activity are, therefore, more or less the same as the greater society. Possibly, attitudes vary based on the upbringing received at home. However, as far as commitment to matters related to physical activity is concerned, there are higher expectations in the case of soldiers than society at large, as soldiers are in a profession that requires better physical fitness and mental endurance to begin with. The aim of the conducted research was thus to determine physical activity levels of soldiers from military administration units and special units.

**Material and Methods**

The research included 58 soldiers (male) from organizational units that together make up the Ministry of National Defense (in this paper conventionally referred to as military administration) and 45 soldiers (male) from special units. The average age of the military administration soldiers was 45.2 ± 5.5 years (aged 33 – 58 years), whereas in the case of special unit soldiers it was 31.4 ± 4.40 years (27 – 44 years).

The research tool employed was the International Physical Activity Questionnaire (IPAQ), long version, covering last 7 days [21]. The research was conducted in November. It had been decided that it was a typical military period during which there was no active preparation for a physical fitness assessment. The research did not include those soldiers who had gone on an official trip or doctor’s leave within at least 10 days prior to the questionnaire. Research participants were provided with guidelines on how to complete the questionnaire.

A detailed analysis encompassed the answers provided by the participants to questions from the 2 parts of the questionnaire: part 1 – “Job related physical activity” and part 4 – “Recreation, sport, and leisure-time physical activity.” The mean time of a given physical activity was calculated as well as the intensity rates corresponding to the multiples of basal metabolic rate (Metabolic Equivalent of Task, MET). The overall level of physical activity was determined based on the adopted criteria [21].

In order to compare the mean values of the duration of individual activities, a Student's t-test for independent samples was employed; fraction differences were assessed with the use of a chi-square test. For the assessment of significance of difference, α = 0.05 was adopted.

**Results**

The conducted research showed considerable differences in the levels of physical activity undertaken by soldiers from special units and military administration units. The difference can be observed both in the intensity of the undertaken physical activity as well as its duration (Tables 1 and 2). In practicing their profession, the military administration soldiers devote about three-quarters less time for physical activity, either intensive or moderate (p<0.001), as compared to special unit soldiers. Similarly, in their leisure time, the military administration soldiers devote less time to physical activity than the special unit soldiers (about 45% less of time for intensive physical activity and 75% less for moderate physical activity; p<0.05).

| Physical activities | Special units | Military administration |
|---------------------|---------------|-------------------------|
| Intensive           |               |                         |
| Days/week           | 4.8 ± 0,7     | 1.2 ± 1.6*              |
| Minutes/day         | 99.7 ± 45.7   | 30.0 ± 38.5*            |
| Moderate            |               |                         |
| Days/week           | 3.7 ± 2.0     | 1.1 ± 1.6*              |
| Minutes/day         | 65.3 ± 39.6   | 20.2 ± 37.1*            |
| Walking             |               |                         |
| Days/week           | 4.9 ± 1.3     | 2.2 ± 2.3               |
| Total time of walking | 42.0 ± 19.6 | 36.7 ± 36.0 |

* Significantly (p<0.001) different from Special units

All special unit soldiers who participated in the research stated that while practicing their profession they undertook intensive and moderate activity as well as walking (which lasted more than 10 minutes per individual event). However, in the case of the military administration...
soldiers, 61% of participants undertook intensive activity, 66% moderate activity, and 50% walking, all types of activities being significantly different (p<0.001) than those of the special unit soldiers. Significantly more soldiers from the special units, as compared to the military administration soldiers, declared undertaking leisure time physical activity, both intensive (88% and 60% respectively, p<0.001) and moderate (55% and 34% respectively, p<0.05). About 80% of participating soldiers, regardless of the nature of their service, declared undertaking activity related to walking.

