BASIC MOTOR ABILITIES AS PREDICTORS OF MASTERING AN OBSTACLE COURSE DESIGNED TO TEST MOTOR SKILLS

Original Scientific Article

DOI: 10.5937/zurbezkrim2001047V	COBISS.RS-ID 130286081	UDK 796.012.1-057.874-057.87

Lazar Vulin[1]
Faculty of Security Studies, University of Banja Luka

Darko Paspalj
Faculty of Security Studies, University of Banja Luka

Milan Gužvica
Faculty of Security Studies, University of Banja Luka

Milenko Vojvodić
Faculty of Physical Education and Sports, University of Banja Luka

Abstract: The aim of this study was to determine the impact of motor abilities on mastering an obstacle course and define quantitative differences in basic motor abilities between the students awarded poor grades and the students awarded higher grades based on the result achieved on the obstacle course designed to test motor skills. The results of regression analysis demonstrated that motor abilities are important for mastering an obstacle course for testing motor skills and, on the basis of them, we may predict the result that defines the students' specific skills. Moreover, the results of the Student's t-test for independent samples demonstrated a statistically significant difference in the level of motor abilities between the students awarded poor grades and those awarded higher grades. The difference is defined by statistically significantly better values of the results achieved on motor tests: the maximum number of sit-ups (MPTP), stick mobility (MOKP), hand tapping (MTAP) and Cooper's 12 minute run test (MKUP), achieved by the students with higher grades, based on which we can assume that these variables are predictive of successful mastery of the obstacle course for testing motor skills. The results obtained might contribute to a better organization of training work in teaching, especially regarding an approach to improving motor abilities that dominantly have an impact on mastering an obstacle course designed to test motor skills.

Keywords: *motor abilities, impact, obstacle course, students*

1 Corresponding author: Lazar Vulin, MA, a Senior Teaching Assistant, Faculty of Security Studies, University of Banja Luka. E-mail: lazar.vulin@fbn.unibl.org.

INTRODUCTION

Regardless of the continued progress and ways of using modern technical means, technical means have not completely been able to eliminate the human factor in solving the most complex security tasks. The manner of work and duties performed by members of security agencies require that people who carry out these jobs have the necessary scope and quality of appropriate knowledge as well as appropriate characteristics and abilities. Vuckovic, Blagojevic, and Dopsaj (2011) noted that the ability to solve security jobs and tasks in a legal and efficient manner largely depends on education, equipment, engagement tactics, general and specific abilities of the individual, where motor abilities represent one of the factors that provides efficiency during the performance of certain professional tasks. Given that the modern approach to the education of members of security agencies is based on methodological principles through a concept defined by environmental conditions in which prospective employees of security agencies will perform prescribed tasks, while testing conditions should be adapted to the circumstances in which they are to be applied.

Within the Curriculum of the Faculty of Security Studies, the subject of Sports with Security Skills is studied as an elective subject which, as part of Physical Education, aims at psychosomatic training of students, through the development of motor and functional abilities, whereby educational and training treatment should enable the transformation of motor abilities and other knowledge necessary for the successful performance of security tasks. The expected outcome of the course is a complete adoption of biotic motor knowledge and development of motor and functional abilities, which will positively impact the easier acquisition of specific knowledge and skills characteristic of solving complex motor problems that prospective security personnel may encounter in his professional work. Given the fact that fulfilling such tasks can be physically very demanding, members of security agencies are required to be fully trained, so that they can successfully carry out all the tasks set before them. For this reason, the application of training methods and tools and determining the readiness of students in the assessment of specific motor abilities are directly conditioned by the structure of tasks that prospective employees of security agencies should perform. Through teaching contents, students perform psychophysical activities aimed at developing endurance, strength, speed, coordination, flexibility, agility, reactivity and balance. The program therefore encompasses those kinesiological activities that contain natural forms of movement with specific tasks and different forms of movement in conditions simulating a complex motor structure in a specific stress regime, whereby work on mastering the obstacle course was applied in the assessment of specific dexterity of students.

