

Comparative analysis of the motivation of the military academy students in different years of study towards their own physical improvement

YEVHEN ANOHIN¹, SERHII ROMANCHUK², IRYNA TYCHYNA³, OREST LESKO⁴, TETIANA DUKH⁵, IHOR SHLYAMAR⁶, IHOR LOTOTSKYI⁷

^{1,2,4,7} Department of physical education, special physical training and sport, National Army Academy named after Hetman Petro Sahaidachnyi, Lviv, UKRAINE

³ Department of Military special language preparation, Military Institute of Taras Shevchenko National University of Kyiv, Kyiv, UKRAINE

⁵ Department of Athletics, Lviv state university of physical culture named after Ivan Boberskyi

⁶ Physical Training Service of the Command of the Land Forces of the Armed Forces of Ukraine, Kyiv, UKRAINE

Published online: August 31, 2022

(Accepted for publication August 15, 2022)

DOI:10.7752/jpes.2022.08233

Abstract

In recent years, the motivation of cadets of higher military educational institutions has significantly decreased towards their own physical improvement. This leads to a deterioration in physical fitness, functional status, as a result of professional training of cadets and, in general, therefore, a decrease in readiness for combat missions is noticed. The purpose of the study is the dynamics of the dominant motives of higher military educational institutions cadets and the level of their motivation for their own physical improvement. **Materials and methods.** The study was conducted at the National Ground Forces Academy. 348 people took part in the survey in 2010, and 364 in 2020. **Results.** According to the results of the research, we compiled hierarchical structures of motivation of academy cadets to their own physical improvement of both years of study. The motivation of cadets who were studied in 2010 is expressed by the formula $PR_{2-3}P_5R_{0-1}H_0$, in 2020 – $PR_{2-3}P_5R_{1-2}H_{0-1}$. **Conclusions.** Both formulas show that the motivation of cadets to their own physical improvement is at an average level. However, the analysis of the relationship and sequence of motives in their hierarchical structure suggests a negative trend of motivation of cadets of different years of study to physical improvement, and the difficulty in ensuring the proper level of efficiency of the educational process of their physical improvement.

Key words: analysis, cadets, motivation, values, regress.

Introduction

The topicality of finding ways to form a value attitude to physical education is due to insufficient level of physical fitness and physical activity of officers, and unsatisfactory organization of the process of physical self-improvement [6, 7], despite annual orders and directives issued by the Armed Forces of Ukraine.

In the scientific works of I.Ovcharuk (2008), O. Olkhovy (2012), S. Romanchuk (2013), it is noted that during the period of study at the university cadets do not form a personal interest in regular exercise, i.e. the value attitude to physical improvement [5, 6, 7, 13]. As a result, immediately after graduation, the officers' physical activity decreases, and after 2-3 months the physical fitness of lieutenants is assessed as "unsatisfactory" and "satisfactory", 10% and 40% accordingly [1, 11]. Consequently, in order to achieve the goal of physical training in higher military educational institutions, primarily, it is necessary to form students' motivational and value attitude to physical improvement. The scientists Y.Borodin and S.Romanchuk (2006) [2], I.Ovcharuk, (2008) [5, 12] presented in their researches the motivational aspects of physical activity of cadets of higher educational institutions. The obtained results became the basis for the further search on how to increase motivation physical improvement, based on the values of physical culture, as the most powerful, stable, and able to remain relevant for many years.

Material and methods

To determine the hierarchical structure of graduate courses cadets' motivation of different years of study to physical improvement, which was developed according to the current system of physical education, the method of A.Shaboltas [10, 13] was used. Respondents (cadets) were offered a questionnaire with 21 pairs of judgments, reflecting the different reasons (motives) for physical training (PT) and sports, which were necessary to compare with each other and choose the one that subjectively seemed the most important. Each judgment was compared with all others and the predominance of one judgment over another was assessed. A slight predominance was estimated at one point, a sufficient one at two points, and a significant one at three points. Points were not awarded for uncertainty in assessing the predominance of one judgment over another.

Accordingly, the motive that is the most important for a cadet scored more points. The maximum amount for one motive was 18 points. The obtained data were processed using mathematical research methods.

The cadets of the 2010 (n=348) and 2020 (n=364) graduation courses took part in the survey.

Due to the different numbers of people in different years, we calculated the average value of the sum of motives for the possibility of comparing and analyzing changes in the motives' importance.