Table 2. Physical activities undertaken by the special units (n = 45) and military administration (n=58) soldiers in their leisure time (mean ±SD)

| Physical activities       | Special units | Military administration |
|--------------------------|---------------|-------------------------|
| Intensive                |               |                         |
| Days/week                | 3,75 ± 2.0    | 1,74 ± 1,81**           |
| Minutes/day              | 74,2 ± 42,2   | 41,5 ± 41,4*            |
| Moderate                 |               |                         |
| Days/week                | 1,73 ± 1,60   | 0,42 ± 0,7**            |
| Minutes/day              | 48,4 ± 43,5   | 31,0 ± 43,1             |
| Walking                  |               |                         |
| Days/week                | 3,7 ± 2,6     | 3,6 ± 2,7               |
| Total time of walking    | 41,2 ± 31,8   | 38,7 ± 25,3             |

Significantly different from Special units: * p<0.05; ** p<0.001

The mean value of MET for the special unit soldiers, calculated together for job-related and leisure-time activities, amounted to 8624 ± 2275 MET (5083 MET – job, 3540 MET – leisure). It was significantly (p<0.001) higher than the one observed among the military administration soldiers, i.e. 2630 ± 1286 MET (1385 MET – job, 1245 MET – leisure). According to the adopted criteria, all soldiers from the special units and 41.4% of soldiers from the military administration were assigned a high level of physical activity. Of the researched soldiers in the military administrative units, 29.3% were assigned to the adequate style [11]. If we are talking about regular soldiers, it seems that all soldiers should demonstrate a high physical activity level. Such a level guarantees proper physical preparation needed to perform official duties both at home and abroad (military missions). In light of the results presented in this paper pertaining to own research as well as other studies conducted by different authors, greater emphasis should be placed on the promotion of a healthy lifestyle within the Armed Forces of the Republic of Poland through the introduction of special programs promoting physical activity and a healthy lifestyle. Soldiers should be obliged to undertake regular physical activity not only by the “awareness of the necessity to stay fit,” but also by an obligatory annual physical fitness assessment. However, considering current physical fitness assessments, which vary based on age, gender, military unit and official post, achieving the minimum physical fitness level (a satisfactory mark) does not require soldiers to undertake regular physical activity. Additionally, a certain paradox can be

Discussion

The Physical Culture Regulations for the Armed Forces of the Republic of Poland state that the special unit soldiers should have 6 hours of physical education classes per week, whereas other soldiers should have at least 4 hours. Analysis of the research results showed that active duty military administration soldiers devoted approximately 50 minutes per week to intensive and moderate activities. It proves that they do not participate in the mandatory physical education classes. Furthermore, intensive and/or moderate activities are only undertaken by approximately 60% of those soldiers. The data is not optimistic in light of general health recommendations, which state that only physical training that results in energy expenditure of over 2000 kcal/week constitutes the minimum recommended value for the prophylaxis of the diseases of civilization. The obtained results indicate that only 1 in 3 soldiers from military administration units fulfills the minimum recommended energy expenditure for the prophylaxis of the diseases of civilization, whereas the average weekly energy expenditure of the military administration soldiers comes close to the above-specified minimum.

According to the research conducted by Piątkowska [14], in “the last seven days” 53.4% of Polish society did not undertake any intensive physical activity; 39.8% did not undertake moderate physical activity. The values are similar to those determined in European Union countries (57.4% and 40%, respectively). The population percentage of the European Union countries that declared a high level of physical activity is quite varied. It ranges from 44.2% (the Netherlands) to 22.9% (Sweden), and in the case of Poland it amounts to 33.5%. At the same time, a low level of physical activity was attributed to 27.9% of Poles [14]. Generally speaking, it can be stated that the representative levels of physical activity in Polish society correspond to the levels seen in military administration soldiers. Their physical activity level is also similar to the level determined for the personnel in executive management, out of which only 27% fulfills the recommended physical activity minimum needed to lead a healthy lifestyle [11]. If we are talking about regular soldiers, it seems that all soldiers should demonstrate a high physical activity level. Such a level guarantees proper physical preparation needed to perform official duties both at home and abroad (military missions). In light of the results presented in this paper pertaining to own research as well as other studies conducted by different authors, greater emphasis should be placed on the promotion of a healthy lifestyle within the Armed Forces of the Republic of Poland through the introduction of special programs promoting physical activity and a healthy lifestyle. Soldiers should be obliged to undertake regular physical activity not only by the “awareness of the necessity to stay fit,” but also by an obligatory annual physical fitness assessment. However, considering current physical fitness assessments, which vary based on age, gender, military unit and official post, achieving the minimum physical fitness level (a satisfactory mark) does not require soldiers to undertake regular physical activity. Additionally, a certain paradox can be
observed: despite being assigned to the identical official post (e.g., platoon or a company commander), soldiers of different ages or different sexes undergo different physical fitness assessments, the difference being in exercises and norms. In light of the statement above, a question must be posed as to the purpose of physical fitness assessment among soldiers. The criticism regarding the lack of logic here has been voiced for many years in the circles of the military physical culture during conferences organized by the Polish Association of Physical Culture, Physical Culture Section of the Armed Forces. The most common justification for the physical fitness assessments being different based on gender included the anatomical and physiological differences between male and female soldiers. However, there are numerous examples, both within sports and the uniformed services, which show that properly selected and trained women achieve better results than the average male. The introduction of a uniform physical fitness assessment for all soldiers and correlating the physical fitness norms to the requirements of a post that a soldier is supposed to hold (regardless of gender) is fully substantiated. Another issue that needs to be resolved is related to a rational necessity for the universal introduction of task-oriented physical fitness assessments. Resolving these matters should contribute indirectly to the introduction of task-oriented physical fitness assessments. Resolving these matters should contribute indirectly to the increase in the level of physical activity and also indicate which forms of physical activity should be undertaken by soldiers (task-oriented psychophysical preparation).

