

18th PCSF 2018
Professional Culture of the Specialist of the Future

**SPORT MANAGEMENT TECHNOLOGY IN
ARMED FORCES GIVEN MILITARY PERSONNEL'S PHYSICAL
TRAINING INTERESTS**

Alexander Bolotin (a), Vladislav Bakayev (b)*, Alexander Moha (c), Chunguang You (d)
*Corresponding author

(a) Peter the Great St. Petersburg Polytechnic University (SPbPU), Polytechnicheskaya 29, Saint Petersburg, 195251
Russia, a_bolotin@inbox.ru

(b) Peter the Great St. Petersburg Polytechnic University (SPbPU), Polytechnicheskaya 29, Saint Petersburg, 195251
Russia, bakaev_vv@spbstu.ru

(c) Peter the Great St. Petersburg Polytechnic University (SPbPU), Polytechnicheskaya 29, Saint Petersburg, 195251
Russia, moha.alexandr@mail.ru

(d) Chunguang You, Linyi University, The middle part of Shuangling Road, Linyi,
Shandong Province, P.R. China, youchunguang@mail.ru

Abstract

Today, one of the major trends in enhancing the physical training system in Russia's Armed Forces is solving the problem of sport work management improvement among the military. The paper reveals the sport work pedagogic management technology in the Armed Forces of Russia given physical training interests of the military. This sport work management technology consists of three stages. At the first stage physical training interests of the military are studied and the required groups are formed, commanding officers and sport organizers are instructed, goals and objectives of sport training are defined and training process is planned. At the second stage sport work is organized and implemented by all categories of military personnel considering their physical training interests, sport results are controlled and accounted. At the third stage the obtained results are compared to the planned ones and corrections are introduced to the workout programs. The article describes the methods of scientific research used by the authors, the results of the study, as well as a comparative analysis of the physical interests of military personnel's of different groups. The study involved 203 military personnel's.

© 2018 Published by Future Academy www.FutureAcademy.org.UK

Keywords: Competitive activities, military (personnel), physical training interests, Russia's Armed Forces, sport work management technology.



This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 Unported License, permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

1. Introduction

In today's conditions, demands for comprehensive physical education of the military personnel of Russia's Armed Forces are growing dramatically. Sport plays an important role in training and education of a soldier. Applied military sports are of special importance. During training the military personnel learn about war equipment and weapons, they acquire skills they need in battle (Bakayev, 2015; Bolotin & Bakayev, 2016; Tomczak, 2015; Tomczak, Dąbrowski, & Mikulski, 2017; Bolotin & Bakayev, 2018a; Pogodin, Piskun & Samorukov, 2018; Schyogolev, 2014).

Research shows that an individual's qualities are developing and improving only in the process of their exhibition. The more a service member has to demonstrate their physical and mental qualities, the more effectively the latter ones develop (Alricsson, Harms-Ringdahl, Larsson, Linder, & Werner, 2004; Gordon, Goren, Carmon, & Shelef, 2017; Bolotin & Bakayev, 2018b; Gdonteli, & Gavriilidis, 2014).

The process of battle practice with its diverse professional actions, movements, maneuvers cannot have an efficient enough impact on physical and mental perfection. The latter one can be achieved to a larger extent if applied military sports are included in the system. Their special feature is a wide range of motor activity and its complex character (Bolotin, 2015; Dąbrowski, Ziemba, Tomczak, & Mikulski, 2012; Gdonteli, & Gavriilidis, 2014; Sushchenko, Shchegolev & Korshunov, 2016).

During training and contests in Olympic and applied military sports, military personnel develop action speed, agility, strength, stamina, they engraft courage, decisiveness, self-reliance, initiative and quick wit, i.e. the combat qualities which meet real needs of a battle. It is applied military sports where the main principle of battle training is implemented: to teach troops what they need in combat (Mullins, 2012; Paxinos & Paxinos, 2014; Martins & Lopes, 2013).

Applied military sports include a complex of special skills and actions taken from the Armed Forces' battle training program. Their content is defined given the specifics of battle training activities of military personnel belonging to different branches of the Armed Forces. Each exercise is characterized with specific conditions, structure and form of skills and actions and affects the nature of a service member in a different way.

2. Problem Statement

At the same time review of the programs, guidelines for physical education, content of sport work reveals that they do not fully contribute to effective increase in battle efficiency of military personnel at different stages of training for a battle. It is caused, first of all, by low motivation of military personnel when doing sports. Sport work among military personnel is managed without consideration of their physical training interests. This results in lowered effectiveness of this activity.

- Theoretically justify the content of pedagogical technology management of sports work in the Armed forces of Russia, taking into account the physical interests of military personnel's.
- Develop and experimentally prove the effectiveness of pedagogical technology management of sports work among military.