Based on the analysis of the purpose, tasks, content of physical improvement of cadets, specific principles of management of educational process in higher educational institutions and conditions of its organization the following motives of cadets towards PT and sports were defined: a motive of emotional satisfaction – aspiration that reflects emotional satisfaction from motor activity and physical exertion; a motive of physical self-improvement – the desire to do physical activity and sports, to be physically developed and healthy; a motive of preparation for military-professional activity – the desire to do physical training and sports for the successful implementation of military-professional activities in demand and in extreme conditions; a motive of social self-affirmation – the desire to express themselves, to stand out of colleagues; a motive for prevention of punishments – the desire to prevent disciplinary or material punishments for unsatisfactory level of physical fitness, missed PT classes, avoidance of participation in activities of other forms of physical training; a motive of material reward (financial incentive) – the desire to receive financial reward for compliance with the existing level of physical fitness to the established requirements; a recreational motive – the desire to exercise to diversify their lives, to compensate the lack of physical activity, for entertainment.

Determining the level of motivation of cadets to physical improvement was carried out according to the method of B.Dodonov [3], according to which any activity is carried out on the basis of four types of motivation: procedural (PR), productive (P), motivation for reward for successfulness (R), negative motivation (or motivation to avoid trouble for unsatisfactory performance) (N). It can be expressed by the formula – PR, P, R, N. For its application, the data obtained from a survey of cadets by the method of A.Shaboltas were transformed into appropriate types of motivation by combining related motives.

According to the theory of B.Dodonov, the motivation level determination is carried out by giving each type of motivation a certain index according to sums received after combined motives. The type of motivation with the highest sum of points was assigned the highest index – 5. Indices of other types of motivation were determined by proportional comparison of their sums of points with the sum of points that has the most important type of motivation. High level of motivation is expressed by the formula $PR_5P_4R_3N_3$, medium – $PR_3P_5R_4N_3$, low – $PR_0P_3R_4N_5$.

Result

Analysis of the cadets' answers of graduating courses of different years of study to the questionnaire allowed to determine the importance of motives for systematic classes in sports and sports for them. The results of the analysis are presented in *table 1*.

Table 1.Hierarchy of motives for physical training and sports of cadets of different years of study

Motive	Total score and arithmetic mean of motives			
	2010 year (n = 348)		2020 year (n = 364)	
	Total score, points	$\bar{X} \pm m$	Total score, points	$\bar{X} \pm m$
1	2	3	4	5
Motive of emotional satisfaction	4700	13.5±0,12	4624	13.1±0.13
Recreational motive	1810	5.2±0,28	2234	6.1±0.31
Motive of physical self-improvement	5204	15.0±0,24	5388	14.8±0.15
Motive of preparation for military-professional activity	4642	13.3±0,56	4186	11.5±0.56
Motive of material reward	1322	3.8±0,89	2548	7.0±1.1
Motive of social self-affirmation	1775	5.1±0,18	1644	4.5±0.17
Motive for prevention of punishments	1636	4.7±0,39	1966	5.4±0.32

The table shows that the motives of cadets' training in higher military educational institutions have undergone significant changes. The motivation of the motive of emotional satisfaction has reduced significantly ($t = 2.261$; $p < 0.05$) and at the same time the importance of recreational motive has increased ($t = 2.154$; $p < 0.05$) towards PT and sports.

An unauthentic decrease in the motivational significance of cadets towards the motive of physical improvement ($t = 0.707$; $p > 0.05$) was noticed.

The results of the study showed a credible decrease in the motive of social self-affirmation importance for cadets due to the achieved sports results and high physical fitness ($t = 2.423$; $p < 0.05$).

There was a decrease in the importance of the motive of preparation for military-professional activities for cadets in 2020 compared to cadets in 2010 ($t = 2.273$; $p < 0.05$). This shows that fewer cadets (21.1%) began to associate their physical development with increased personal fighting ability.

Significantly increased the importance of the motive of material reward for cadets ($t = 2.262$; $p < 0.05$).

There was a credible increase in the motivation to prevent punishment among cadets of 2020 in comparison with the cadets of 2010 year of study ($t = 2.302$; $p < 0.05$).

In accordance with the requirements of the methodology, combining motives related to motivational orientation, we transformed them into types of motivation. Procedural motivation includes the motive of emotional satisfaction ($\Sigma_{2010} 4700$, $\Sigma_{2019} 4624$) and recreational motive ($\Sigma_{2010} 1810$, $\Sigma_{2019} 2234$); to productive motivation - the motive of physical improvement ($\Sigma_{2010} 5204$, $\Sigma_{2019} 5388$) and the motive of preparation for professional activity ($\Sigma_{2010} 4642$, $\Sigma_{2019} 4186$); to the motivation of the reward - the motive of the material reward ($\Sigma_{2010} 1322$, $\Sigma_{2019} 2548$) and the motive of social self-affirmation ($\Sigma_{2010} 1775$, $\Sigma_{2019} 1644$); the only one motive is attributed to negative motivation - the motive of prevention of punishments ($\Sigma_{2010} 1636$, $\Sigma_{2019} 1966$). The results of the transformation of motives into types of motivation are presented in *table 2*.

