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CORRELATION OF BASIC AND SPECIFIC PHYSICAL ABILITIES: A STUDY ON THE OBSTACLE COURSE FOR ASSESSING SPECIFIC AGILITY OF POLICE OFFICERS

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SUMMARY

This study examines the relationship between basic physical abilities (BPA) and specific physical abilities (SPA), particularly focusing on the obstacle course for specific agility of police officers. The study involved 358 students from the University of Criminal Investigation and Police Studies in Belgrade, Serbia. A variety of tests assessed BPA, including maximal isometric force of hand finger flexors, one-repetition maximum bench press, standing long jump, sit-ups, linear running speed, the Illinois agility test, and anaerobic and aerobic endurance. Results indicated a significant correlation between these basic and specific physical abilities, as measured through the obstacle course. The study suggests that physical readiness significantly influences the performance of police-specific tasks. It underscores the importance of continuous development and assessment of both BPA and SPA, tailored to professional requirements in policing. These findings emphasize the need to consider enhancements to test batteries for assessing physical abilities at the situational level of Specialized Physical Education. They underscore the need for continuous improvements in training and testing methodologies, with the aim of further developing the professional competencies of future police officers.

Keywords: students, police training, physical fitness assessment, law enforcement education

INTRODUCTION

The job of police officers (PO) is considered extremely demanding and high-risk, as it involves various hazardous situations that could potentially be stressful (Marins et al., 2019). While contemporary policing is increasingly considered as sedentary, primarily office-based work (Strauss et al., 2021), police officers must be prepared to respond to any emergency situation at any given moment within their working hours (Bissett et al., 2012; Beck et al., 2015). Efficiency in police work, which includes tasks like rescuing civilians, overpowering suspects, or maintaining public safety, requires police officers to develop both basic and specific physical abilities (Lockie et al., 2018). Apart from the necessity of resolving professional tasks, physical abilities, together with the appropriate morphological characteristics, comprise significant factors related to the health status (Kukić et al., 2022a). Therefore, physical activity programs are crucial not only for enhancing work efficiency (Crawley et al., 2015) but also for improving health status, particularly pertaining to decreasing cardiovascular risks and body mass optimization (Strauss et al., 2021). In other words, the lack of physical activities could cause poor muscle fitness and endurance, as well as increase obesity (Kukić et al., 2019b; Kukić et al., 2020). Consequently, such condition can directly negatively impact work efficiency in resolving emergency situations, as well as become a health risk factor, potentially leading to productivity loss and sick leaves (Strating et al., 2010, Beck et al., 2015; Lockie et al., 2018).

It is precisely the ability to physically, mentally, and tactically resolve critical incidents that classifies PO as tactical personnel (Marins et al., 2019). In order to meet high professional requirements, during the selection of candidates applying to become police students (PS), health status, intellectual abilities, personality traits and the level of physical abilities are assessed (Annell et al., 2015; Koropanovski et al., 2022). The selection segment focusing on physical abilities aims to identify candidates with an appropriate initial level, thus enabling PS to improve these abilities in line with the professional needs (Dimitrijević et al., 2014). Likewise, it is extremely important to first identify the specific physical fitness components, so as to link the curriculum and physical abilities assessment with occupational tasks conducted by PO (Beck et al., 2015). Right before the end of formal education, it would be advisable to conduct a final examination of job-specific physical skills, in order to ascertain whether PS are able to perform police tasks in such a manner so as to not only keep themselves safe, but also to ensure the safety of their colleagues, as well as of the entire community (Lockie et al., 2018).Throughout their selection, education, and career, both PO and PS undergo a series of tests to assess their Basic Physical Abilities (BPA) and Specific Physical Abilities (SPA). Within BPA assessment, most commonly evaluated parameters are various types of strength and endurance, speed and agility (Dimitrijević et al., 2014; Koropanovski et al, 2022), whereas SPA assessment entails job-specific physical skills, i.e., job-related fitness test (Strating et al., 2010; Janković et al., 2015; Lockie et al., 2018).