3. Research Questions

The following research methods have been used to tackle the set problems: theoretical analysis and generalization of special, pedagogical, historical and psychological literature; observation; pedagogical experiment; mathematical treatment of the obtained data with the use of statistical methods.

We involved 203 officers in the research of physical training commitment and motivation. In order to define the degree of the officers' physical training commitment, their involvement in physical and sport activities was studied according to such characteristics as: regularity and sustainability of workouts, range of various physical actions and forms of physical training, duration of workouts.

4. Purpose of the Study

The aim of the study is to determine the degree of physical activity of military personnel's and their involvement in sports activities, taking into account the interests of physical culture.

Reveal the content of military-applied sports. Applied military sports and contests allow creating an environment which demands maximal exertion on the part of military personnel and full use of combat potential of weapons and equipment.

5. Research Methods

The following research methods have been used

5.1. Theoretical analysis and generalization of literature and documents

Literature sources have been studied to evaluate the problem, to set research objectives and search for ways to achieve them. Theoretical analysis and generalization were used at all stages of the study and included: system historical, system material and system functional analysis of different concepts and trends in developing physical, mental qualities and their impact on the level of professional development of military personnel; goals and objectives of the research were formulated.

5.2. Observation

Pedagogic observation was carried out to study the organization, content and methodology of physical training in the Armed Forces and universities of the RF Ministry of Defense in order to search for efficient ways to contribute to higher quality of professional military education. During pedagogical observation there was a direct control of actions of the test subjects, which allowed introducing the necessary corrections in the organization and methodology of sport work.

5.3. Pedagogical experiment

To achieve the objectives set, the following types of experiments were run: comparative and natural. Depending on the goals, they were summative or formative with the latter ones having a comparative trend. Most of the experiments were planned with selecting control and experimental groups based on TOE units, which allowed making the groups, regime and conditions of military service homogeneous. The following groups of techniques were used in the experiments: examination of physical development level; physical fitness testing (method of test exercises); study of mental qualities and psychomotor functions development level; study of professional training level of the military personnel. The list of research techniques with the examined characteristics is presented in Table 1.

Table 01. Research Techniques

Research Technique	Research Technique Description
Physical Development	Weight, Height, Body circumference, Vital lung capacity
Physical Fitness	Hand dynamometry, Pull-ups, 1 km run, 3 km run, 100 m swim, Standing long jump
Functional Status	Step-test, Stange's test
Statistical Analysis Methods	Calculation of mean value (x) Calculation of variation coefficient (V), Determination of difference reliability by Student's test (P) Calculation of Bravais-Pearson correlation pair linear factor (r)

5.4. Statistical analysis of research materials

In order to process the research materials there were used common mathematical statistical methods implemented in bundled software for different classes of computer systems. Above all, the obtained results were checked for normalcy of distribution with further calculation of the following statistical characteristics: mean of sample (x); mean square deviation (s); error in mean (m); variation coefficient (v). The degree of difference reliability between samples was evaluated by Student's test (t). In all calculations, reliability level was considered significant at $p < 0.05$.

The degree of interconnection between indicators was defined by the value and mark of the calculated correlation coefficients (r). Statistical analysis of the materials was performed with the use of application software.

Analysis of the officers' physical training commitment that we conducted allowed us to identify motives behind the officers' attitude to sport. As a result, subjective features of their physical and sport preferences and interests were revealed. We involved 203 officers in the research of physical training commitment and motivation.

In the end, all the sample of the tested subjects spread according to 4 typological groups.

Group A included 28.0% of the respondents with high degree of involvement in physical and sport activities (high physical training commitment):

- three to four workouts per week;
- practice of three and more sports;
- workout duration 2 hours and more;
- three or more forms of physical training.

Group B comprised 22.2% of the respondents. Their physical training commitment corresponded to a medium degree of involvement in physical and sport activities:

- two workouts per week;
- practice of two sports;
- workout duration from 30 to 50 minutes;
- two forms of physical training.

Group C comprised 32.7% of the respondents for whom low degree of involvement in physical and sport activities was common:

- one or less workout per week;

- practice of one sport;
- workout duration from 15 to 30 minutes;
- one form of physical training as a rule.

Group D included the officers (16.1%) who, according to the survey, had not been practicing any sports for a long time and whose physical training commitment was practically zero.

The degree of the officers' physical commitment is identified in every typological group depending on their professional military activity and position. In the high and average physical commitment group there are mostly people at the age of 25-30 years (60.9% and 58.3% correspondingly), in the low commitment group there are people aged 30-40 years (64.7%), in group D there are people aged 40-45 and above (83%). Physical commitment of the officers is preconditioned subjectively by the development level of their physical training needs as a major activity motive (Table 2). In their practical manifestation, physical training needs characterize the impulsive trends of the officers for doing sports.