Table 2. Motivational structure for the classes of cadets of different years of study

Motives	Type of motivation	Total score of type of motivation, points	
		2010 year (n = 348)	2020 year (n = 364)
Motive of emotional satisfaction	Procedural motivation	6510	6858
Recreational motive			
Motives for physical improvement	Effective motivation	9846	9574
Motive of preparation for professional activity			
Motive of material reward	Motivation of reward	3097	4192
Motive of social self-affirmation			
Motive for prevention of punishments	Negative motivation	1636	1966

According to the method of B.Dodonov, motivation of cadets who were studied in 2010 was expressed by the formula: $PR_3P_3R_{1-2}N_{0-1}$, in 2020 – $PR_{3-4}P_5RN_1$.

Comparison of the obtained results with formulas, determination of levels of motivation according to B.I. Dodonov, allows us to conclude that the motivation of cadets to their own physical improvement in both years of the study was at an average level, but differed in the importance of the types of motivation. To compare the differences of the components of cadets' motivation, the total score of motivation types were transformed into their arithmetic means (*table 3*).

Table 3. Arithmetic means of the importance of motivation types for cadets of different years of study

Type of motivation	The arithmetic means of the motivation type, $\bar{X} \pm m$	
	2010 year (n = 348)	2020 year (n = 364)
Procedural motivation	18.7±0.17	19.2±0.16
Effective motivation	28.3±0.64	26.3±0.63
Reward motivation	8.9±0.79	11.5±0.81
Negative motivation	4.7±0.39	5.4±0.32

Significant improvement of the procedural component of cadets' motivation was determined ($t = 2.142$; $p < 0.05$), but due to the increase of the importance of the recreational motive. This shows that the number of cadets who treat exercise mainly as entertainment has increased. Among cadets, the number of those who enjoy physical activity, which is accompanied by physical exercises aimed at the development of physical qualities, and attend PT activities on duty, decreased by 13.7%. From the standpoint of physical improvement, this is a negative phenomenon, as it does not contribute to achieving the goal of PT.

There was a significant decrease in the importance of effective motivation of cadets to physical self-improvement ($t = 2.245$; $p < 0.05$). 14.1% of cadets are less likely to improve their physical development, increase their body functionality and improve health. The number of cadets who see personal interest in physical training and sports is decreasing.

There was a significant negative trend of changing the responsibility of cadets for low levels of physical fitness ($t = 2.301$; $p < 0.05$). For a number of cadets, the motive for preventing punishment has increased.

Regarding the increase in the importance of reward motivation ($t = 2.298$; $p < 0.05$), it occurred due to the motive of material reward, while reducing the moral reward (motive of social self-affirmation).

Thus, the decrease in the structure of motivation for physical improvement of cadets motives of emotional satisfaction from physical activity, physical improvement and preparation for professional activities, which are based on the values of PT and related to intrinsic motivation ($p < 0.05$), and at the same time increasing

importance motives that constitute the external motivation of cadets to physical improvement - the motive of material reward and prevention of punishment ($p < 0.05$), leads to a decrease in the level of motivation in general.

Discussion

Our research has confirmed the results of scientific works of Y. Borodin and S. Romanchuk, [3], O. Olkhovy [4, 7], S. Romanchuk [13], that during the period of study at the higher military educational institutions cadets do not have a steady interest to systematic physical improvement and a sense of personal interest in regular exercise. The pedagogical potential of future officers physical education, the set of its capabilities and resources for the formation of their motivational and value attitude to continuous physical improvement is not used properly. This is confirmed by a slight increase in the physical fitness of cadets in accordance to the initial level of continuing education in higher education and its gradual decline in the first months of service.

The obtained results confirm the research of O. Ovcharuk about the need to form the motivation of cadets to independent physical training and sports from the first year of their studies at the higher military educational institution [6, 8]. Also, the study of O. Olkhovy [7], S. Romanchuk [9, 13] reveals that the existing system of physical improvement of university cadets does not have effective mechanisms for forming the necessary level of motivation for regular exercise.

