

DETERMINING THE BIOMOTOR ABILITIES EFFICIENCY OF THE MILITARY ACADEMY CADETS ACCORDING TO THE NATO STANDARDS FOR PHYSICAL PREPAREDNESS

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Abstract: *The world trend of armies that are suitably prepared from a physical point of view requires a proper and well prepared sport infrastructure and conditions for regular performance of physical activities. The NATO member states place great importance on the good physical preparedness, and for that reason they use unified system of standards that follow the physical fitness of the army members. As a result of the practical applicability of the NATO standards, the Army of the Republic of Macedonia uses this system to evaluate and assess the physical fitness and preparedness of the uniformed staff, the professional soldiers and the cadets. The study analyzes only the biomotor efficiency of the cadets of the Military Academy and their success in achieving the previously determined NATO requirements for physical preparedness. The results of the study show that, generally, the cadets have achieved high level of biomotor quality on the evaluation scale, and meet most of the previously determined criteria, however, there are also cadets who failed to pass the army physical fitness and preparedness test.*

Keywords: MILITARY ACADEMY, CADETS, NATO STANDARDS FOR PHYSICAL PREPAREDNESS, DESCRIPTIVE STATISTICAL PROCEDURES

1. Introduction

In order to achieve high level of combat readiness and preparedness, every army applies a national physical activity program [2]. When we analyze and conduct this type of program we should take into consideration that this program correlates to the contemporary security trends, events and threats on national and international level. Nowadays, the main characteristic of the global and national security is the significant increase of security threats, which are resulting from terrorism, organized crime, illegal migration, drug trafficking and ethnic conflicts.

Establishing a capable, well equipped and highly professional army that will protect and preserve the safety and stability of the country from the different types of security threats is an extremely important challenge, and we should approach to it systematically and invest in it with all available means and resources (equipment, infrastructure, training, organization).

This commitment can be achieved with finding and developing suitable program that would meet the demands imposed on the seniors, professional soldiers and cadets in order to improve the general and professional working ability, which is a precondition for successful examination of the physical preparedness which is important for adequate and successful performance of the professional duties [4].

2. Statistical data and methodology used

The study is conducted with a help of a sample of respondents, a total number of 122 cadets of the Military Academy in Skopje between the ages of 19 and 23. From the total number of cadets, 32 are from the first academic year (22 males and 10 females), 27 cadets from the second academic year (20 males and 7 females), 34 cadets from the third academic year (23 males and 11 females) and 29 cadets from the fourth academic year (22 males and 7 females). A battery of three biomotor tests have been applied to the respondents [11]:

- Push-ups on a flat surface for 2 minutes (PUSH-UPS)
- Abdominal exercises in lying position with lifting the upper part of the body for 2 minutes (ABS)
- Running 3200 meters (R3200)

The results that the cadets have shown on these tests are expressed with points, according to the rulebook for maintaining and examining the physical preparedness of the army [8].

In order to achieve the standards that have been set, they should have a minimum of 60 points or 60% on each test. The final grade is actually calculated from the points average from the three sport disciplines and it is expressed in several categories:

- grade 1 – ‘insufficient’ to 60 points;

- grade 2 – ‘sufficient’ from 61 to 65 points;
- grade 3 – ‘good’ from 66 to 75 points;
- grade 4 – ‘very good’ from 76 to 85 points; and
- grade 5 – ‘excellent’ from 86 to 100 points.

The physical preparedness check test is compulsory conducted once a year, and if not passed within the given period, there is also an additional examination date.

The data from the applied variables in the study have been elaborated with the help of descriptive statistical procedures. During the data elaboration process, the average values (mean) of the biomotor tests, minimum and maximum (min., max.) for each group of respondents were calculated and classification of the results in groups was performed – frequency analysis (f%). Furthermore, with the application of the T-test of independent samples, the difference between the average values between the groups was calculated.

3. Results and discussion

The preview of the results in Table 1 show that the general physical fitness and preparedness of the cadets is relatively high because the average values of all biomotor tests are between 76 and 85 points, in other words, a grade 4. By comparing the average results of the cadets from the first, second, third and fourth academic year, we can notice that there are no significant differences between them, with the exception that there is small tendency of achieving more points during the four-year studies in the Military Academy.

Table 1. Average results (points) from the test of biomotor abilities taken by the cadets

Variable	PUSH UP		ABS		T3200m	
	points	min/max	points	min/max	points	min/max
I g.	79,29	56/100	77,59	56/100	82,37	55/100
II g.	82,66	55/100	77,96	41/100	82,66	52/100
III g.	80,67	55/100	85,44	66/100	83,55	55/100
IV g.	85,65	58/100	84,62	41/100	80,20	46/100

Table 2 shows the percentage frequency distribution of the biomotor tests results taken by the cadets, calculated with the help of frequency analysis. According to the results presented, it can be established that there is a huge difference between the number of cadets who have met the NATO criteria for physical preparedness compared to those who failed to meet the criteria.

