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ARTÍCULO DE INVESTIGACIÓN

Construir la propia identidad y la resiliencia social en espacios de género

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Resumen. Este estudio examina cómo los programas estructurados de autoentrenamiento físico contribuyen al desarrollo de la resiliencia, la identidad y la adaptación social entre cadetes femeninas en instituciones dominadas por hombres. Mediante la integración de métodos de fitness basados en Crossfit dentro de las academias de las fuerzas del orden, la investigación evalúa cómo un entrenamiento consistente y sensible al género mejora no sólo la resistencia física y la fuerza, sino también la preparación psicológica y la integración social. Los resultados demuestran que el autoentrenamiento físico desempeña un papel fundamental a la hora de mitigar la presión institucional, reforzar la cohesión del grupo y favorecer el equilibrio emocional en un entorno de alta exigencia. El enfoque de género adoptado en el estudio aborda los desequilibrios sistémicos y propone un marco sostenible para mejorar la adaptación social, la afirmación de la identidad y el bienestar en el contexto de la cultura de formación de las fuerzas del orden.

Palabras clave: academias MIA, cadetes femeninas, entrenamiento físico profesional, resistencia física general, resistencia de fuerza y velocidad.

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Building self identity and social resilience in gendered spaces

Abstract. This study examines how structured physical self-training programs contribute to the development of resilience, identity, and social adaptation among female cadets in male-dominated institutions. By integrating Crossfit-based fitness methods within law enforcement academies, the research evaluates how consistent and gender-responsive training improves not only physical endurance and strength but also psychological readiness and social integration. The findings demonstrate that physical self-practice plays a pivotal role in mitigating institutional pressure, reinforcing group cohesion, and supporting emotional balance in a high-demand environment. The gender approach adopted in the study addresses systemic imbalances and proposes a sustainable framework for improving social adaptation, identity affirmation, and well-being in the context of law enforcement training culture.

Key words: MIA academies, female cadets, professional physical training, general physical endurance, strength and speed endurance.

INTRODUCTION

A personnel training for law enforcement agencies in educational institutions is mainly based on principles of masculinity mostly focused on male students' specific characteristics. An educational process in those institutions is organized in the same way as in civil higher education institutions; however, there can be observed such differences as a more strict routine and a focus on physical and psychological training of cadets (Makeeva et al., 2018a; Aniskova, 2020; Makeeva et al., 2020; Panova et al., 2024). Modern research in the field considers two approaches, such as a gender-role approach and a gender approach. The gender-role approach contributes to gender distinction: activities are divided between male and female, whereas the gender approach aims at adapting the educational system in accordance with psychological differences between male and female, as well as introducing new means and methods leading to the physical fitness improvement based on individual characteristics of a person (Grier et al., 2015; Kim & Gerber, 2019; Shmeleva et al., 2019; Raspopova et al., 2020; Panova et al., 2021). Besides, regular monitoring and assessment of the results with the psychological support of professors helps to discover problems and adjust the educational approach as well as to solve successfully adaptation problems caused by stress emerging during the educational physical training process (Voloskov & Voloskov, 2017; Kodzokov, 2018; Bonkalo et al., 2021; Kustov & Dudchik, 2021).

Due to the fact that the first approach has the priority at the stage of professional activity but not at the stage of professional training, our primary concern is the gender approach, which can help influence social norms and cultural values as well as health and wellbeing, create equitable and judicious conditions of individual fulfillment regardless of the gender, this approach also allows us to shape certain patterns of behavior, to meet expectations, to give opportunities, to design programs which address needs and interests of the most vulnerable gender-based groups, in our case – female, who are physically weaker than male due to anatomical and physiological features of the female body.

In the process of professional adaptation of female cadets in the MIA academies two main aspects are considered: adaptation to the service and to the educational process, since training condi-

tions in the predominantly male environment do not meet expectations of female cadets, on the one hand, and those of the educational institutions, on the other hand (Kuznetsova, 2016; Makeeva et al., 2018b). This is particularly true for physical training issues which have a significant impact on the professional readiness of future MIA employees. Therefore, the search for appropriate training methods and techniques supplementing the core physical training program is an urgent task and requires a complex approach which takes into consideration female morphological and functional capabilities (Makeeva et al., 2020; Kustov & Dudchik, 2021).

