PHYSICAL FITNESS OF ARMY FORCES OF THE CZECH REPUBLIC

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ABSTRACT

Introduction: The activities of security forces and armed forces depend on two parameters: psychological level and physical fitness. These two components are the main parts of the selection procedure. Physical fitness is a topic to be discussed, especially in regard to security forces or armed forces (Bonneau, Brown 1995; Sörensen *et al*. 2000). Physical preparation fundamentally affects the performance of a policeman or a soldier and it is associated with stress management and service interventions or combat tasks (Gershon *et al*. 2008; Darryl 2000). This research is focused on physical fitness of the army forces. Further this research is important not only because it should result in expanding the portfolio and knowledge enriching study fields, such as the Special education of Security Bodies (SESB) and Applied Sport Education of Security Bodies (ASEBS) at the Faculty of Sports Studies of Masaryk University, but it also aspires to be of great contribution for security forces or armed forces themselves (Bugala, Reguli, Čihounková 2015; Reguli, Bugala, Vít 2016).
*Aim***:** The aim of the study is to find out the physical fitness level of the Army forces of the Czech Republic.
Methodology: Research design as descriptive and quantitative. The data of the physical fitness test was collected from the individual Army forces of the Czech Republic in the last 4 years (2015, 2016, 2017, and 2018). The quantitative data were analysed on the basis of the statistical methods. After executing the basic statistical and normality tests, we focused on ANOVA. The total number of respondents was in 776. The ratio between genders was 698:78.
*Results***:** After comparing physical fitness tests with Sit UP, Press Up, Pull Up, Stay in Pull Up, Cooper Test, and Swimming 300m over the past four years, there was no significant change in physical fitness. All disciplines had almost the same value except for the exercise with the name Stay in Pull Up. This exercise is for women. Fifteen women were tested in 2015, twenty-five women were tested in 2016, twenty-eight women were tested in 2017 and only ten women were tested in 2018. The small number of women, who tested is caused by the fact, that women are not as common in Army as men.
Conclusion: We can say that the emphasis on the physical performance in Security and Army forces is still up to date. We did not notice any significant differences between the years 2015, 2016, 2017 and 2018 tested. Thanks to this finding, we can state that there is a continuous maintenance of physical fitness in the Czech Republic's army.

Keywords: Army forces; physical fitness; physical fitness tests; security forces performance

Introduction

The activities of security forces and armed forces depend on two parameters: psychological level and physical fitness. These two components are the main parts of the selection procedure. Physical fitness is a topic to discussed, especially in regard to security forces or armed forces (Bonneau, Brown 1995; Sörensen et al. 2000). Physical preparation fundamentally affects the performance of

a policeman or a soldier and it is associated with stress management and service interventions or combat tasks (Gershon et al. 2008; Darryl 2000). Thanks to good physical preparation members of the army forces they are able to manage stress situations not only during model situations, but in real war. According to Yerkes-Dodson law optimal task performance occurs at an intermediate level of arousal. Therefore, it is necessary to monitor physical readiness so as to avoid the reduction of combat abilities in the event of an excessive burden (Vít, Kohoutková, Bugala, & Sebera, 2014).

This research is focused on physical fitness of the army forces. Further this research is important not only because it should result in expanding the portfolio and knowledge enriching study fields, such as the Special education of Security Bodies (SESB) and Applied Sport Education of Security Bodies (ASEBS) at the Faculty of Sports Studies of Masaryk University, but it also aspires to be of great contribution for security forces or armed forces themselves (Bugala, Reguli, Čihounková 2015; Reguli, Bugala, Vít 2016).

Aim: The aim of the study is to find out the physical fitness level of the Army forces of the Czech Republic.

Methodology

The work is conceived as descriptive and quantitative. For data collection we used the internal physical fitness testing of the Army forces of the Czech Republic in the last 4 years (2015, 2016, 2017, and 2018). Physical fitness tests consist of: Sit Up, Press Up, Pull Up, Stay in Pull Up, Cooper test and Swimming 300 m. All tests were carried out according to the internal methodology of the Army of the Czech Republic (Czech Army, 2019). The data were generated into the Microsoft Office Excel spreadsheet. Afterwards the data were transferred into the STATISTICA software where they were analysed. Then, as the very first step, we used descriptive statistics in order to detect extreme values and describe the research sample. We chose statistical significance α 0.05. Then, when testing the normality with $p \leq \alpha$, we did not confirm the normality of the data. Therefore, based on these results, we reject the hypothesis of the normality for all the questions. These facts have shown that it is necessary to use nonparametric tests in further statistical analyses. After executing the basic statistical and normality tests, we focused on ANOVA. We have rejected hypotheses about data normality, and therefore we have chosen the nonparametric Kruskal-Wallisova test for the independent variables. We have chosen the independent variables because we calculated with the fluctuations, which was about 15%.