Matić (1978) noted that obstacle courses including running and walking or walking are interrupted by other motor tasks. Višnjić, Jovanović and Miletić (2004) consider an obstacle course to be a permanent movement composed of a large number of motor forms. According to Findak (1999), an obstacle course

means the successive performance of a certain number of physical exercises, during which natural or artificial obstacles, be it outdoor or indoor, should be overcome in the shortest possible time. Blagojević, Dopsaj and Vučković (2006), believe that an obstacle course can be used in the teaching process as a method for developing and assessing the ability of an individual to perform specific coordinationally complex movement accurately, quickly and rationally in relation to spatially and temporally changing working conditions.

Previous studies have found that the efficient completion of an obstacle course depends on the quality of training and level of motor skills development (Janković, 2015). Additionally, the studies have found that by properly performing technical and tactical tasks in completing an obstacle course, an individual comes into stressful situations in which physical fatigue increases, which may lead to physical exhaustion (Dopsaj and Janković, 2014; Janković, 2015; Janković et al., 2015), which is why motor abilities play an important role in completing an obstacle course and represent a selection criterion for the admission of students to further education institutions.

Bearing in mind the above, in addition the subject of Sports Skills in Security taught to the students at the Faculty of Security Studies through 10 lessons, how to master an obstacle course that tests motor skills was, among other activities, also taught.

When setting up the obstacles, an obstacle course was formed on the basis of motor programs that students had previously adopted, and which are believed to contribute to more efficient adoption of compulsory, more complex teaching materials provided by further education institutions. The process of adoption and training itself took place in accordance with the generally known and accepted didactic principles typical of the adoption of simple and complex motor programs. Each individual was obliged to perform all given movement actions in a specific order with submaximal and maximum intensity, in the shortest possible time, by combining different forms of running, jumping, climbing, pulling, crawling, swinging and carrying. In the spirit of the mentioned principles, before conducting tests, the students were provided clear instructions on how to overcome the set obstacles.

Given that a precondition for proper programming in teaching is timely and valid feedback on the state of students' knowledge and abilities, while previous studies have insufficiently dealt with determining the relationship of motor skills with the result achieved in performing an obstacle course, the **object** of this study are motor abilities among the students' at the Faculty of Security Studies on the one hand and the result achieved in performing the obstacle course for motor skills on the other hand. The main **aim** of this study was to determine the impact of motor abilities on the efficiency of mastering the obstacle course for testing motor skills and whether it is possible to predict the efficiency of the realization of the obstacle course for testing motor skills based on the results of students' motor skills. Based on the defined object and aim of this study, it was necessary to determine quantitative differences in basic motor

abilities between the students who were awarded poor grades and the students awarded higher grades based on the result achieved in mastering the obstacle course for testing motor skills. The basic assumption is that motor abilities will have a significant positive impact on mastering the obstacle course and that there will be a statistically significant difference in the level of motor abilities between the students with poor grades and those with higher grades/

RESEARCH METHODS

Our research was conducted in the athletic hall at the Faculty of Physical Education and Sports in Banja Luka and the FC Borac athletic stadium in Banja Luka. Testing was conducted by teachers of Special Physical Education employed at the Faculty of Security Studies. Measurement of motor abilities and motor skills was performed at the end of the first semester with the aim of determining the current situation and assessing their impact on the degree of the development of simple and complex movements in mastering the obstacle course.

Sampling

The sample consisted of 31 first-year male students at the Faculty of Security Studies, aged 19 ± 0.6 years, who were divided into two groups according to the scores on the obstacle course test. The first group consisted of 15 students who scored better on the obstacle course test with grades ranging from 7.60 to 10.00, while the second group consisted of 16 students who scored lower on the test and whose grade ranged from 5.00 to 7.50. It should be noted that all respondents had previously successfully passed a medical examination and psychological tests required for the admission to the Faculty of Security Studies and they regularly attended classes in Sports Skills in Security.