As for the adaptation of educational standards and requirements to the level which corresponds to real female capabilities, they are set by the Ministry and followed by universities. Nevertheless, unlike civil universities where the physical training requirements are set once and are not changed annually, in MIA academies the requirements rise progressively from year to year which create hardships especially for female cadets. One of the reasons is the fact that female physical maturity is reached by the age of 16–18 and is accompanied by the completion of growth and other aspects which can provide a successful improvement of physical training. Meanwhile, psychological and emotional development can continue and vary due to individual characteristics. Besides, slowing down of natural processes of physical development gives precedence to such a training system which can contribute to the increase in physical readiness for work and a relevant approach leading to the achievement of such a goal as: an individual training program in accordance with physical capabilities and needs which can guarantee more comfortable conditions for education (Haddock et al., 2016; Ukrainsky & Vlasenko, 2017; Panova et al., 2021).

The **objective** of the proposed physical self-training program is to improve the physical fitness of female cadets by means of crossfit performing in the process of physical self-practice within the whole period of studying in the academy.

METHODS AND ORGANIZATION OF THE RESEARCH

The goal was achieved by using fitness technology based on the Crossfit techniques implemented by female cadets in the process of self-practice supported by trainers counseling. The assessment of the result dynamics was carried out by tests such as 1000 м running, shuttle run, complex strength exercise (COE).

In the experiment a group of female cadets (18 people), specializing in "Law enforcement, training profile – Traffic police", and a reference group of cadets (18 people), specializing in "Law enforcement, training profile – Investigation", have participated.

The experimental group training process was based on the program including crossfit techniques such as cardiovascular exercises, basic strength exercises from weightlifting and gymnastics, as well as some exercises from martial arts practice.

RESULTS AND DISCUSSION

The tests results were processed by statistical analysis methods using the StatTechv. 4.8.0 (developer -– "Statech", LLC, Russia). The quantitative indicators were evaluated for compliance with normal distribution using the Shapiro–Wilk test.

The quantitative indicators, whose sample distribution was consistent with normal rates, were described by means of arithmetic averages (M) and standard deviations (SD). Limits of 95% confidence interval (95% DI) were given as a representativeness measure for the average values.

In the absence of normal distribution, quantitative data were described by means of median (Me) and lower and upper quartiles (Q1 – Q3).

One-way analysis of variance with repeated measurements was used to compare three or more related groups on a basis of a normally distributed quantitative sign. The statistical significance of changes in the indicator in dynamics was estimated by Fischer's F. The posteriori analysis was carried out using the pair Student's t-test with Holm's correction.

The non-parametric Friedman's test with a posteriori comparison by means of the Conover–Iman's test with Holm's correction was used to compare three or more dependent samples, whose distribution was different from normal. Differences were considered statistically significant at $p < 0,05$. 1000 m running shows the body's ability to resist fatigue when performing the proposed workload, thereby participating in the regulation of metabolic processes, involving large and small muscle groups, strengthening joints and ligaments.

The result dynamics of female cadets' tests in 1000 м running, speed and strength endurance is presented in Tables 1, 2 and 3, both for the experimental and reference groups.

TABLE 1. Comparative analysis of the 1000 m running dynamics between the experimental and reference groups during the training period

Groups	Testing stages							
	Year 1, semester 2		Year 2, semester 4		Year 3, semester 6		Year 4, semester 8	
	Me	$Q_1 – Q_3$	Me	$Q_1 – Q_3$	Me	$Q_1 – Q_3$	Me	$Q_1 – Q_3$
Experimental (n=18)	4,34	4,25 – 4,41	4,22	4,16 – 4,29	4,09	4,02 – 4,15	4,08	3,99 – 4,11
Reference (n=18)	4,30	4,25 – 4,34	4,17	4,15 – 4,22	4,11	4,04 – 4,18	4,12	4,05 – 4,18

A dynamics analysis of the female cadets' results in the experimental group in the 1000 m running based on the Friedman's test shows statistically significant changes ($p < 0,001$). Analysis by years has shown that the group has had a positive dynamics of the results, which corresponds to the requirements of the academy. Meanwhile, the increase in the results of the second year of study compared to that one of the first year constitutes 2,76% with a quartile spread from 4,25 to 4,4 (at $p = 0,039$). The third year dynamics compared to the second year makes up 3,08% with the spread from 4,16 to 4,29, and the fourth year dynamics compared to the third year makes up 0,2% with the spread 4,02 – 4,15.

Despite the fact that in Year 4 the increase is minimal, the spread of the results between the cadets has decreased significantly, which indicates an increase in their homogeneity within the group 4,02 – 4,15.

A dynamics analysis of the results related to the baseline (year 1, semester 2) shows statistically significant differences at $p < 0,001$ for year 3 semester 4 and year 4 semester 8. Thus, the physical

condition of female cadets shows a steady trend of improvement of the running time from year to year at all stages of observation.