Research sample: The research sample was 777 respondents it total and it is to be found further specified in Table 1. The average age was 40 years. The ratio between genders was 698:78, as you can see in Table 2. We focused on members of Army of the Czech Republic.

Table 1 *Basic characteristics of the research sample*

	Study sample N	Average	Median	Minimum	Maximum	Standard deviation
Age	776	40,32	40	22	60	6,320

Table 2 *Gender ratio*

Gender	Frequency	Cumulative frequency	Percentage	Cumulative frequency in percentage value
Male	698	698	89,948	89,948
Female	78	776	10,051	100,000
MD	0	776	0,000	100,000

Results

We conducted and compared individual physical tests: Sit UP, Press Up, Pull Up, Stay in Pull Up, Cooper Test, and Swimming 300m for years 2015, 2016, 2017 and 2018. Using boxplot we illustrate the evolution of discipline over the years. An overview of the average results over four years is shown in Table 3.

Table 3 *Overview of the average results for four years*

Variable	Descriptive Statistics of the disciplines			
	Valid N	Mean	Median	Std.Dev.
Sit-Up	1122	41,829	41,000	7,5747
Press Up	895	26,619	27,000	5,5997
Pull Ub	1709	11,229	12,000	2,5504
Stay in Pull Up (s)	78	0,368	0,355	0,1762
Cooper test (m)	2604	2602,302	2600,000	327,5088
Swimming 300 m (min)	460	5,840	6,080	0,8265

For comparative discipline we chose non-parametric Kruskal-Wallis test for independent variables. Single results for years tested are presented in boxplot number 1, 2, 3, 4, 5, and 6. There are we can see values and their comparison. On the boxplot number 4 called Stay in Pull UP, at the first there are view the main differences. This discipline is determined for women. It is a replacement for Pull Up. But these differences are not significant because 15 women were tested in 2015, 25 women were tested in 2016, 28 women were tested in 2017, 28 women were tested in 2017 and only 10 women were tested in 2018. For this reason, there have been statistic changes, as you can see on Boxplot number. 4. The small number of women, who tested is caused by the fact, that women are not as common in Army as men.