Variable sampling

A battery of seven tests was used to assess motor abilities, which is used in the process of selecting candidates for the admission to the Faculty of Security Studies: standing broad jump (MSDM) which was used to assess the explosive power of the lower extremities; the maximum number of push-ups in 10 seconds (MSKL), which was used to assess the dynamic strength of arms and shoulder girdle; the maximum number of sit-ups in 30 seconds (MPTR), which was used to assess the dynamic strength of upper body; stick mobility (MOKP), which was used to assess the coordination of the whole body; forward roll – backward roll– running (MKNZ), which was used to assess agility; hand tapping (MTAP), which was used to assess the frequency of hand movements; and the Cooper's 12 minute run test (MKUP), which was used to assess aer-

obic endurance. All variables used to assess motor abilities are characterized by the required metric characteristics. Their detailed description, the method of performance, measurement conditions and the norms of motor abilities assessment are contained in the Rulebook on the Admission of Students to the Faculty of Security Studies, University of Banja Luka. Basic motor skills and functional abilities were assessed through an obstacle course, during which the criterion variable (MPOL) was the time for completing an obstacle course expressed in seconds.

Measurement methods

The obstacle course used for testing motor skills is structured on the basis of motor tasks for assessing specific dexterity in anaerobic-lactate mode. It was carried out in a 15 x 30 meters room and consisted of the following tasks:

A – a student starts in an upright standing position with the head turned in the direction of movement,

B – rolls forward up to standing and continues to move in the given direction,

C – overcomes the low beam while running

D – after jumping off the beam, a student runs at maximum speed and while running he/she executes a diving roll over a Swedish box placed widthwise,

E - a 180-degree turn is performed followed by a backward roll,

F – a student rises up without the help of hands and turns in the direction of movement and then runs at a maximum speed to the parallel bars, which he-she crosses by alternating movement with the help of hands or by swinging legs to a sitting position with legs spread,

G - after jumping off the parallel bars, he/she runs to the three wooden ladder wall bars after which climbing up is performed at a maximum speed so that the upper appendage is at the height of the nipples on the chest (position of bent arms). Without changing the given height, the ladder is crossed by lateral movement, while the descent is done by the same procedure as climbing up.

H - after overcoming the obstacle, the distance to the next obstacle is covered by running.

I - the next obstacle (vertically placed wooden wide ladders) is overcome by passing through a gap between the bars diagonally. After passing through the last opening, the last (fourth) bar is crossed and a jump is made.

J - after landing on the ground, a student immediately starts quadrupedal walking forward with his/her back facing the ground, with the legs turned in the direction of movement and the arms behind his body. The movement is performed up to the marker, after which he/she stands up and runs toward the next obstacles.

K - four athletic hurdles placed in a row are crossed alternately by jumping over them and crawling under them, without slowing down the movement

L - lying on the side, on a longitudinally placed mat, is performed and rotation is performed by rolling around the longitudinal axis to the left side, standing up without the help of their hands,

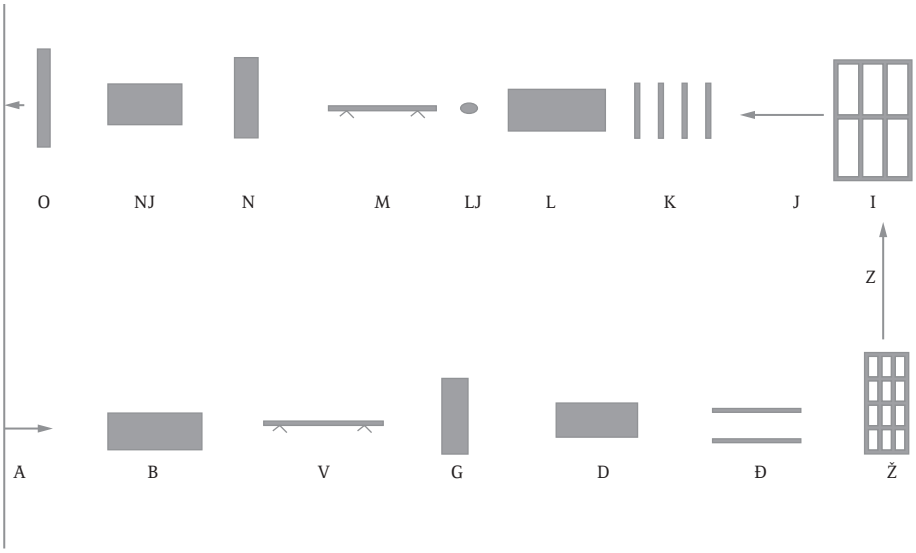
M - a 15 kg bag of sand is taken and placed behind the neck on the shoulders, after which the low balance beam is overcome by lateral movement in one direction with turns. Arriving at the end of the beam, he-she makes a turn and runs in the opposite direction. After getting off the beam, he/she puts down the bag and runs towards the next obstacle (Swedish box).