At the University of Criminal Investigation and Police Studies (UCIPS), BPA and SPA development and evaluation occur within the specialized scientific field called Specialized

Physical Education (SPE). A standardized battery for BPA assessment is used in the selection process, consisting of seven tests: repetitive strength of arm extensors, repetitive strength of abdominal muscles, speed-strength (the Abalakow vertical jump test and standing long jump test), movement coordination, aerobic endurance, maximal isometric force of the back extensors (men), and maximal isometric hand grip force (women). Throughout the studies, BPA is assessed by means of the same tests used at the entrance exam, additionally evaluating: repetitive strength of arm flexors, isometric force of legs extensors, linear sprint performance, agility and anaerobic endurance (Janković & Dopsaj, 2022). Within the selection and evaluation of BPA, female and male students perform the same tests, with grades adjusted to the standards related to sex (Koropanovski et al., 2022). Likewise, SPA assessment test (evaluating job-specific abilities of PO) possesses predefined norms of evaluation separate for men and women. On the other hand, the same evaluation standards for both sexes are applied in expert assessment of martial arts techniques studied within SPE (Janković et al., 2015; Janković & Dopsaj, 2022).

The teaching process of SPE consists of several methodological parts (basic, advanced, and situational levels), with one of its objectives being the development of BPA and SPA, ultimately enabling efficient police work (Amanović et al., 2015). Given that physical readiness is essential for PO, it is necessary to continually evaluate the development and testing of BPA and SPA, as well as implement new methods and measurements to improve the entire system and produce better students with each generation (Strating et al., 2010; Dopsaj et al., 2012). At UCIPS, BPA assessment is an integral part of the selection process and has an eliminatory factor (Koropanovski et al., 2022). After completing each level of SPE, students must achieve defined norms for both BPA and SPA to proceed to the next level. At the situational level of SPE, SPA is assessed for both genders through the obstacle course for specific agility of PO (OCSAPO1) (Janković & Dopsaj, 2022). The tasks of OCSAPO1 include various ways of running (in a straight line and with direction changes), overcoming obstacles (skipping them and crawling under them), and solving specific motor tasks (application of martial arts techniques). Likewise, the tasks involve the specific use of weapons and police equipment, such as magazine changes, baton use, and handcuff use (Janković et al., 2015). This study aims to determine the relationship between BPA and the results of OCSAPO1 in both male and female students. It is hypothesized that there is a correlation between BPA and SPA, and that certain tests can be isolated from the BPA space to improve OCSAPO1 results. The significance of this study may lie in developing additional testing methods and programs for BPA and SPA at the situational level of SPE, leading to more effective emergency situation resolution.

METHODS

This study was conducted with the aim of determining the correlation between basic and specific physical abilities among male and female students at UCIPS. The testing was organized during the summer semester, as part of SPE classes. Initially, all participants were acquainted with the objectives and protocols of the testing. Subsequently, each participant underwent a series of tests, which were conducted with appropriate time intervals. This sequential approach not only enabled an organized and efficient evaluation process but also provided necessary rest intervals between the tests.

Entity Sample

The research involved 358 third-year students of the University of Criminal Investigation and Police Studies, Belgrade, Serbia. The total sample was divided into two groups. The first one consisted of 160 women (FPS) with the average 21.6 ± 0.8 years of age (BH = 169.6 ± 5.1 cm; BM = 63.1 ± 6.8 kg; BMI 21.9 ± 2.1 kg/m2). The second group was comprised of 198 men (MPS) with the average 21.9 ± 1.1 years of age (BH = 182.4 ± 6.7 cm; BM = 82.3 ± 9.2 kg; BMI 24.7 ± 2.3). This study was conducted in strict accordance with the ethical standards of the Helsinki Declaration (Williams, 2008).

Procedures and Variables

In the view of determining the link between basic and specific motor abilities, a total of nine tests were used (eight of them for ascertaining the BPA level and one for estimating the specific agility of police personnel).

