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THE LEVEL COMPARISION OF SOMATIC PARAMETERS AND GENERAL PHYSICAL FITNESS OF BRATISLAVA POLICE ACADEMY MALE STUDENTS

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Abstract

The goal of our research was to compare the level of Police Academy students' somatic and motor abilities parameters with the rest of former population. This research was carried out at Police Academy in Bratislava during two academic years (2003/2004 and 2006/2007) on two different groups of male students. Differences between these two school years were created by the new structure of thematic plans (certain changes in physical education subject content and arrangement within week education time table and in easier entrance examinations from 2006/2007 year from the point of physical fitness demands). For the purpose of our monitoring we used two somatic variables (body height and body weight) and selected motor tests from the Eurofit test battery (Plate Tapping, Sit and Reach, Standing Broad Jump, Hand Grip, Sit-ups in 30s, Bent Arm Hang and Shuttle Run 10x5m). Generally we were expecting pretty higher level of future policeman physical fitness comparing with population and slight differences in somatic parameters. Based on the results we can conclude, that body height is near the same like it was at the end of 80-ies and middle of 90-ties in the population. But body weight dramatically increased in both watched groups. Our research showed, that secular positive trends in somatic parameter body height nearly stopped while body weight continues its increase relatively too quickly. The level of general motor performance of the Police Academy students is higher like population in the past. But the differences, which we were expecting, because of professional reasons, are not so high.

1. Introduction

Social changes in central and east European countries at the end of 80-ies and beginning of 90-ies coursed changes not only in social, but within school systems, too. Of course it influenced also education of policemen mainly in one

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Slovak university school the Police Academy (PA) in Bratislava that is specialized in this way. Importance of more and more difficult professional preparation of policeman is determined by reality that by quality changes level of criminal acts. Police professional preparation has many levels, is many-sided and includes a lot of various activities resulted from police service tasks (Cséfalvay, Seknička, 1995).

One of the spheres that influence and is also up to certain level decisive from the point of quality and effective service intervention belongs physical preparation. That is why new educative programs must respect not only specification of police practice, but also reflect adequate physical and physiological reflexion. Policemen must be not only reasonably educated, personally matured, but also possess good level of physical fitness. Among fundamental professional dispositions of policeman belongs make quick and right decisions, act without hesitation and inadequate aggression (Peťovský, 2001).

Characteristic feature for Policeman activity in present conditions is higher occurrence of critical situations of all kinds, from conflicted, problematical, until stress situations, including situations where is even often threaten health and life. Service interventions represent extremely challenging situations that evokes heavy physical, physiological and psychical load. That is why the natural demand in the profile sphere of police professional is high level of his physical performance and resistance that is in the field of physical education and sport presented by reaching optimal physical fitness and motor performance.

2. Material and Methods

The purpose of our article is comparison of general motor performance level of Bratislava Police Academy male students with results of Slovak population.

Research was realized in school years 2003/2004 and 2006/2007. Reason for these two years were changes in demands for entering the Police Academy. Since academic year 2006/2007 there were facilitated entrance examinations in the way that students even when they do not reach minimal standards could entrance and study on this Police Academy. From this we deduced that the level of applicants' motor performance in the academic year 2006/2007 would be lower and more similar to the normal Slovak population.

There were formed groups by 2 x 20 male applicants that entered after entrance examination this Police Academy (20 in school year 2003/2004 and 20 in school year 2006/2007).

For general somatic and motor performance evaluation we used tests - body height and body weight and motor tests from the Eurofit test battery (Moravec, et al., 1996): Plate Tapping (PT), Sit and Reach (SR), Standing Broad Jump (SBJ), Hand Grip (HG), Sit-ups in 30s (SU), Bent Arm Hang (BAH) and Shuttle Run 10x5m (10x5).

Gained values we proceeded by use of fundamental statistical characteristics. Statistical significance between our groups mutually and population were estimated by in-pair un-parametrical t-test (Man-Whitney). We were estimating significance on 1 and 5% statistical level.

3. Results and Discussions

In tables 1 and 2 are stated average measured and used values with number of individuals involved with values of t-tests and significance.

Table 1 *Comparison of differences of watched parameters between Police Academy students in school year 2003/2004 with population*

Tests	age	No	x	s	t - test	sign.
Body height [cm]	20,4	20	179,2	6,53	1,3	
	19,53	201	179,4	6,55		
Body weight [kg]	20,4	20	79	5,76	**3,643****	p<0,01
	19,53	201	71,47	9,02		
Plate tapping [s]	20,4	20	4,48	0,81	**14,81****	p<0,01
	19,53	201	8,92	1,31		
Sit and reach [cm]	20,4	20	23,6	7,82	**7,097****	p<0,01
	19,53	201	21,87	7,95		
Standing broad jump [cm]	20,4	20	228,1	16,72	0,978	
	19,53	201	223,8	18,85		
Hand grip [N]	20,4	20	545,5	53,46	0,928	
	19,53	201	530	72,4		
Sit ups [1]	20,4	20	31	5,16	1,954	
	19,53	201	28,62	5,17		
Bending arm hang [s]	20,4	20	43,75	13,31	0,429	
	19,53	201	45,65	19,24		
Shuttle run 10 x 5 m [s]	20,4	20	18,87	1,48	0,906	
	19,53	201	18,47	1,91		