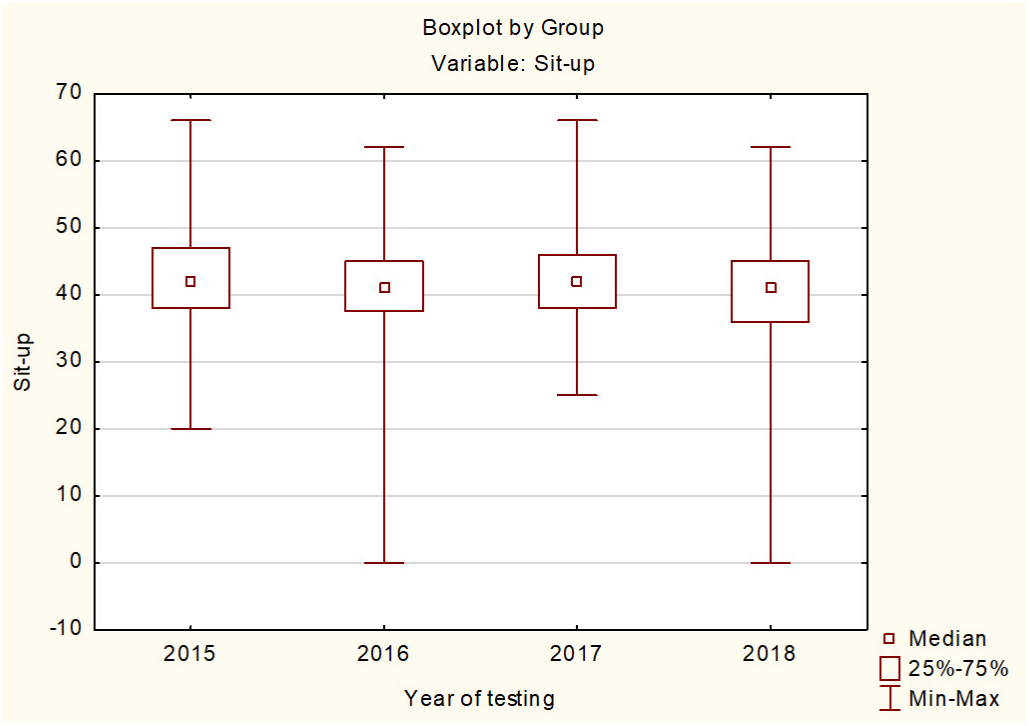

Figure 1 *Boxplot 1 Sit-up*

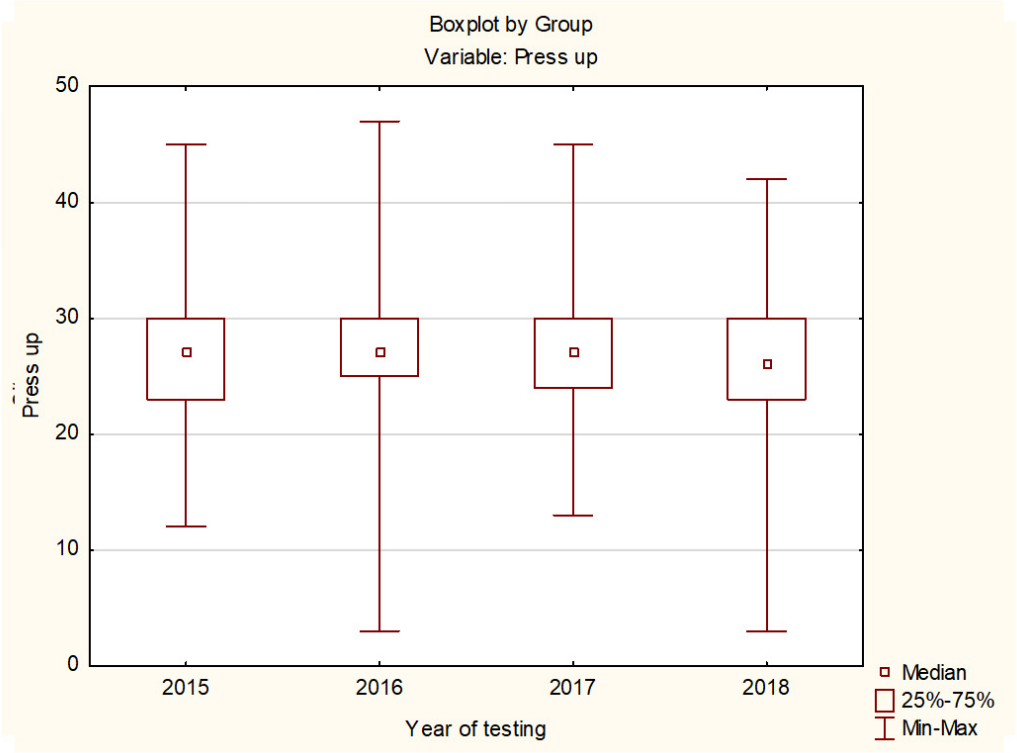

Figure 2 *Boxplot 2 Press Up*

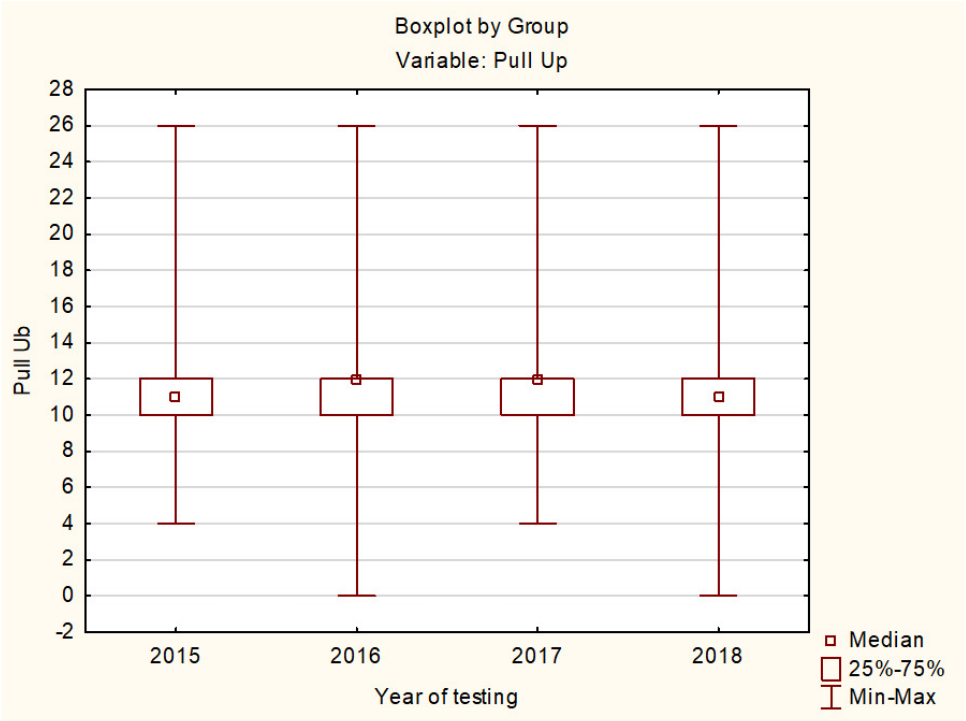

Figure 3 *Boxplot 3 Pull Up*

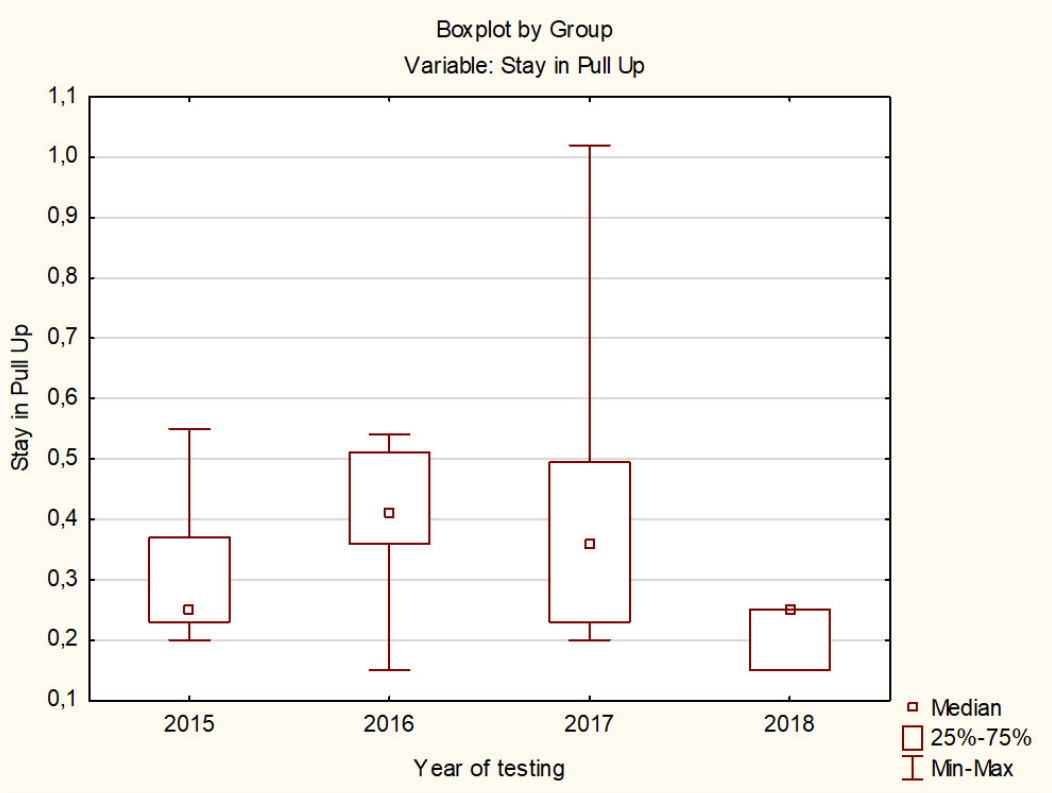

Figure 4 *Boxplot 4 Stay in Pull Up*

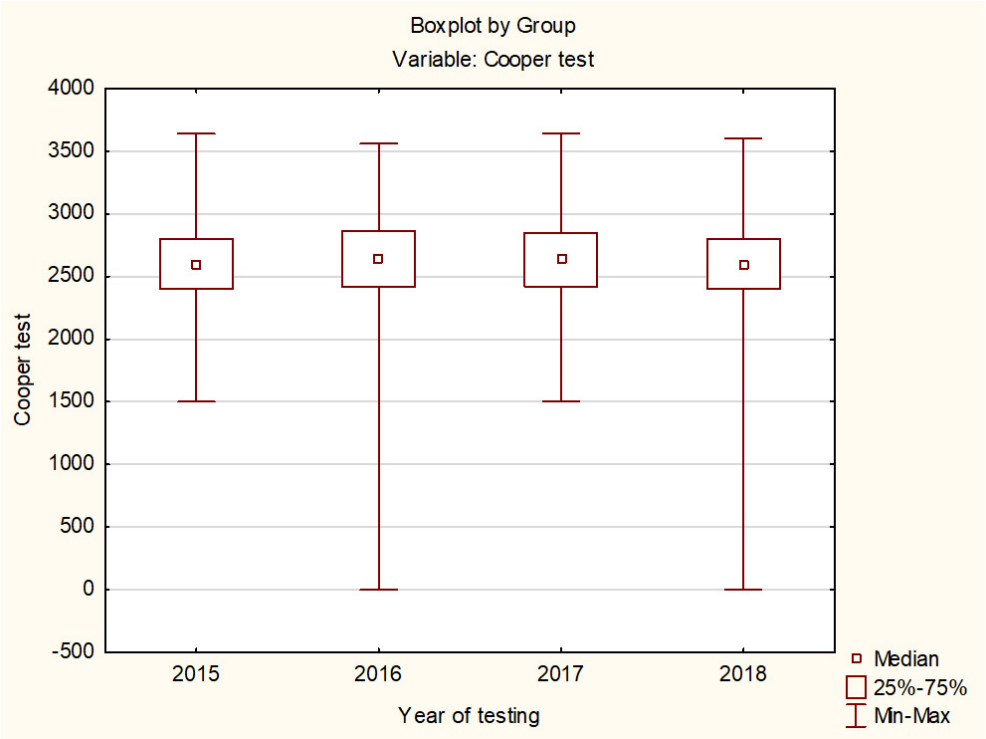

Figure 5 *Boxplot 5 Cooper test*

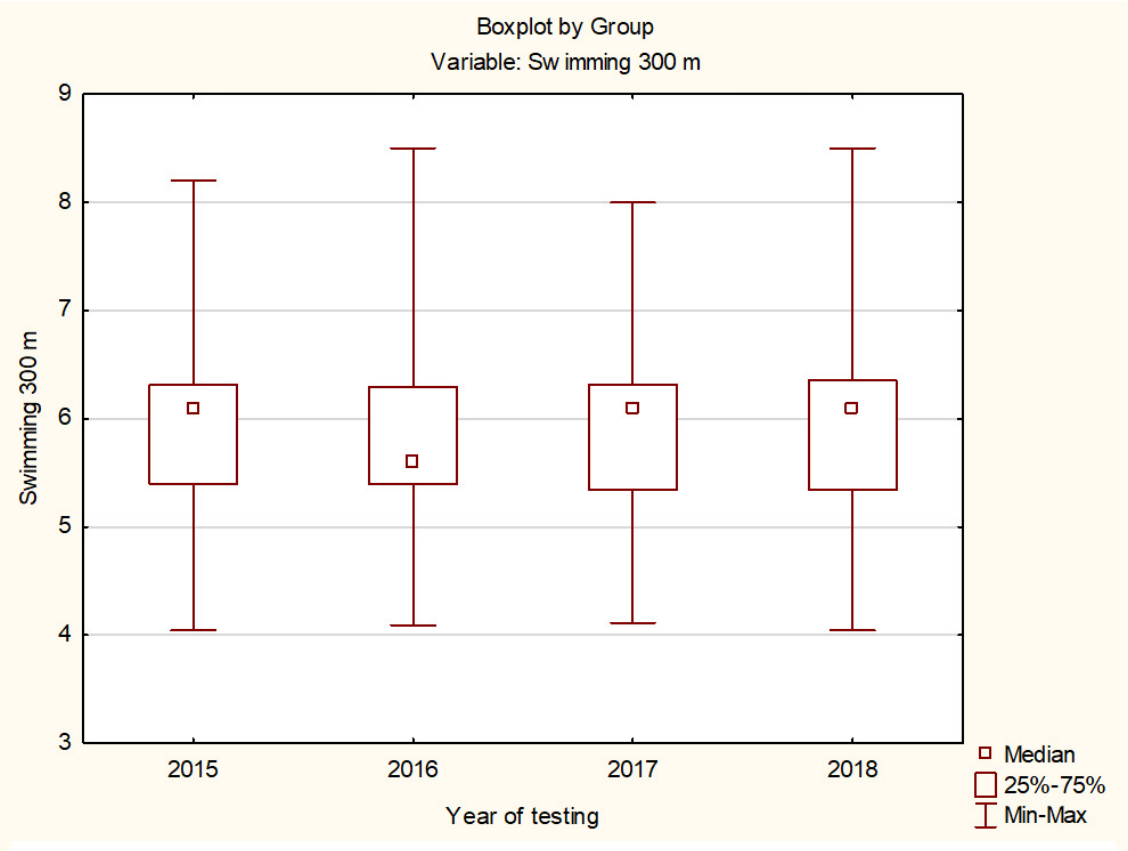

Figure 6 *Boxplot 6 Swimming 300 m*

Discussion

We can say that the emphasis on the physical performance in Security and Army forces is still up to date. The results are also confirmed by the fact that soldiers deal with physical activity and martial arts in their leisure time (Cihounkova & Kordik, 2015). We did not notice any significant differences between the years 2015, 2016, 2017 and 2018 tested. Thanks to this finding, we can state that there is a continuous maintenance of physical fitness in the Army of the Czech Republic. These