Table 2 shows that group A representatives have a large range of physical training needs, which reflect the necessity for physical, social, esthetic and mental improvement with orientation on the requirements of their professional military activities.

Table 02. Physical training needs of the officers in different physical commitment groups (%)

Physical Training Needs	Typological Group			Position Depending on Significance
	A	B	C	
Physical perfection	44.2	23.8	12.1	4
Health promotion	92.8	71.3	49.6	1
Physical qualities development	29.7	32.8	14.1	6
Performance efficiency maintenance	67.3	41.5	23.3	2
Distressing	66.1	47.9	29.0	5
Perfection of motor skills	14.2	3.3	2.1	7
Psychological comfort	69.7	26.9	14.6	3

For the group B and C representatives, the main content of needs is health promotion, experience of positive emotions, and physical qualities development.

It has been identified that the range and content of the officers' physical training interests depend, to a certain extent, on the degree of their physical training commitment and development of their physical training needs. Thus, the officers with high physical training commitment prefer swimming (44.2%), volleyball (30.3%), football (16.7%), hitch-hiking (21.8%), basketball (12.6%), running (13.9%), and athletics (8.2%). The most attractive forms of training are group workouts (i.e. by interests) 69.7% and training in groups of general physical education – 21.3%. For the people who prefer moderate physical training commitment, the most popular trends are swimming (23.2%), hitch-hiking (21.7%), skiing (20.1%), running (12.3%), athletics (12.3%). Their preferred workouts are those in general physical education groups (37.1%). Officers with low physical training commitment are more inclined to swimming (31.2%) and running (14.1%) and prefer such forms of workout as “health groups” (51.6%), “acclimation training groups” (21.7%), group jogging classes (7.6%) and hitch-hiking (20.1%).

We have revealed that the foundation of the passive attitude to physical training on the part of a big proportion of the officers includes a number of subjective and objective reasons.

The first ones comprise, as shown above, negative motives to physical and sport activities as a whole and health deterioration (54.3%). The second ones appear due to the lack of individual approach to physical training programs (93.7%), absence of the relevant sport base (77.3%), lack and misery of sport facilities (49.7%).

The analysis of the officers' physical training motivation aspects that we have carried out says that the importance of physical exercise for maintaining and recovering the required functional condition and performance efficiency is understood by just 30-40% of the military. The degree of the officers' involvement in physical training is regulated with a totality of physical training needs and interests that they have and the measure of significance of these interests in the general hierarchical structure of motivational and value orientations. Three types of the officers' physical training commitment can be distinguished: sportive (group A), recreational and health promotional (groups B and C).

Comparative analysis of the military personnel's physical training interests is presented in Table 3.

Table 03. Comparative analysis of the military personnel's physical training interests (%)

Interests by Sports	Military Personnel's	Military Contractors	Female Military Personnel's
Close fight	16*	2	2
Athletics	23*	1	-
Kettlebell and barbell lifting	17*	2	-
Swimming	5	39*	12*
Skiing	5	22*	4
Sport games	15*	16*	3
Jogging	4	12*	20*
Aerobics	2	-	31*
Calisthenics	3	1	25*
Other sports	10	5	3
Total:	100	100	100

Note: * - the most interesting sports for different categories of the military

Table 3 shows that physical training interests are different for various categories of the military.

Thus, it can be concluded that efficiency of military sport work management depends a lot on their interest to doing one or another sport. This allowed developing a consistent sport work management technology (Table 4).

Table 04. Sport work management technology given physical training interests of the military

Stages	Solved Problems
1-st	research of physical training interests of the military; formation of groups for doing sports according to interests; teaching the commanding officers and sport organizers about the training methods; determination of goals and objectives of sport work; action planning

2-nd	organization and implementation of sport work among all categories of the military considering their physical training interests; control over sport work; accounting of sport results of the military personnel
3-rd	comparison of the obtained results with the planned ones; introduction of corrections in training programs

6. Findings

The results of the pedagogical experiment give evidence of high efficiency of the developed technology for military personnel's sport work management.

At the first stage physical training interests of the military are studied and relevant groups are formed, commanding officers and sport organizers are taught, goals and objectives of sport training are set, and the training process is planned. At the second stage the obtained results are compared to the planned ones and the training programs are corrected.

The average score on physical training of the service members in the experimental group (EG) was 3.12 before the experiment and 4.32 after it, while in the control group (CG) it was 3.14 and 3.48 correspondingly. The indicators of functional status, mental functions and efficiency of professional military actions in the EG after termination of the pedagogical experiment improved reliably, while improvement of these indicators in the CG was not reliable.