1. The maximal isometric force of the hand finger flexors (FmaxHG) was measured by means of the standardized Hand grip test using a hand dynamometer equipped with strain gauge sensors (Physical ability test 02, UNO-LEX, NS, Serbia). The standard measurement procedure is such that the standing respondents hold a measuring device at the distance of approximately 10 cm from their bodies. The respondents performed a power grip at the measurer's signal, whereby all of their fingers were flexed around the measuring device. Out of two attempts, the better result was counted, expressed in dekaNewtons (DaN) (Ivanović et al., 2009).
2. As for the upper body muscular strength, one repetition maximum free weight bench press (BP1RM) was used. During the warm-up phase for the one repetition maximum free weight bench press test, each respondent had the freedom to choose the number of sets and repetitions with lighter weights. This flexibility allowed them to individually gauge their readiness for maximal effort. To ensure that participants were adequately prepared for the maximal lift, their performance during warm-up were closely monitored. Only after confirming these indicators of readiness, the standard protocol of progressive resistance increase was initiated, culminating in the determination of BP1RM. As far as the final result was concerned, the standard protocol of progressive resistance increase across attempts was used, until BP1RM was achieved (Schick et al., 2010). The test results were shown in kilograms.
3. The explosive strength of leg extensors was assessed by standing long jump test (SLJ). The respondents take off and land using both feet, swinging the arms and bending the knees to provide forward drive. The result pertains to the distance from the marked start line to the body part closest to it after the jump. The respondents are allowed two attempts, whereby the better score is the one counted. The result is recorded in centimeters, with a measurement precision of one centimeter (Koropanovski et al., 2020).

4. Trunk muscular power and muscular endurance were assessed via the maximal number of sit-ups that could be performed in 30 seconds (SU). The starting position implies lying on one's back with bended knees (90-degree angle), with anchored feet, palms crossed behind the head and the elbows apart. Men performed an abdominal flexion with trunk rotation, whereas women performed an abdominal flexion by moving the chest to the thighs and then returning to the initial position. The result was expressed by the number of correctly performed SUs (Kukić et al., 2022b).
5. Linear running speed is test that consists of two components: acceleration (Acc10m) and running speed (LSR10m). The running sensors are set at the start line, at the distance of 10 m, as well as at the finish line, 20 m away from the start line. The respondents wait for the signal in the standing position, immediately behind the line of the first pair of sensors. At the signal, they start running at the maximum speed. Moving through the first pair of sensors starts the chronometer, followed by the second pair of sensors set 10 meters away, running through which helps obtain the Acc10m result; i.e., the running time between the first and second pair of sensors represents acceleration. Running through the final pair of sensors deactivates the chronometer, whereby LSR10m, is obtained; i.e., the running time between the second and third pair of sensors (Janković & Dopsaj, 2022). The time was measured with photocells connected to a computer system designed for physical ability testing (Physical ability test 02, UNO-LEX, NS, Serbia), with the precision of 0.001s.
6. Running with direction changes – Illinois agility test (IAT) shown in Figure 1 was performed in such manner that respondents are firstly at the start line (Start) in a standing position. At the signal, they start running toward the first direction changing cone (TC1). Running through the first pair of sensors activates the chronometer. At TC1, they turn and run back toward the central turning cone (CC1), change direction and then run towards the fourth central turning cone (CC4). On their way back to CC1, respondents run slalom through the central markers in both directions. The final segment of the test implies running to the second direction changing cone (TC2), turning and running to the finish line (Finish). Passing through the second pair of sensors deactivates the chronometer (Orr et al., 2019). The time for this test was measured by means of the same system as LSP20m (Physical ability test 02, UNO-LEX, NS, Serbia), with the precision of 0.001s.