N – a student then rebounds and vaults over the Swedish box placed transversely. The jump is performed using a technique chosen by the respondent (with straddled legs, with legs together and bent into a squatting position),

O - after landing on the ground, a 180 degrees turn is performed followed by a backward roll,

P – he/she performs quadrupedal walking backwards with his/her chest turned towards the ground and passes through the side frame of the Swedish box,

Q – he/she performs a quadruped backwards as fast as possible and crosses the finish line.



(Figure 1): Sketch of an obstacle course for testing motor skills

DATA PROCESSING METHODS

Basic measures of central tendency and measures of dispersion of results are defined by an arithmetic mean (as a measure of an average value of the results achieved) and a standard deviation (as a measure of deviation of results from the mean value of the results achieved) and the values of minimum and maximum result achieved, while Kolmogorov-Smirnov test was used to test the correct distribution of the data obtained. The Student's t-test for independent samples was used to determine the differences between the individual variables observed. Correlation analysis was used to determine the correlation between predictor and criterion variables was, while regression analysis was used to determine the impact of the system of predictor variables on the criterion variable. Statistical data processing was performed on a Pentium IV PS computer, using the application statistical software program SPSS Statistics 17.0. (Hair, Anderson, Tatham, & Black, 1998).

RESULTS AND DISCUSSION

Table 1 shows the results of descriptive statistics for the whole sample of respondents. The results are well grouped and there are no significant deviations from the mean values of the results achieved, whereby it was established that all variables have a correct distribution on the basis of the results on the Kolmogorov-Smirnov test.

Table 1 *Descriptive statistical parameters of predictor and criterion variables for the whole sample of the respondents*

Variables	Minimal result	Maximum result	Arithmetic mean	Standard deviation	KS Significance
MSDM	222.00	290.00	249.00	16.31	0.60
MSKL	8.00	18.00	15.38	1.81	0.09
MPTR	28.00	39.00	33.03	2.76	0.49
MOKP	3.82	6.43	4.99	0.62	0.89
MKNZ	4.92	6.19	5.44	0.36	0.50
MTAP	44.00	67.00	54.32	4.57	0.57
MKUP	1950.00	3200.00	2749.35	274.41	0.74
MPOL	54.00	87.00	67.80	7.73	0.66

Key: MSDM – long broad jump; MSKL – the number of push-ups in 10 seconds; MPTR – the number of sit-ups in 30 seconds; MOKP – stick mobility, MKNZ – forward roll – backward roll – running; MTAP – hand tapping, MKUP – Cooper's 12 minute run test; MPOL – time taken to complete the obstacle course.

Table 2 shows the results of descriptive statistics for the first group of respondents. As at the level of the whole sample, the results are well grouped and there are no significant deviations from the mean values of the results achieved. The Kolmogorov-Smirnov test results also show that all variables have a correct distribution.

Table 2 *Descriptive statistical parameters of predictor and criterion variables for the first group of respondents*

Variables	Number of respondents	Minimum result	Maximum result	Arithmetic mean	Standard deviation	KS significance
MSDM	15	222.00	270.00	252.86	14.95	0.48
MSKL	15	13.00	18.00	15.66	1.29	0.78
MPTR	15	30.00	39.00	34.20	2.54	0.85
MOKP	15	3.82	5.78	4.69	0.52	0.48
MKNZ	15	4.94	6.02	5.48	0.39	0.42
MTAP	15	49.00	67.00	56.13	4.34	0.95
MKUP	15	2710.00	3200.00	2920.00	157.70	0.33
MPOL	15	54.00	66.00	61.53	3.27	0.96

Key: MSDM – long broad jump; MSKL – the number of push-ups in 10 seconds; MPTR – the number of sit-ups in 30 seconds; MOKP – stick mobility, MKNZ – forward roll – backward roll – running; MTAP – hand tapping, MKUP – Cooper's 12 minute run test; MPOL – time take by a student to complete the obstacle course.

