



Management of physical fitness training as a praxeological factor of safety culture

Úroveň fyzickej pripravenosti ako praxeologický faktor bezpečnostnej kultúry

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Abstract:

We live in the age where obesity and diseases of affluence in general, usually caused by sedentary lifestyle, poses a significant threat to people's health. We can partially decrease the threat by regular physical activity, which supports personal development, perfects the human being; it also increases the effectiveness of one's work and life. However, we believe that overall physical fitness is important for other reasons as well, e.g. personal safety. It is worth highlighting, that the right level of physical fitness can decrease the level of threat and at the same time improve the sense of safety. As we want to be prepared for a potential assault (a sudden attack), we train our body to be able to face it in a threatening situation. In this matter, the dominant role is played by combat sports, which, through special techniques directly serve to protect our body. The aim of the paper is to determine the level of physical fitness of martial arts competitors – students in Poland and Slovakia and indicate the possibilities of employing the obtained level of physical fitness in safety culture in Poland and Slovakia. The group consisted of 60 subjects. The level of physical fitness was determined by means of tests. We used descriptive statistics, statistical inference and determination of interdependence of features to evaluate the data. We recorded small differences between somatic build of Poles and Slovaks. In the same time, we presented recommendations in terms of physical fitness and its using in addressing physical threats.

Keywords: *Management, physical fitness, safety culture*

Abstrakt:

Žijeme v dobe, kedy obezita a civilizačné ochorenia vo všeobecnosti, vo veľkej miere spôsobené sedavým spôsobom života, predstavujú vážny problém pre zdravie ľudí. Túto hrozbu môžeme čiastočne znižovať pravidelným cvičením, čo zároveň podporuje osobný rozvoj, zvyšuje kvalitu života ale aj efektivitu vykonanej práce. Nazdávame sa, že celková fyzickej pripravenosti je dôležitá aj z hľadiska osobnej bezpečnosti. Úroveň trénovanosti môže zohrať dôležitú úlohu v prípade ohrozenia respektive nečakaného útoku. V súvislosti s tým sa do popredia dostávajú úpolové športy, ktorých jednotlivé techniky priamo slúžia na odrazenie takého útoku. Cieľom tohto príspevku je preto určiť úroveň fyzickej pripravenosti súťažiacich v úpolových športoch – poľských a slovenských študentov a načrtnúť ako by sa dala využiť v ochrane osôb a majetku v Poľsku a na Slovensku. Výskumná skupina pozostávala zo 60 študentov. Na získanie údajov sme použili meranie somatických parametrov a výkonu v individuálnych testoch fyzickej pripravenosti. Na vyhodnotenie údajov sme použili deskriptívnu štatistiku, štatistickú interferenciu a určili závislosť premenných. Zaznamenali sme len malé rozdiely vo výkonoch poľských a slovenských študentov. Zároveň sme prezentovali odporúčania pre prax v súvislosti s využitím úrovne fyzickej pripravenosti v prípade ohrozenia.

Kľúčové slová: manažment, fyzická pripravenosť, bezpečnostná kultúra

Introduction

The term „safety” means a kind of a subjective state, generally consisting in the absence of any threats. By a „threat“ we understand a phenomenon or a set of phenomena creating a likelihood of occurrence of specific kinds of event or states which are disadvantageous for human existence (including health, life and occurrence of favourable perspectives for further healthy development) [1]. Any actions, which are scientifically promising in the perspective of equalizing threats for the development and normal functioning of human beings, are also related to the whole area of physical cultural sciences. Personal safety becomes an integral part of this area. It is directly related to every individual and consists of such elements as functional fitness, state of health and – from a wider perspective – the quality of human life.

We develop our physical fitness by motor activity. At the basic level, it is enough to satisfy individual needs related to everyday life. Without a doubt, it can be translated into the effectiveness of human work, both physical and mental one. In a wider range, such activity enables renewing physical strength lost because of sickness, free an individual from stress and face everyday challenges more easily. It is also an element which brings people together and, to a large extent, satisfies the need for social participation and recognition. As an elite activity, it helps to win sport championship, satisfies the need for sport rivalry and enables to obtain physical and – from a wider sense – psychophysical perfectness.