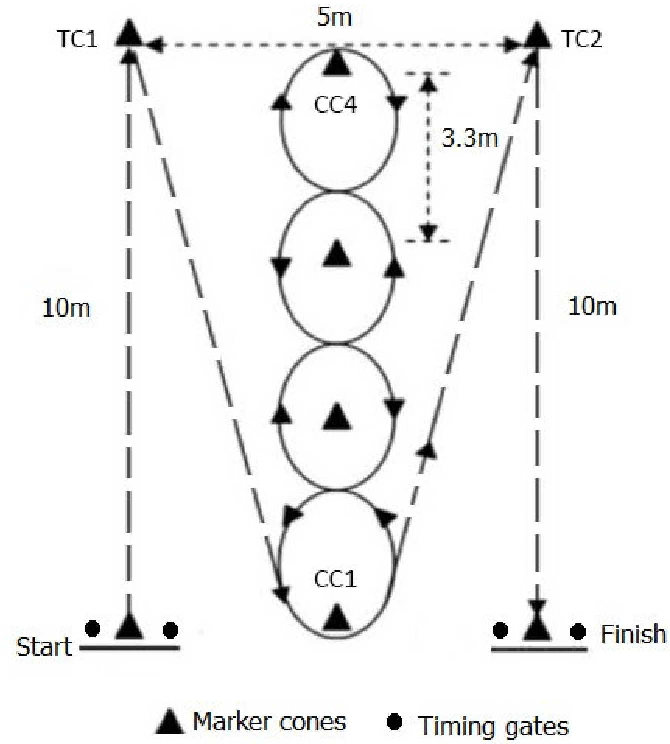

Figure 1*. Schematic display of IAT*

7. The assessment of anaerobic endurance was conducted by means of the 300-Yard Shuttle Run (ShR300y). The testing protocol is such that the participants run between two reference points set at 25 yards from one another. They start at the signal, from the standing position, run to the opposite line, touch it with their foot, turn and run back to the start line. This procedure is repeated six times (from the start to the opposite line and back) without stopping. The test is completed once the participant has finished six cycles; i.e., after running 300 yards total (Janković & Dopsaj, 2022). The time taken to complete ShR300y is measured with a stopwatch (Casio HS-70V, Tokyo, Japan), with the precision of 0,01s, expressed in seconds at the first decimal.
8. General aerobic endurance was assessed using the 12-minute Cooper running test (CT). The participants run across a 230-meter-long circular track, marked at each 5 meters, in the view of running the maximum possible distance within the period of 12 minutes. The result of CT is expressed in meters (Kukić et al., 2019a).
9. The test for assessing the specific agility of police officers - OCSAPO1 was conducted at 25x15 meters of range. Testing procedure included measurement of the time needed to complete the task as an indicator of efficiency, i.e., the level of specific motor abilities. The candidates performed the OCSAPO1 test presented in Figure 2 in accordance with the standard procedures that imply familiarizing with the tasks, mock performances, adequate recovery and test realization. The test was performed in sports equipment, and the participants were wearing a holster with a CZ 99 gun, and a spare magazine with no ammunition, baton and restraint devices (Janković et al., 2020). The performance efficiency was defined as the SSP1 realization time, expressed in seconds and measured by means of a computer system for physical ability testing PAT 02 (UNO-LEX, NS, Serbia).