Considerable differences can also be seen in relation to marks obtained on annual physical fitness assessments by soldiers from special units and military administration units. Generally, the former group, despite more stringent criteria, obtains very good marks, whereas in the military administration group, good marks prevail as well as a higher rate of doctor’s leaves.

In the Polish Armed Forces, only military pilots currently receive special attention concerning physical fitness, health training, and the prophylaxis of the diseases of civilization. They participate annually in fitness camps that last for 3 weeks. During that time, participants’ physical stamina and fitness are evaluated, and classes are offered on different forms of physical recreation, physical education, and health promotion. According to the results of research conducted in 2008, military pilots confirmed that classes in health promotion considerably enhanced their knowledge about a healthy lifestyle [16].

Soldiers from military administration units, whose job is sedentary, belong to a risk group as far as the diseases of civilization are concerned. Therefore, a minimizing factor should encompass regular participation in physical education and recreation classes. An associated, albeit separate, matter is to determine whether those soldiers who do not participate in mandatory physical education classes should be allowed to undergo physical fitness assessment. They constitute a risk group that can suffer injuries while undertaking sporadic physical activity with greater intensity dictated by the circumstances.

Analysis of the results of the research conducted for the purposes of this paper indicates that a commonplace opinion that the armed forces are physically active is not true. In general, only soldiers from special units devote a lot of time to physical activity. The reality is more disturbing in the case of soldiers from military administration units. This professional group, as well as others, should receive care from the physical culture specialists within the Armed Forces of the Republic of Poland and the military health services.

While we move towards a small and professional army, each soldier’s health and physical fitness are valuable. Thus, all soldiers should be regularly acquainted with the tenets of health training, and these should be integrated into practice and everyday life. That is why it is worth considering including all personnel of the Polish Armed Forces in a few days of fitness training that would encompass practical recreational activities as well as information about diet, individual physical training, and threats related to an overweight and sedentary lifestyle. Analysis of results pertaining to the research conducted on numerous participants shows that physical activity plays an important role in decreasing the occurrences of the diseases of civilization as well as mortality [7,12]. Carlsson et al. [7], with their research on the lifestyles of twins, also proved that it is not genetic factors that are the main factors in maintaining good health, but rather physical activity. It refutes a commonplace opinion that says that genes are mostly responsible for our health and we ourselves do not have a real impact on it. Instead, as it turns out, our health is to a great extent in our hands.

Summing up, the obtained research results constitute an alarming warning, which should motivate physical education specialists and military health services to take definite steps regarding broadly based health promotion among regular soldiers, since 1 in 2 soldiers assigned to military administration units does not participate in the mandatory physical education classes nor compensates for the shortage of physical activity in leisure time.

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Received 18.06.2012
Accepted 25.09.2012

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