results are positive, but it is necessary to constantly solve this problem and analyse it scientifically. As a result, any changes can be described and explained. The scientific approach is crucial and all findings should be based on scientific results and evidence (Reguli, 2018).

Conclusion

Physical fitness is very important for performance in the army profession. Being physically capable allows you to better manage stressful situations and perform tactical and combat tasks. The research presents results that clearly show that the soldiers maintain their physical level. This army approach is right. Physical fitness should still be a priority for the Army of the Czech Republic.

References

Behavioral Outcomes Associated With Perceived Work Stress in Police Officers, "Criminal Justice and Behavior", vol. 36, no. 3 (36), pp. 275–289.

Bonneau J., Brown J. (1995), *Physical ability, fitness and police work*, "Journal of Clinical Forensic Medicine", no. 2, pp. 157–164.

Bugala M., Reguli Z., Vít M., (2015*), Educational background of security bodies identification in self-defence: study programme Special Education of Security Bodies,* Proceedings of the 1st World

Congress on Health and Martial Arts in Interdisciplinary Approach, HMA 2015, Archives of Budo, pp. 79–84.

Cihounkova, J., & Kordik, T. (2015). A relationship between the fourth Rapid Deployment Brigade soldiers in the Army of the Czech Republic and combat sports or martial arts. *Ido Movement for Culture. Journal of Martial Arts Anthropology*, (15), 54–57. https://doi.org/10.14589/ido.15.3.8

Gregory S. A., Darryl B, P., (2000), *Predicting shooting scores from physical performance data*, "An International Journal of Police Strategies & Management", vol. 23, no. 4, pp. 525–537.

Gershon M., Barocas B., Canton A., Xianbin L., Vlahov D., (2008), *Mental, Physical, and Behavioral Outcomes Associated With Perceived Work Stress in Police Officers*, "Criminal Justice and Behavior", vol. 36, pp. 275–289.

Reguli, Z. (2018). Evolution of approaches in self-defence: from belief through experience to evidence-based self-defence training. *ARCHIVES OF BUDO*, (14), 345–350.

Reguli Z., Bugala M., Vít., (2016), *Educational Background of Security Bodies Identification in the Study Programme of Applied Sport Education of Security Bodies,* Proceedings of the 10th International Conference on Kinanthropology "Sport and Quality of Life", pp. 498–505.

Sörensen L., Smolander J., Louhevaara V., Korhonen O., Oja P. (2000), *Physical Activity, Fitness and Body Composition of Finnish Police Officers: A 15-year Follow-up Study*, "Occupational Medicine", vol. 50, no. 1, 1 January 2000, pp. 3–10.

Vít, M., Kohoutková, J., Bugala, M., & Sebera, M. (2014). *Evaluation of stress conditions in self-defence scenario training*. *3rd World Scientific Congress of Combat Sports and Martial Arts*, *2014.*