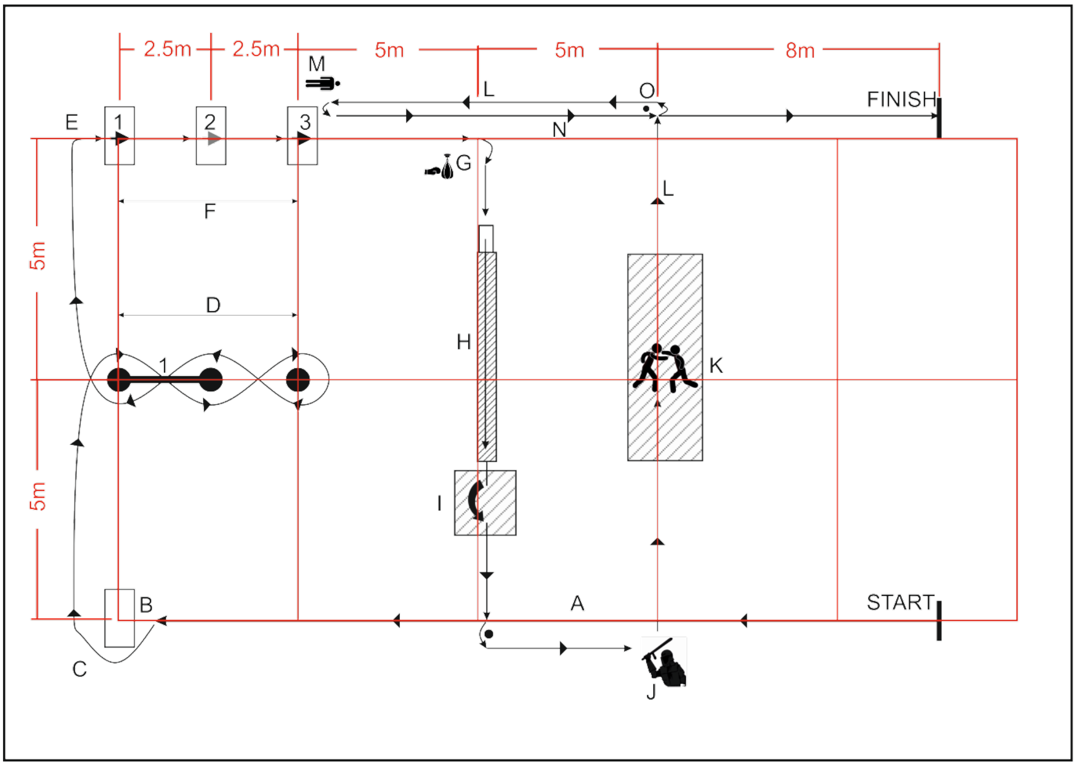

Figure 2. *Obstacle course for the assessment of specific abilities of PO: A. Start at the sound signal and sprint 20 m in a straight line; B. Stop, take cover and reach for a firearm; C. While holding the gun in the firing position, leave the cover from the left; D. Pass the cones from the outer side and crawl underneath the rope set at a height of 55 cm in marked spots. Distance between the cones is 250 cm; E. Stop and take cover, change the magazine and put the firearm back into the duty belt; F. Three-part task: 1) Cross over a 110 cm-high obstacle; 2) Crawl beneath a 55 cm-high obstacle (F'); 3) Cross over a 110 cm-high obstacle. Distance between the obstacles is 250 cm; G. Approach the focus pad (held by an assistant), throw 4 punches and 2 kicks with maximum speed and intensity; H. Climb a 70 cm-high platform and cross a 120 cm-high and 500 cm-long balance beam; I. Leap on a mat with a forward roll; J. Approach a punching bag, take a baton, hit the bag 4 times with maximum efficiency and put the baton back on the duty belt; K. Reach the mats and defend against a predetermined attack, overcome the attacker using defence tactics, control and handcuff the suspect; L. Sprint 15 m at maximum speed, with a change of direction, towards the dummy (weighing 60 kilos); M. Reach the dummy; N. Carry the dummy (or drag it – optional for women) to a marked point (10 m); O. Safely place the dummy on the ground and run through the finish line.*

Statistical analysis

In the first step of data processing, we applied descriptive statistical analysis, which involved calculating measures of central tendency, such as the arithmetic mean (Mean), measures of dispersion, such as the standard deviation (SD), minimum and maximum values (Min, Max), and measures of data distribution shape, such as the asymmetry coefficient (Skew) and tailedness coefficient (Kurt). The normality of data distribution was confirmed by the Kolmogorov–Smirnov test, indicating no significant deviation from normal distribution. Furthermore, to assess the link between the observed basic motor abilities and specific agility evaluation test results, we used the Pearson correlation analysis method and linear regression, backward method. The statistical significance of the identified relationships was established at a 95% confidence level, with a significance threshold set at $p < 0.05$. (Hair et al., 1998). Effect size analysis was conducted for correlation and regression models to quantify the strength of associations. Cohen's d values were interpreted as small (±0.2), medium (±0.5), and large (±0.8) for Pearson correlations. The R^2 coefficient in linear regression was used to assess the explained variance, with 0.04, 0.25, and 0.64 indicative of small, medium, and large effect sizes, respectively (Sullivan & Feinn, 2012). All statistical analyses were conducted using the Statistical Package SPSS Statistics for Windows, Version 20.0.

RESULTS

Basic descriptive statistics for observed variables FPS and MPS are showed in Table 1 and Table 2, respectively. Both tables enumerate mean values, standard deviations, minimum and maximum values, and coefficients of skewness and kurtosis for each variable. Table 3 displays the Pearson's correlation coefficients, indicating the relationships between BPA and OCSAPO1 results, along with their respective levels of statistical significance. Table 4 and Table 5 provide summaries of the linear regression models FPS and MPS, respectively, delineating the predictive variables significantly influencing the OCSAPO1 scores. These tables report the unstandardized and standardized coefficients, t-values, and significance levels, elucidating the predictors contributing to specific agility task performance in both groups.