When distinguishing two fundamental types of threats: external and internal, one can state that the duty to ensure safety is the duty of authorities and protection services. In this case, an individual acts only as a facilitator. However, it is the individual on whom the majority of factors determining safety and satisfaction of the need for safety depends and external institutions act only as facilitators.

Nevertheless, it is worth highlighting, that the right level of physical fitness can decrease the level of threat and at the same time improve the sense of safety in both cases. Physical activity supports development, perfects a human being, it also increases the effectiveness of his work and life and is an element which shapes health

and independence. The level of fitness achieved thanks to physical activities enables to avoid external threats effectively, decrease the level of their harmfulness or prevents them effectively [2].

It should be noted that among a number of elements of the world around us, in which we sometimes feel trapped and threatened, at times we are a threat to ourselves as a result of incautious actions. For those using common sense, this situation is not acceptable. As we want to be prepared for a potential assault (a sudden attack), we train our body to be able to face it in a threatening situation. In this matter, the dominant role is played by combat sports, which, through a specially directed technique directly serve to protect our body.

The aim of the paper is to determine the level of physical fitness of martial arts competitors – students in Poland and Slovakia and indicate the possibilities of employing the obtained level of physical fitness in safety culture in Poland and Slovakia.

1. Material and methodology

The participants of the study were martial arts competitors, students of WSBPiI Apeiron Kraków, Poland and VŠBM v KE, Kosice, Slovakia. The group consisted of 60 subjects. The level of physical fitness was determined by means of tests . A survey was carried out as well. After carrying out analyses, the following methods were used: descriptive statistics, statistical inference, determination of interdependence of features.

Participants from Poland (n=30) and Slovakia (n=30) took part in research evaluating somatic parameters and physical fitness. Table 1 presents a description of participants' somatic parameters.

Table 1 Description of somatic parameters of martial arts competitors from Poland and Slovakia.

Parameter	Poland (n=30)		Slovakia (n=30)	
	$\bar{x} \pm SD$	Scope (min–max.)	$\bar{x} \pm SD$	Scope (min–max.)
Height	181,8 ± 3,89	176–190	182,8 ± 3,88	174–188
Age	24,1 ± 1,60	22–28	24,1 ± 1,93	21,0–27
Weight	79,5 ± 9,48	68,0–95,3	78,5 ± 7,27	68,0–95,1
Muscle mass	68,6 ± 6,91	58,9–79,9	67,1 ± 5,41	59,1–79,7
TBW	59,2 ± 4,76	51,1–67,4	59,0 ± 4,95	50,4–67,1
Bone mass	3,5 ± 0,41	3,0–4,3	3,3 ± 0,27	2,9–4,1
FAT	12,1 ± 1,72	9,3–19,3	11,9 ± 2,15	9,0–18,6

Table 2 presents a summary of statistics of physical fitness tests of participants from Poland and Slovakia.

Table 2 Description of results of special fitness tests of participants from Poland and Slovakia.

Parameter	Poland (n=30)		Slovakia (n=30)	
	$\bar{x} \pm SD$	Scope (min-max.)	$\bar{x} \pm SD$	Scope (min-max.)
Barbell overhead presses	10,7 ± 2,47	6–14	8,4 ± 3,52	3–14
Classic barbell squat	22,0 ± 3,17	16–26	21,1 ± 3,22	14–30
Pull-ups	13,5 ± 5,36	6–21	13,8 ± 4,61	7–21
Abs exercises from lying position	26,1 ± 4,43	19–33	27,4 ± 3,66	21–33
Cooper's Test	2892 ± 227,2	2570–3210	2920 ± 167,7	2600–3210
Standing long jump	218,7 ± 7,03	193–231	216,6 ± 9,38	193–228
Shuttle running	12,7 ± 0,71	11,5–13,5	12,5 ± 0,65	11,5–13,27
Plat tapping	13,6 ± 1,16	11,9–15,3	12,8 ± 0,93	11,4–15,08
Sit-and-reach	16,3 ± 4,36	11–24	15,4 ± 3,87	9–24
Dynamometer	49,7 ± 6,7	40–59	51,1 ± 6,33	40–60
Balance	4,7 ± 1,27	3–7	3,9 ± 0,88	3–5

Finally, participants from Poland and Slovakia were compared taking into consideration parameters describing body build and results obtained in physical fitness tests. To compare them student's t-test for independent data. The result have been presented in Table 3 (body build) and 4 (physical fitness tests).