Table 2 *Comparison of differences of watched parameters between Police Academy students in school year 2006/2007 with population*

Tests	age	No	x	s	t - test	sign.
Body height [cm]	19	20	180,6	4,9	0,794	
	19,53	201	179,4	6,55		
Body weight [kg]	19	20	78,95	3,93	**3,657****	p<0,01
	19,53	201	71,47	9,02		
Plate tapping [s]	19	20	5,76	0,73	**10,58****	p<0,01
	19,53	201	8,92	1,31		
Sit and reach [cm]	19	20	23,25	6,21	**7,406****	p<0,01
	19,53	201	21,87	7,95		
Standing broad jump [cm]	19	20	232,1	20,55	1,854	
	19,53	201	223,8	18,85		
Hand grip [N]	19	20	548	50,01	1,081	
	19,53	201	530	72,4		
Sit ups [1]	19	20	30,25	3,94	1,365	
	19,53	201	28,62	5,17		
Bending arm hang [s]	19	20	38,45	11,9	1,635	
	19,53	201	45,65	19,24		
Shuttle run 10 x 5 m [s]	19	20	19,97	2,2	**3,286****	p<0,01
	19,53	201	18,47	1,91		

Table 3 *Comparison of differences of watched parameters between Police Academy students in school years 2003/2004 and 2006/2007*

Tests	age	No	x	s	t - test	sing.
Body height [cm]	20,4	20	179,2	6,53	0,356	
	19	20	180,6	4,9		
Body weight [kg]	20,4	20	79	5,76	0,078	
	19	20	78,95	3,93		
Plate tapping [s]	20,4	20	4,48	0,81	**3,376****	
	19	20	5,76	0,73		p<0,01
Sit and reach [cm]	20,4	20	23,6	7,82	0,038	
	19	20	23,25	6,21		
Standing broad jump [cm]	20,4	20	228,1	16,72	0,045	
	19	20	232,1	20,55		
Hand grip [N]	20,4	20	545,5	53,46	0,028	
	19	20	548	50,01		
Sit ups [1]	20,4	20	31	5,16	0,789	
	19	20	30,25	3,94		
Bending arm hang [s]	20,4	20	43,75	13,31	1,725	
	19	20	38,45	11,9		
Shuttle run 10 x 5 m [s]	20,4	20	18,87	1,48	**2,456***	p<0,05
	19	20	19,97	2,2		

Discussions

In tables 1 and 2 are results of our involved groups. In majority tests reached policemen better results, both in school year 2003/2004 as well as 2006/2007.

Somatic parameters show that body height does not change at all, but body weight changed very much in both school years. Both group of policemen have about 8 kg more like population from the period from 20 years ago. It means that body mass increased and this change BMI on the level over average value 24. We think that this is too much, for this young people only start their studies on university. Population from period 20 years ago had BMI beyond 22. Of course the differences in the BW parameter between population and both policeman groups are on 1% significance level.

General motor performance was evaluated by 7 tests. In 5 tests reached better results students from Police Academy; it is interested, that in both school years these better results are in the same tests: plate tapping, sit and reach, standing broad jump, hand grip, and sit ups in 30 s. In both groups are differences between parameters PT and SR with the former population on 1% significance level. In other 3 tests we can watch only slight differences in favour of police groups. In tests bent arm hang and shuttle run 10 x 5 m reach former population better results. In BAH the differences are only small. Difference on 1% significance level was found between population and policeman group from the academic year 2006/2007. We think that higher level of parameter BW in groups of policeman influenced negatively these two tests results in comparison

with population.

In the table 3 can be seen differences between both groups of policemen. We can see that there are not very great differences. Somatic parameters are near the same. 5 times (PT, SR, SU, BAH and 10x5) is better the group in the school year 2003/2004, from it 2 times on 1% and 5% statistical level significance (PT and 10x5). Group from the school year 2006/2007 reach better results in 2 tests: SBJ and HG. Differences are not statistically significant.

4. Conclusions

1. In somatic parameters there were found significant differences only in body weight. Both groups of policemen have higher values like former population. Parameter body height has near the same values in all our involved groups.

2. In general motor performance tests reach groups of policemen better results comparing population in 5 tests from which two times the difference is significant on 1% statistical level. In two tests is better former population, one time the difference is on 1% statistical level significance. As a whole we can say that groups of policemen are in the level of general motor performance slightly better like former population.

3. Comparison between two groups of policemen shows only small differences in most watched parameters. Somatic parameters are near the same. In general motor performance is group from school year 2003/2004 better in 5 tests, from which two times it is statistically significant. In two tests is better group of policemen from the school year 2006/2007. But the differences are very small. As a whole we can say that watched group from the school year 2003/2004 has slightly better level of general motor performance.

4. It seems that entrance Police Academy demand until the school year 2003/2004 slightly pressed applicants in the way to improve also their individual fitness.

5. But comparison of both groups of policemen with population shows that differences are not so clear and broad like it could be expected from the point of professional needs of higher physical fitness in the police profession.

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