Table 3 shows the results of descriptive statistics for the second group of respondents. Regarding the whole sample and the first group of respondents, the results are well grouped and there are no significant deviations from the mean values of the results achieved. The Kolmogorov-Smirnov test results, as in the previous tables, show that all variables have a correct distribution.

Table 3 *Descriptive statistical parameters of predictor and criterion variables for the second group of respondents*

Variables	Number respondents	Minimum result	Maximum result	Arithmetic mean	Standard deviation	KS significance
MSDM	16	223.00	290.00	245.37	17.15	0.91
MSKL	16	8.00	17.00	15.12	2.21	0.16
MPTR	16	28.00	37.00	31.93	2.56	0.45
MOKP	16	4.41	6.43	5.27	0.58	0.70
MKNZ	16	4.92	6.19	5.40	0.34	0.96
MTAP	16	44.00	59.00	52.62	4.22	0.39
MKUP	16	1950.00	3120.00	2589.37	266.41	0.84
MPOL	16	67.00	87.00	73.68	5.79	0.31

Key: MSDM – long broad jump; MSKL – the number of push-ups in 10 seconds; MPTR – the number of sit-ups in 30 seconds; MOKP – stick mobility, MKNZ – forward roll – backward roll – running; MTAP – hand tapping, MKUP – Cooper's 12 minute run test; MPOL – the time take to complete the obstacle course.

Table 4 shows the results of the correlation between the results achieved on the obstacle course test (MPOL) and the observed variables used to assess motor skills. As it can be seen in Table 4, statistically significant correlation at the level of p = 0.01 with the criterion variable was achieved by predictor variables MOKP and MKUP, while statistically significant correlation at the level of p = 0.05 with the criterion variable was achieved by predictor variables MTAP and MPTR. The remaining observed variables used to assess motor abilities did not achieve a statistically significant correlation with the criterion variable.

Table 4 *Results of Pearson's correlation coefficient between the time taken to complete the obstacle course and the observed variables used to assess motor abilities*

		MSDM	LMSKL	MPTR	MOKP	MKNZ	MTAP	MKUP
MPOL (time)	Correlation coefficient	-0.13	-0.26	-0.40*	0.61**	0.06	-0.41*	0.51**
	Level of significance	0.46	0.15	0.02	0.00	0.73	0.02	0.00

** Correlation is significant at the level of 0.001

* correlation is significant at the level of 0.005

Table 5 shows the parameters of the regression analysis of motor abilities and the time taken to complete the obstacle course for testing motor skills (MPOL).

Based on the results obtained, it can be concluded that the selected set of predictor variables used to assess motor skills significantly impact the level of successful completion of the obstacle course test, whereby the coefficient of multiple determination shows that 65% of the total variability of the MPOL dependent variable can be explained by the impact of the associated independent variables used to assess motor abilities, while the remaining 35% is influenced by some other factors which are not the object of this study.

Table 5 *Parameters of regression of motor abilities and the time taken to complete the obstacle course designed to test motor skills*

Correlation coefficient	Determination coefficient	Standard estimation error	F test	Statistical significance
0.80	0.65	5.20	6.17	0.00

a. Dependent variable MPOL

b. Predictors: MKUP, MSDM, MSKL, MTAP, MKNZ, MOKP, MPTP

Information on the individual impact of predictor variables used to assess motor abilities on the time taken to complete the obstacle course (MPOL) is shown in Table 6. The table shows that of all predictor variables applied, only the MOKP and MKUP variables had a statistically significant impact on the result achieved on the obstacle course test, while the MPTR variable is at the border of statistical significance.

Table 6 *Coefficients of regression of motor abilities and the time taken to complete the obstacle course*

Model	B	Nonstandardized coefficients		Standardized coefficients	t	Level of significance
		Standard error	Beta			
1	(constant)	92.68	31.23		2.96	0.00
	MSDM	0.02	0.06	0.04	0.31	0.75
	MSKL	-0.02	0.61	-0.00	-0.03	0.97
	MPTR	-0.83	0.40	-0.29	-2.05	0.05
	MOKP	5.81	1.78	0.46	3.25	0.00
	MKNZ	1.51	2.76	0.07	0.54	0.58
	MTAP	-0.13	0.23	-0.07	-0.55	0.58
	MKUP	-0.01	0.00	-0.41	-3.21	0.00