Table 1. Basic descriptive indicators of the observed variables for FPS

	Mean	SD	Min	Max	Skew	Kurt
F_{max}HG (DaN)	35.5	4.1	24.8	52.1	0.247	0.912
BP_{1RM} (kg)	40.8	6.8	27.5	70.0	0.887	1.798
SLJ (cm)	177.9	14.4	150	232	1.069	1.337
SU (No)	25.1	2.6	14	32	-0.021	1.240
Acc_{10m} (s)	2.218	0.137	1.840	2.917	0.957	3.638
LSR_{10m} (s)	1.657	0.125	1.381	2.151	0.831	1.624
IAT (s)	21.048	1.265	17.555	24.042	-0.290	0.053
ShR_{300y} (s)	77.1	4.4	66.1	91.0	0.191	0.755
CT (m)	2250	199.5	1750	2910	0.562	0.355
OC_{SAPO1} (s)	94.41	8.52	71.34	118.42	-0.017	0.142

Table 2. Basic descriptive indicators of the observed variables for MPS

	Mean	SD	Min	Max	Skew	Kurt
F_{max}HG (DaN)	60.7	8.4	44.4	93	0.922	1.672
BP_{1RM} (kg)	97.9	15.9	60.0	145	0.491	-0.119
SLJ (cm)	233.3	15.7	190	285	0.546	0.765
SU (No)	28.7	2.7	21	34	0.326	0.533
Acc_{10m} (s)	1.943	0.120	1.652	2.331	0.672	0.928
LSR_{10m} (s)	1.385	0.092	1.178	1.988	1.630	1.432
IAT (s)	18.299	0.995	16.295	21.330	0.493	-0.159
ShR_{300y} (s)	66.81	3.39	57.7	79.1	0.402	0.669
CT (m)	2670.7	198.6	2150	3205	-0.077	-0.136
OC_{SAPO1} (s)	86.89	7.52	57.7	79.0	-0.065	-0.143

Table 3. Pearson correlation analysis results

		F_{max}HG	**BP_{1RM}**	**SLJ**	**SU**	**Acc_{10m}**	**LSR_{10m}**	**IAT**	**ShR_{300y}**	**CT**
FPS	OC_{SAPO1}	-0.216**	-0.288**	-0.551**	-0.337**	0.400**	0.405**	0.611**	0.532**	-0.292**
MPS	OC_{SAPO1}	-0.166*	-0.209**	-0.320**	-0.250**	0.257**	0.412**	0.357**	0.348**	-0.291**

FPS - Female Police Students; MPS - Male Police Students;

*Pearson correlation; **correlation significance at the level of 0.01; *correlation significance at the level of 0.05*

Table 4. Summary of linear regression model for FPS

Model	**R**	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
6	0.678	0.460	0.446	6.349

Coefficients

Model 6	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	43.886	18.691		2.348	0.020
BP_{1RM}	-0.137	0.078	-0.110	-1.756	0.081
SLJ	-0.122	0.047	-.207	-2.628	0.009
IAT	2.336	0.542	0.347	4.312	0.000
ShR_{300y}	0.372	0.151	0.193	2.467	0.015

Table 5. Summary of linear regression model for MPS

Model	**R**	**R^2**	**Adjusted R^2**	**Std. Error of the Estimate**
6	0.484	0.234	0.218	6.651

Coefficients

Model 6	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	57.108	14.300		3.993	0.000
BP_{1RM}	-0.078	0.030	-0.165	-2.597	0.010
IAT	1.172	0.599	0.155	1.956	0.052
LSR_{10m}	20.998	6.457	0.259	3.252	0.001
CT	-0.005	0.003	-0.130	-1.885	0.061

DISCUSSION

The primary goal of this study was to explore the potential connection between basic physical abilities and job-related fitness test outcomes. Pearson correlation analysis revealed a range of interconnectedness between OCSAPO1 assessments and all observed BPA variables in police students of both genders, ranging from r = 0.219 to 0.611 for FPS and r = 0.166 to 0.412 for MPS (Table 3). The accompanying effect size analysis highlighted that the correlations mainly fall within small to medium ranges. This underscores a varying strength in the association between BPA and specific agility performance, with some correlations nearing large effect sizes for FPS (IAT, ShR300y and SLJ). In addition, the linear regression models demonstrated moderate to substantial explained variances. The model for FPS (Table 4), accounting for 46% of the variance, identified BP1RM, SLJ, IAT, and ShR300y as key predictors. Meanwhile, the MPS model (Table 5), explaining 23.4% of the variance, highlighted BP1RM, IAT, LSR10m, and CT as significant.