To increase the level of motivation of cadets to systematic physical improvement requires strengthening the system of stimulating influences on cadets of psychological and pedagogical nature, which aims to form their procedural and effective motivation, based on PT values that are the most powerful and stable.

To form the procedural and effective motivation of cadets to their own physical improvement, based on the values of PT, requires reorientation of teaching the discipline "Physical Education and Special Physical Training" to deal with purely applied tasks - ensuring physical fitness of cadets here and now, to form in personal PT - the basis of their physical longevity.

Conclusions

1. According to the results of the study, we determined the structure and level of motivation for physical improvement of cadets of the Academy in 2010 and 2019. The motivation of cadets of both years of study was determined to be at the average level.

2. The motivation of cadets differs in structure. Regressive changes underwent procedural motivation ($t = 2.142$; $p < 0.05$) and effective ($t = 2.245$; $p < 0.05$). The number of cadets who exercised to improve their physical condition and improve their health decreased by 14.1%. The number of those who exercised on duty increased by 13.7%. There were 21.1% fewer people who considered physical exercises important to increase personal fighting ability.

3. It was determined the increase in external motivation of cadets to physical improvement, both positive and negative. In particular, an insignificant decrease in the motive for preventing punishment for low level of physical fitness was found ($t = 2.102$; $p > 0.05$). And the importance of the motive of material reward increased ($t = 2.298$; $p < 0.05$).

Conflict of interest. There is no conflict of interest between the authors.

References:

- Anokhin, Ye., Radkevych, O., Gusak, O. Physical fitness and its dependence on the value attitude of officers of the Armed Forces of Ukraine to self-improvement (2019). *Ukrainian Journal of Medicine, Biology and Sports*, 4; 3 (19), 26-32.
- Borodin U.A., Romanchuk, S.V. (2006). Motivation of university cadets to physical training and sports. Zhytomyr: ZHVIRE.
- Dodonov B.I. Structure and dynamics of motives. (1984). *Questions of psychology*. 4. 126-130.
- Ilyin E.P. (2000). Motivation and motives. St. Petersburg: Peter. (Master of Psychology Series).
- Ovcharuk I.S. Influence of positive motivation of cadets on the results of sports and mass work (2008). Visnyk of Kamyanets-Podilsky National University. Ivan Ogiienko University. Series: Physical Education, Sports and Human Health. *Journal. Kamyanets-Podilsky Ave.*; 1, p. 184-189.
- Olkhovy O.M. (2012). Theoretical and methodological foundations of professionally-oriented physical training of cadets of universities of the Armed Forces of Ukraine [monograph]. Kharkiv: HUPS.
- Oderov A., Romanchuk S., Klymovych V., Olkhovy O. & Korchagin M. (2019). Motivation of forming students healthcare culture on principles of interdisciplinary integration. *SportMont Journal*, Vol. 17(3), pp 79-83; ISSN 1451-7485, eISSN 2337-0351, doi 10.26773/smj.191017.
- Oderov A., Klymovych V., Zhembrovskyi S. (2020). Experience of determining the priority of complex process or system (on the example of physical education and sport). *Journal of Physical Education and Sport (JPES)*, Vol.20 Suppl. issue (6), Art 451, 3330-3335, doi:10.7752/jpes.2020.s6451.

- Oderov A., Korchagin M. & Romanchuk S. (2020). Correlation of Physical Fitness and Professional Military Training of Servicemen. *SportMont Journal*, Vol. 18 (2), pp. 79-82.; ISSN 1451-7485, eISSN 2337-0351, doi 10.26773/smj.200612.
- Romanchuk S.V. (2013). Theoretical and methodological principles of physical training of cadets of military educational institutions of the Land Forces of the Armed Forces of Ukraine [*dissertation*]. Lviv: Ivan Bobersky Lviv State University of Physical Culture.
- Romanchuk S., Oderov A., Kuznetsov M., Pohrebniak D., Indyka S., Bielikova N. (2022). Analysis of the level of physical fitness of cadets of the Military College of Sergeants at the stage of primary, *Sport i Turystyka. Środkowoeuropejskie Czasopismo Naukowe*. Vol. 5, no. 1, pp. 93-102.
- Romanchuk S., Oderov A., Fedak S., Kuznetsov M., Petruk A., Dunets-Lesko A, et al. (2017). Innovative approaches for evaluating physical fitness of servicemen in the system of professional training. *Journal of Physical Education and Sport*, Vol. 17(3): Art 4: 23-27, doi:10.7752/jpes.2017.s1004.
- Shaboltas A.B. (1998). Motives to sports of the highest achievements in youth. St. Petersburg: *Academy Publishing Center*.