a. Dependent variable MPOL

Table 7 shows the differences between the mean values of the results obtained on the motor skills test for the first and second group of respondents. The results indicate that the first group of respondents achieved better results in six of the seven tests used to assess motor abilities, while the second group of respondents achieved better results regarding the MKNZ variable. Based on the results of the Student's t-test for independent samples, it may be concluded that the results of the subsamples differ statistically in four variables used to assess motor abilities, which are used to assess: aerobic endurance (MCP), coordination (MCP), the dynamic strength of the upper body (MPTR), and hand movement frequency (MTAP). The results demonstrated that the first and second group of respondents also differed statistically significantly in the time taken to complete the obstacle course designed to test motor skills (MPOL).

Table 7 *Values of differences between the results achieved by the first and second groups of respondents*

Variables	Group	Mean value	Standard error	F	Number of degrees of freedom	Significance (two-way)	Difference of mean values
MSDM	1	252.86	3.86	0.27	29	0.20	7.49
	2	245.37	4.28				
MSKL	1	15.66	0.33	0.95	29	0.41	0.54
	2	15.12	0.55				
MPTR	1	34.20	0.65	0.15	29	0.02	2.26
	2	31.93	0.64				
MOKP	1	4.69	0.13	0.21	29	0.00	- 0.57
	2	5.27	0.14				
MKNZ	1	5.48	0.10	1.39	29	0.53	0.08
	2	5.40	0.08				
MTAP	1	56.13	1.12	0.30	29	0.03	3.50
	2	52.62	1.05				
MKUP	1	2920.00	40.71	0.82	29	0.00	330.62
	2	2589.00	66.60				
MPOL	1	61.53	0.84	5.96	29	0.00	- 12.15
	2	73.68	1.44				

Key: MSDM – long broad jump; MSKL – the number of push-ups in 10 seconds; MPTR – the number of sit-ups in 30 seconds; MOKP – stick mobility, MKNZ – forward roll – backward roll – running; MTAP – hand tapping, MKUP – Cooper's 12 minute run test; MPOL – the time take to complete the obstacle course.

The results presented indicate that the first group of respondents had a better average time in completing the obstacle course for testing motor skills than the second group of respondents by 12.15 seconds, which leads us to assume that this is probably due to the differences in motor abilities, given that all respondents were taught according to the same curriculum, under the same circumstances and conditions, with the same methodology of teaching contents; they had the same number of classes of the same duration, including the form and structure of classes which were the same for all respondents.

Although it was expected that explosive power (especially regarding the lower body), as a determinant of success in all activities, would play a significant role in activities that require a change of rhythm and acceleration, it did not play a significant role in mastering the obstacle course. Nevertheless, the dynamic strength of the abdominal musculature played an important role in the time taken to overcome the set obstacles, because the tasks were such that they required its participation in overcoming the majority of obstacles. Previous research has found that absolute-type explosive power measures conform to the general power factor, while relative-type explosive power measures are often closer to the coordination dimensions underlying the movement structuring mechanism. It was expected that coordination would significantly affect the

time taken to overcoming obstacles on the obstacle course test. Specifically, it is generally known that coordination is extremely important for the technique of performing motor tasks. Timeliness in "attacking" obstacles, spatial-temporal orientation (the arrangement and distance of obstacles) and energy rationalization as a consequence of intermuscular and intramuscular synchronization, as elements of coordination, undoubtedly had an impact on the completion time and the efficiency of completing the obstacle course designed to test motor skills. However, it should be noted that it was observed during testing that a certain number of students spent most of their time on overcoming the low balance beam across which they had to walk back and forth carrying a load on their backs. Whether this is due to the decreased ability of dynamic balance, or perhaps a lack of physical fitness, would be interesting to determine in further research. The role of balance and its direct impact on movement efficiency is often "masked" by the level of technical-tactical knowledge, which is why weaker technical-tactical efficiency is attributed to other factors, rather than to the insufficient level of balance, especially in selected respondents whose motor abilities are not above average. Given that the construction of the obstacle course (with the distance and structure of motor tasks) required that certain actions be performed continuously, as quickly as possible with specific strength and the maximum coordination of spatial and temporal elements in terms of overcoming obstacles, where the time required for its performance initiated the load in the area of anaerobic-lactate mechanism for the production of energy required to work from the process of anaerobic glycolysis, it is justified that the variables used to assess energy potentials, coordination, and the dynamic strength of the upper body had a statistically significant impact, which substantially contributed to determining the difference in the results of motor abilities between the students who were awarded poor grades and the students awarded high grades. The data obtained are supported by the findings of the study conducted by Dopsaj and Janković (2014), Janković (2015) and Janković et al. (Janković et al., 2015), among the students at the Academy of Criminalistics and Police Studies in Belgrade, on the basis of which it was concluded that an obstacle course of specific dexterity for police officers is a valid motor task during whose performance a dominant load is provoked in the area of the anaerobic-lactate mechanism for the production of energy required to work.