In the reference group the change has also shown statistically significant changes at all stages of observation. However, in the experimental group a more pronounced and stable dynamics of improvement in the running results compared to the reference group can be observed. In particular, the median in the experimental group has decreased significantly at all stages of the experiment. This may indicate more effective training methods, including the use of Crossfit techniques in the self-training process of female cadets in the experimental group.

Performing the 10x10 shuttle run is a way of evaluating the development of the complex physical qualities: leg muscles strength when running, coordination and sense of balance when changing direction of movement, maintaining speed within the 10 m section, and high-speed endurance when being repeated multiple times.

In shuttle running, which reflects the level of speed endurance, the experimental and reference group dynamics is characterized by statistically significant changes ($p < 0.001$) according to the Fisher's test with repeated measurements. The comparative analysis between the groups presented in the Table 2 shows statistically significant differences between them in favour of the experimental group. The group has shown a significant decrease of time taken to complete the test in the second and fourth stages of training compared with the reference group.

TABLE 2. Comparative analysis of the speed endurance dynamics between the experimental and reference groups during the training period

Groups	Year 1, semester 2	Year 2, semester 4	Year 3, semester 6	Year 4, semester 8
Experimental	28,61 ± 0,30	28,42 ±0,32	28,21 ± 0,31	27,95 ± 0,29
Reference	28,66 ± 0,50	28,47 ± 0,29	28,19 ± 0,53	28,24 ± 0,39
p	p > 0,05	p > 0,05	p > 0,05	**p < 0,05**

Although the experimental group has shown worse results in Year 3 than the reference group, the total group data are more positive, which indicates a lower standard deviation rate in the experimental group.

The use of complex strength exercise in physical training allows us to combine various types of physical workload in one exercise, which characterizes the level of development of different groups of muscles, whereas performing tasks without interruption causes active cardiovascular and respiratory system reaction. Therefore, this test is used as a check-up exercise in assessing the overall level of physical readiness for professional activity.

The analysis of complex strength exercise has shown dynamics in the experimental group results with statistically significant changes ($p < 0,001$) based on Fisher's test with repeated measurements. The results analysis in the reference group has shown statistically significant changes ($p = 0,001$) according to Friedman's test. The comparative analysis of the results between the groups is presented in the Table 3.

TABLE 3. Comparative analysis of the strength endurance dynamics between the experimental and reference groups during the training period

Groups	Year 1, semester 2	Year 2, semester 4	Year 3, semester 6	Year 4, semester 8
Experimental	31,72 ± 1,81	32,39 ± 1,85	34,05 ± 1,43	35,27 ±1,84
Reference	31,83 ± 2,61	33,05 ± 1,55	34 ± 2,08	33,56 ± 1,38
p	p > 0,05	p > 0,05	p > 0,05	**p < 0,01**

Performed analysis indicates a growing dynamics of results in the experimental group and an unsustainable trend with a broad spread of results in the reference group. Taking into account the fact that the female cadets' level of physical fitness is higher comparing with the level of female civil university students, it is a difficult task to achieve the result growth. However, physical training is a key point for future female employees in law enforcement agencies in the perspective. Therefore, the analysis of the obtained data has highlighted the need not only for physical training as a part of cadets' educational program (4 hours a week), but also for systematical practice during the whole academic year as well as the entire period of study. In addition, a competent approach to physical training is vital for successful performance of professional duties and healthcare in the long run.

Our previous research indicates that systematic physical training leads to saving in the functioning of the cardiovascular system, reduction of mental energy expenditure (Makeeva et al., 2018b). But the crucial part of our research is a broader aspect revealing the professional significance of systematic exercise and especially self-practicing for a future MIA employee as far as it plays an important social (corresponding to the demands of the society), diagnostic (highlighting strength and weaknesses of the physical fitness), developmental (motivating activity) and educational (positive approach to healthcare) role (Osipov et al., 2017; Kyröläinen et al., 2018; Main et al., 2023).

CONCLUSION

Generally, the growth in endurance rates in the groups studied might be considered as positive dynamics. At the same time in the experimental group the dynamics observed has had a more significant impact in the perspective of the efficient professional activity on such thing as an increased level of activity and readiness for work, which in its turn leads to the ergothropic effect of the proposed physical workload, which enhances metabolism and increases efficiency as well as contributes to a more successful adaptation to the environment, including service activities. In addition, the proposed workload was performed in accordance with female cadets' capabilities without any psychological pressure increasing motivation to the systematic exercise. And hence in this regard the achieved physical fitness meets not only the female cadets' needs but also corresponds to the requirements as well as provides the basis of personality structure formation according to the requirements of professional activity.

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