Table 3 Evaluation of significance of somatic parameters of participants from Poland and Slovakia

Parameter	Slovakia \bar{x}	Poland \bar{x}	t	df	p
Height	182,77	181,77	0,996	58	0,323
Age	24,13	24,10	0,073	58	0,942
Weight	78,48	79,48	-0,462	58	0,646
Muscle mass	67,13	68,57	-0,901	58	0,371
TBW	58,97	59,15	-0,146	58	0,884
Bone mass	3,33	3,50	-1,911	58	0,061
FAT	11,87	12,08	-0,424	58	0,673

Table 4 Evaluation of significance of somatic parameters of special physical fitness test of participants from Poland and Slovakia.

<i>Parameter</i>	<i>Slovakia</i>	<i>Poland</i>	<i>t</i>	<i>df</i>	<i>p</i>
<i>Barbell overhead presses</i>	8,43	10,70	-2,889	58	0,005
<i>Classic barbell squat</i>	21,10	21,97	-1,051	58	0,298
<i>Pull-ups</i>	13,80	13,53	0,207	58	0,837
<i>Abs exercise from lying position</i>	27,40	26,07	1,271	58	0,209
<i>Cooper's Test</i>	2920,67	2892,67	0,543	58	0,589
<i>Standing long jump</i>	216,63	218,70	-0,966	58	0,338
<i>Shuttle running</i>	12,52	12,65	-0,723	58	0,473
<i>Plat tapping</i>	12,76	13,55	-2,918	58	0,005
<i>Sit-and-reach</i>	15,43	16,30	-0,813	58	0,419
<i>Dynamometer</i>	51,10	49,67	0,852	58	0,398
<i>Balance</i>	3,90	4,67	-2,715	58	0,009

Summary

Small differences between somatic build of Poles and Slovaks have been observed in the group. Poles have a slightly higher body mass while having greater muscle mass and skinning level. These differences are not statistically significant and may result from purposeful selection to research group.

As far as physical fitness is concerned, the results are more diversified. The Slovak group is characterized by better physical fitness. The Polish group, on the other hand, is better in barbell overhead presses, classical barbell squats and abs exercises. These differences are statistically significant in case of barbell overhead presses, speed of hand movements and balance. While speed and strength are better in the Polish Group, coordination is better in the Slovak group.

Summing up, it can be concluded that the physical fitness of participants (martial arts competitors, students of universities offering education in safety) in Poland and Slovakia does not differ significantly.

It seems that securitology should also become a significant element of physical culture sciences in respect to both the search for security in sport and using physical culture in addressing threats. The implementation of the second element, both in respect to direct influence of physical culture and indirectly, when using it as a means to an end in wider circles of society, is possible thanks to:

- *Improving physical fitness,*
- *Employing utilitarian aspects of acquired motor skills,*
- *Taking up any form of physical activity in the health aspect of security, in case of which regularity and intensity play a significant role,*
- *Organizing and administering as well as engaging in amateur and competitive sport rivalry,*
- *Strengthening the structure of a personality of a participant of physical classes,*
- *Increasing the level of social skills of participants of physical culture.*

When maintaining a rational approach to physical training, the obtained results can provide a sense of security, become a shield which will protect a person against dangers which are „charms“ of everyday life and against the disastrous effects of negative aspects of civilization. In order to obtain the right level of security, a number of utilitarian motor skills should be acquired. They can be an additional and effective manner of facing various environmental factors and can help to be ingenious in every situation. The elements of the natural world are dangerous before we come to know them better. Even in extremal cases, knowledge of elements combined with own fitness and a resource of special skills, which become available to a person as a result of being engaged in increasing the personal level of physical culture, enables us to safely survive dangerous moments.

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