CONCLUSION

This study was conducted among first-year students at the Faculty of Security Studies, University of Banja Luka, with the aim of determining the impact of motor abilities on the efficiency of mastering the obstacle course designed to assess motor skills and determining differences in motor skills between the students awarded poor grades and the students awarded high grades based on the result achieved on the obstacle course test.

Based on the results obtained, it can be concluded that motor abilities are important for mastering an obstacle course used to assess motor skills, and based on them the result can be predicted, which defines the specific agility of students, while based on the Student's t-test for independent samples, it was established that the results achieved by both groups of respondents differ in four variables used to assess motor skills that were used to assess aerobic endurance (MCP), body coordination (MCP), dynamic upper body strength (MPTR) and the frequency of arm movements (MTAP) in favor of the first group of respondents, and that a higher level of these motor abilities represents a good motor basis for a successful completion of the obstacle course designed to test motor skills.

Given the fact that the intensity of the load, the time taken to complete the obstacle course and the structure of specific tasks solved within the obstacle course test substantially simulate the working conditions to which members of security agencies are subjected in real conditions in the field, the authors believe that the use of an obstacle course as an instrument for assessing specific skills would improve the teaching process and enable continued monitoring and insight into biotic knowledge among the students at the Faculty of Security Studies. Given that another advantage of an obstacle course over other forms of work is that the correct choice of tasks can have an impact on the development of a number of motor abilities, the authors believe that the obstacle course designed to test motor skills could also be used as a training tool in the teaching process for the development and improvement of the students' specific motor skills, with an aim to improve and enhance their development at the situational level of training.

REFERENCES

Благојевић, М., Допсај, М., Вучковић, Г. (2006). *Специјално физичко образовање.* Београд: Полицијска академија.

Вишњић, Д., Јовановић, А., Милетић, К. (2004). *Теорија и методика физичког васпитања.* Аранђеловац: Виктор штампа.

Вучковић, Г; Благојевић, М; Допсај, М; (2011). *Специјално физичко образовање 2*. Београд: Криминалистичко-полицијска академија,

Допсај, М., Јанковић, Р. (2014). Валидност полигона специфичне спретности код студената Криминалистичко-полицијске академије: Метаболички и функционални показатељи физичког оптерећења. *Наука-безбедност-полиција, 19* (1), 185–199.

Јанковић, Р. (2015). Валидација полигона као теста за процену специфичне спретности код полицајаца. Необјављена докторска дисертација. Београд: Факултет спорта и физичког васпитања, Универзитета у Београду.

Janković, R., Dopsaj, M., Dimitrijević, R., Savković, M., Vučković, G., & Koropanovski, N. (2015). Validity and reliability of the test for assessment of specific physical abilities of police officers in anaerobic-lactate work regime. *Facta Universitatis – series: Physical Education and Sport*, *13* (1), 19–32.

Матић, М. (1978). Час телесног вежбања. Београд: Нип Партизан.

Правилник о упису студената на Факултет безбједносних наука број:27/3.183/2/20 од 24.02.2020. године, Факултет безбједносних наука Универзитета у Бањој Луци.

Findak, V. (1999.) *Metodika tjelesne i zdravstvene culture*. Zagreb: Školska knjiga.

Hair, J; Anderson, R; Tatham, R; & Black, W. (1998). *Multivariate data analysis* (5th ed.). New Jersey, USA: Prentice-Hall. Inc.

Paper received on: 18. 05. 2020.

Paper accepted for publishing on: 28. 12. 2020.