The total span of biomotor requirements that have been met and biomotor requirements that have not been met on the PUSH UP and

ABS tests is N=115 (94%) in contrast to N=7 (6%), while on the R3200m test it is N=110 (90%) in contrast to N=12 (10%).

Table 2. Results frequency of the biomotor tests taken by the cadets

Variable	PUSH UP				ABS				R 3200m			
	I g.	II g.	III g.	IV g.	I g.	II g.	III g.	IV g.	I g.	II g.	III g.	IV g.
Points	N=32	N=27	N=34	N=29	N=32	N=27	N=34	N=29	N=32	N=27	N=34	N=29
86-100	11 34%	13 48%	13 38%	18 62%	9 28%	9 33%	17 50%	19 66%	16 50%	13 48%	16 47%	12 41%
76-85	7 22%	5 19%	5 15%	2 7%	9 28%	7 26%	11 33%	1 3%	7 22%	5 19%	8 24%	4 14%
66-75	6 19%	3 11%	11 33%	4 14%	10 31%	7 26%	6 18%	4 14%	10 31%	3 11%	4 12%	8 28%
61-65	5 16%	4 15%	3 9%	4 14%	0 0%	2 7%	0 0%	2 7%	0 0%	2 7%	3 9%	2 7%
< 60	3 9%	2 7%	2 6%	1 3%	3 9%	2 7%	0 0%	3 10%	2 6%	4 15%	3 9%	3 10%

Table 3 presents the results of the applied T-test and the significance of the average value differences among the cadets. The results analysis shows that there are certain differences between the cadets in the biomotor area that has been analyzed, but significant statistical differences are noticed only on the ABS test ($T=-2,97$ and $T=-2,63$). This data clearly shows that there is no significant improvement of the basic biomotor abilities during the studies and the changes are not in accordance with the previously established educational goals stipulated in the curricular plans and programs of the Military Academy [12].

Table 3. T-test composed of the biomotor abilities tests taken by the cadets

T-test	PUSH UP				ABS				R 3200m			
	I g.	II g.	III g.	IV g.	I g.	II g.	III g.	IV g.	I g.	II g.	III g.	IV g.
I g.												
II g.	-0,87				-0,10				-0,07			
III g.	-0,39	0,54			-2,97	-2,63			-0,32	-0,20		
IV g.	-1,68	-0,75	-1,39		-1,70	-1,48	0,47		0,59	0,56	0,82	

Physical activity and sport activities within the frames of the Military Academy are integral part of the curriculum and syllabus, a part of the combat training, and they contribute to physical development, development of the psychophysical functions and the moral of the cadets. In order to meet and fulfill the educational criteria, the whole training process that includes exercises, at the Military Academy (morning workout, classes in special physical exercise and sport, stamina workout and applied exercises, sport competitions, skiing, swimming etc.) are adjusted to the needs of the army, otherwise speaking, aim to qualify the cadets to participate and perform specific combat activities in conditions of war and peace [4].

Basically, due to the nature of the army profession, it is necessary to constantly maintain the physical and combat preparedness on high levels, because it is the only way to successfully and continuously perform the job duties [10].

The previous experiences only confirm the opinion that only physically and psychologically prepared army members can fully perform the most complex combat tasks and to adapt to different environmental working conditions [3] [9] [1] [6].

Every army that aims to be modern and advanced, alongside the military technique and equipment, must pay particular attention to the human potential and resources as important strategic means (factors) of defense. A confirmation of that is the contemporary peaceful practice of the modern armies of the world which invest massively in maintaining the high levels of the motoric and functional abilities and capacities of their national armed forces [7].

4. Conclusion

The physical exercise and sport training content of the Military Academy is a planned, systematic and permanent educational and pedagogical process that aims to develop the biomotor abilities of the cadets and to impact the process of acquiring knowledges and skills that are closely related to the performance of the army duties.

In order to provide recurrent information about the effects caused by the different types of physical exercise, the statistic analysis results of the study manifested that the physical preparedness of the cadets is to a large extent acceptable and meets the specific security requirements of the army profession, even though, during the studies, no significant quality improvement of the basic biomotor abilities of the cadets has been noticed.

To overcome these omissions, it is necessary that the experts in charge of conducting the sport activities of the Military Academy revise the previous physical exercise program and to suggest more measures and activities in order to make improvements.

5. References

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