Previous studies, such as Rhodes and Farenholtz (1992), have also identified a correlation between BPA and the efficiency of job-related fitness test performances. In this research, the Police Officers' Physical Ability Test was utilized for assessing SPA. The study found that 55% of the variance in the run component was linked to aerobic and anaerobic endurance, while the test's fight components moderately correlated to certain BPA (push-up, pull-up, sit-up, and grip strength). Similarly, Beck et al. (2015) found a connection between Officer Physical Ability Test and certain BPA, such as agility and aerobic capacity. Moreover, while not directly related to the overall completion time of the Officer Physical Ability test, specific BPA assessments were associated with various occupational tasks, specifically push-ups with building entry, and curl-ups with stair ascent/descent and 159 m run. In a similar vein, Lockie et al. (2018) explored the relationship between various physical fitness measures and performance in work-specific physical tasks. This study used the PT500 battery for BPA assessment, containing push-ups, sit-ups, mountain climbers, pull-ups, 201 m run, and 2.4 km run. SPA was evaluated using the work sample test battery (WSTB), consisting of 99-yard obstacle course run, body drag, chain-link fence climb, solid wall fence climb, and 500-yard run. The results indicated small-to-moderate correlational and predictive relationships between the PT500 and WSTB, implying potential benefits of muscular endurance development, upper-body pulling strength, anaerobic and aerobic capacity, which could lead to a more efficient performing of police personnel’s job-specific tasks.

The intensity, duration, and execution methods of OCSAPO1, along with specific running-related tasks, may explain both the efficiency of its completion and the BPA associated with anaerobic endurance, explosive strength, maximal running speed, and directional running. The greatest correlation in FPS were found between OCSAPO1 and IAT ($r = 0.611$, $p < 0.001$), SLJ ($r = 0.551$, $p < 0.001$), ShR300y ($r = 0.532$, $p < 0.001$), whereas the link established in MPS was between LSR10m ($r = 0.412$, $p < 0.001$), IAT ($r = 0.357$, $p < 0.001$), and ShR300y ($r = 0.348$, $p < 0.001$). Specifically, linear sprinting and directional changes may enhance efficiency, being related to the ability to manoeuvre around corners and obstacles (Lockie et al., 2018). Furthermore, the realization of OCSAPO1 leads to physical exhaustion (heart rate above 95% of individual potential and lactate concentration above 11 mmol/L). Under these conditions, especially in the anaerobic-lactate energy production zone, it's essential to perform all tasks correctly (Dopsaj & Janković, 2014), leading to an expected link between ShR300y and obstacle course results. Apart from various modes of running, the obstacle course requires PO to perform certain specific tasks incorporating martial arts elements such as: punches, fall downs, overpowering a suspect, specific weapon and equipment usage (magazine change, baton and handcuffs use), as well as a simulation of assisting the injured in the sense of body drag (Janković et al., 2015). The abovementioned tasks require various types of strength; therefore, it could be presumed that OCSAPO1 results correlate to s FmaxHG, BP1RM, SLJ and SU in the range of $r = 0.216 – 0.551$ for FPS and $r = 0.166 – 0.320$ for MPS (Table 3). Furthermore, enhanced aerobic and anaerobic endurance may positively influence focus, in order for SPE techniques to be conducted correctly, in the condition of increased fatigue and at the right time. Research conducted by Dillern et al. (2014) found a strong correlation between a general physical test index and an arresting simulation test index, pointing to the fact that a specific level of physical fitness might enhance one's ability to overcome an unyielding suspect during critical incidents. In other words, in situations where SPE techniques are required, whether for defending oneself, or subduing an opponent, higher strength and power capacity could be beneficial. Considering these findings, the similarities with previous studies suggest that aerobic capacity, anaerobic endurance, and various types of strength may influence police officers' capabilities, especially pertaining to chasing a suspect, or performing tasks of a combative nature. To rephrase it, BPA may be understood as a significant basis for performing specific police tasks within all three components of critical incidents resolution: chase, subduing and problem removal.