7. Conclusion

The research conducted in the field of the military personnel's sport work management technology which considers their physical training interests has proven its high efficiency. The following regular pattern has been identified: the more physical training interests of the military personnel are taken into account, the more the degree of their motivation for systematic workouts grows and, consequently, the higher their results are at the level of physical readiness for combat action.

References

- Alicrsson, M., Harms-Ringdahl, K., Larsson, B., Linder, J., & Werner, S. (2004). Neck muscle strength and endurance in fighter pilots: effects of a supervised training program. *Aviat Space Environ Med*, 75(1), 23-8. PubMed PMID: 14736129.
- Bakayev, V. (2015). Determining the significance of practical military skills applied by the special purpose regiments of the Internal Troops of the Russian Ministry of Internal Affairs to deliver combat objectives. *Journal of Physical Education and Sport*, 15(4), 615-618. DOI:10.7752/jpes.2015.04093
- Bolotin, A. E. (2015). Pedagogical Model for Developing Professional Readiness of Cadets Studying At Higher Education Institutions Affiliated With the GPS of the MCHS with the Use of Physical Training Aids. *Journal of Physical Education and Sport*, 15(3), 417-425. DOI:10.7752/jpes.2015.03062
- Bolotin, A., & Bakayev, V. (2016). Factors that determine high efficiency in developing speed and strength abilities of female hurdlers. *Journal of Physical Education and Sport*, 16(3), 910-913. DOI: 10.7752/jpes.2016.03143
- Bolotin, A., & Bakayev, V. (2018a). Pedagogical practice for development of coordination potential of MMA fighters and estimation of its efficiency. *Journal of Human Sport and Exercise*, 13(1), 72-88. doi:10.14198/jhse.2018.131.08

- Bolotin, A., & Bakayev, V. (2018b). Scientific and Theoretical Prerequisites for Improvement of Modern Pedagogical Technologies, *Advanced Learning and Teaching Environments Nùria Llevot, IntechOpen*, 195-221. DOI: 10.5772/intechopen.72342.
- Dąbrowski, J., Ziemba, A., Tomczak, A., & Mikulski, T. (2012). Physical performance of health men expose to long exercise and sleep deprivation. *Med. Sportiva*; 16(1), 6–11. doi: 10.5604/17342260.987837.
- Gdonteli, K. (2015). Investigation of the obstacle course performance at the Hellenic Military Academy. *Journal of Physical Education and Sport*, 15(2), 305-309. DOI:10.7752/jpes.2015.02046
- Gdonteli, K., & Gavriilidis A. (2014). An Explanation on a Prediction Level of Sport Commitment from Motivation, Constraints and Service Quality in Academic Sports. *International Journal of Sport Management*, 15(2), 172-192.
- Gordon, S., Goren, C., Carmon, E., & Shelef, L. (2017). Cognitive Evaluation of Israeli Air Force Pilot Cadets. *Aerosp Med Hum Perform.*; 88(4), 392-398. doi: 10.3357/AMHP.4677.2017.
- Martins, L.C.X, & Lopes, C.S. (2013). Rank, job stress, psychological distress and physical activity among military personnel. *BMC Public Health*, 13, 716.
- Mullins, N. (2012). Obstacle Course Challenges: History, Popularity, Performance Demands, Effective Training, and Course Design. *Journal of Exercise Physiology online*, 15(2), 100-128.
- Paxinos, T. & Paxinos, S. (2014). Obstacle Course: The ideal exercise for a fighter. *Sport Science and Armed Forces*, 2 (1), 16-22.
- Pogodin, S.N., Piskun, O.E., & Samorukov, V.I. (2018). Healthy lifestyle promotion in academic physical education process. *Theory and practice of physical culture*, 4, 96-98.
- Schyogolev, V.A. (2014). Physical training in US military educational systems. *Theory and Practice of Physical Culture*, 9, 15-16.
- Sushchenko, V. P., Shchegolev, V. A., & Korshunov, A.V. (2016). Features of personal and professional development of various professional categories in physical culture and sport, *Theory and Practice of Physical Culture*, 6, pp 3-5.
- Tomczak, A. (2015). Coordination Motor Skills of Military Pilots Subjected to Survival Training. *The Journal of Strength and Conditioning Research*, 29(9), 2460-2464, DOI: 10.1519/JSC.0000000000000910.
- Tomczak, A., Dąbrowski, J., & Mikulski, T. (2017). Psychomotor performance of Polish Air Force cadets after 36 hours of survival training. *Ann Agric Environ Med.*, 24(3), 387-391. DOI: 10.5604/12321966.1232762