Primarily, the significance of developing police officers' physical fitness is linked to their overall health condition, i.e., to the idea that health-based screening may prevent job related injuries (Lonsway, 2003; Strauss et al., 2021). Secondly, it is to be found in the link to professional efficiency, since it could predict a successful job performance in critical incident resolution (Lockie et al., 2018; Janković & Dosaj, 2022). To meet professional standards, the UCIPS selection system filters out candidates with inadequate physical abilities, hence enabling the selected students to follow the SPE educational process. Furthermore, they could achieve the objective of developing their physical abilities to the projected level above the 66.6th percentile, in comparison with the general population's average (Dopsaj et al., 2007). During BPA assessment at the entrance exam, the tests candidates perform are the same for female and male candidates; however, they are later graded in accordance with the sex-specific standards. This method ensures the selection of the most physically adept students of both genders, thereby reducing potential bias due to biological differences. In other words, even when the grading system included the assessment of physical capabilities, the criteria were adjusted based on sex, ensuring that all students had an equal chance to pass the exam and receive a fair grade (Koropanovski et al., 2022). This type of evaluation (adjusted to sex), is justified when it comes to UCIPS students, i.e. future PO. During the selection process, they manage to meet the minimum fitness standards, which enables them to successfully follow and acquire the techniques prescribed by the SPE program (Dimitrijević et al, 2014). However, different work positions within the Ministry of Internal Affairs do not require the same level of physical fitness. In other words, prior to assigning a specific job role, it's crucial to ascertain candidates' BPA and SPA levels of BPA and SPA, defined in relation to the required professional competences (same job – same standard). With the standards thus established, corresponding to bone fide professional requirements, would be independent of sex or age (Strating et al., 2010; Janković et al., 2020).

Resolving problematic situations demands both physical and psychological resilience. Physiological responses, intensified by physical exertion and psychological stress, can reach significant levels. Therefore, efficiency, in addition to the level of developed BPA and SPA, may also depend on the psychological characteristics of PO (Živković et al., 2022; Amanović & Milošević, 2022). Additionally, the efficiency in managing such situations is influenced by the quality of equipment available to PO. Lastly, tactical readiness allows for the integration of all the mentioned resources, in order to respond to each individual critical incident in best possible way (Vučković et al., 2011). Effective response in stressful situations, necessitating sound judgment, hinges on adequate training. The result of this training would be enabling people who are capable of operating effectively in highly demanding circumstances and possess the necessary physical condition to perform at their best in those conditions (Crawley et al., 2015). Consequently, a holistic educational approach that integrates physical, technical-tactical, and psychological aspects is crucial in SPE training. Additionally, during the evaluation of the effects of the educational process, an appropriate battery of tests should be used to assess the corresponding BPA and SPA, which could to a certain extent predict effectiveness in problem-solving situations (Janković & Dopsaj, 2022).

CONCLUSION

This paper suggests BPA can to some extent influence the results of job-related fitness test, i.e., that suitable physical readiness at a general level could positively impact the manifestation of police officers' specific motor abilities. Furthermore, considering the structure of OCSAPO1 tasks, certain observed BPA may be presumed to greatly influence specific sections of the test. For instance, Acc10m, LSR10m, IAT, ShR300y and CT could strongly affect the efficiency of performing tasks which require various running modes; SLJ and SU may possibly influence the ability to overcome obstacles; BP1RM could affect the ability to overcome an attacker and carry a dummy, whereas FmaxHG might be a significant component affecting specific manipulations, such as changing a magazine, or handcuffing a suspect.

Given the relationship between BPA, professional efficiency, and PO's health status, refining the test batteries for situational SPE assessment is recommended. What is more, future research should focus on ascertaining the appropriate minimum fitness standards for police students in their final UCIPS years, so that their work abilities can be classified based on this criterion. Likewise, it is necessary to constantly monitor and improve the ways of training and testing, which could be conducive to future police officers gaining even more adequate professional competences.

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