

Modern Innovative Approaches of Domestic and Foreign Experts to Modernize the Physical Training of Female Servicewomen

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Abstract – The use of innovative approaches in military affairs allows achieving significant success both on the battlefield and in training. The world's leading armies are considering modernizing the physical training of female military personnel and have focused on finding ways to improve the physical fitness of female servicewomen. Unfortunately, the overemphasis in military history and legacy on aerobic fitness and “field expediency” as the primary criteria for training implementation has limited the extent to which the military has fully implemented state-of-the-art PT policies. This inherited approach can be problematic in fully enhancing women's ability to perform physically demanding combat tasks and can put the successful integration of women into ground combat MOSs at significant risk. **Purpose:** to get acquainted with the introduction of new ideas and technologies in the physical education of female servicemen in both Ukrainian and foreign armies and, based on the results obtained, to propose directions for improving the level of physical fitness of female servicemen of the Armed Forces of Ukraine. **Material and Methods:** Analysis of scientific literature and documentary sources on the problems of physical training of female servicewomen; generalization and systematization of theoretical knowledge related to the trends in the development of physical training of female servicewomen in the scientific and methodological literature. **Results:** Some

Ukrainian scholars have considered the use of innovative approaches to improve the physical fitness of military personnel. The study found that the armed forces of the United States of America and the United Kingdom have created special research units that have been conducting in-depth research on the problems of physical training of female servicewomen in the modern army over the past ten years. The use of the following technologies has been established: information and communication, differentiated physical education, and health preservation technology. In addition, the above countries are developing a physical training strategy to optimize the performance of women servicewomen in combat professions. **Conclusions.** Having analyzed the scientific works of Ukrainian and foreign authors, it should be noted that in order to improve the level of physical fitness of female servicewomen, it is necessary to use technologies that allow taking into account the physiological characteristics of women and using the strengths of the female body when creating physical training programs for female servicewomen in combat specialties.

Keywords – army, innovative approaches, female, physical fitness, servicewoman.

I. INTRODUCTION

In today's world, it is impossible to make progress in any field of human activity without applying innovative approaches.

Online ISSN 2256-070X

<https://doi.org/10.17770/etr2025vol5.8474>

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The latest technologies created on a scientific basis allow achieving significant results, saving time and resources and producing a better and more reliable product. The use of innovative approaches in military affairs in modern armies of the world also takes place.

One of the peculiarities of modern armies is that women are allowed to master combat professions and serve in combat units, so leading armies have begun to apply innovative approaches to the physical training of female soldiers. Given that female servicewomen have to perform combat missions in accordance with the requirements of modern combat, there is a need to improve their physical fitness. In our opinion, one of the directions can be the modernization of physical training through modern innovative approaches used in physical education and sports [1].

Modern military affairs requires a high level of physical fitness from women servicewomen, especially for women who hold combat positions. Physical fitness is one of the key factors that determines the combat readiness and combat capability of a unit's personnel. Recent scientific studies show the need to adapt training programs to the physiological characteristics of women servicewomen serving in combat units [2]. In the process of identifying innovative approaches to improving the physical fitness of female servicewomen, a number of domestic and foreign scientists [3, 4] focused on finding ways to improve the content and forms of physical training of female servicewomen [5].

II. MATERIALS AND METHODS

The following research methods were used to analyze innovative approaches to the physical training of female servicewomen: analysis of scientific literature (review of works by domestic and foreign researchers on modern approaches to the physical training of female servicewomen) [6, 7, 8, 9], comparative analysis (study of physical training programs for female servicewomen in different countries and their effectiveness) [10, 11].

III. RESULTS AND DISCUSSION

In Ukraine, the following scholars have studied the implementation of modern innovative approaches of domestic and foreign specialists to modernize the physical fitness of female servicewomen: Oderov A. in his work "Innovative approaches to assessing the physical fitness of servicewomen in the system of professional training" [12].

The article proves that the system of assessment and testing of physical qualities of servicemen plays a significant role in the formation of professional abilities of military specialists. In order to assess the military applied skills of servicemen, a number of physical exercises have been substantiated and implemented, for which standards have been developed.

The development of physical exercises took into account the results of a survey of combatants who identified the main types of combat missions, namely: marching (30%), defense (19.2%), duty at checkpoints and protection of facilities (17.0%). The results of the exercise test made it possible to find out that the use of personal protective equipment and weapons contributes to the improvement of professional qualities. The authors [13] in their article "Fundamentals of Formation of Military Applied Skills of Officers through Orienteering" consider the improvement of military applied skills of the Armed Forces of Ukraine through

the use of orienteering [13]. It is emphasized that regular practical training in terrain orienteering allows servicemen to move confidently in unfamiliar terrain and overcome various natural obstacles, receive and analyze relevant information, and make quick decisions in extreme situations. Romanchuk S., studied the specifics of women's physical training in the military forces of NATO countries and offers recommendations for improving the national system of physical training of ground forces [14].

Study the peculiarities of women's physical fitness and the volume of most physical activities, emphasizing the importance of a differentiated approach [15].

In our opinion, the main directions for improving the physical fitness of women in the Armed Forces of Ukraine are a differential approach (development of training programs that take into account the characteristics of the female body, with an emphasis on the development of functional strength, endurance and stress resistance), functional training (use of crossfit, bodyweight training and martial arts elements to improve overall physical fitness), rehabilitation methods (implementation of a program of recovery after physical exertion, including massage, yoga and technical [16, 17, 18].

In NATO countries and other developed countries, physical training for women in military units is based on scientifically sound approaches. Modern innovative methods include: gender-specific training programs (adapted sets of exercises that help to increase strength endurance without overloading the musculoskeletal system), digital technologies (use of mobile applications and specialized sensors to increase the level of physical fitness and load), multidisciplinary approach: involvement of physiologists, nutritionists, psychologists and sports doctors in the development of individual training programs, tactical fitness (focus on exercises that simulate real combat conditions, including moving with heavy equipment, overcoming obstacles and evacuating the wounded) [19].

The research [20] in "Physical training of cadets of military educational institutions of the Ground Forces of the Armed Forces of Ukraine" emphasizes the importance of taking into account the physiological differences of women when developing training programs.

In their study "Effects of Two Different Eight-Week Training Programs on Military Physical Performance" compare the effectiveness of different training programs for female military personnel [21].

A systematic review of the works of domestic and foreign researchers on modern approaches to physical training of military personnel. In particular, the results of research in the field of military physical training, gender adaptation of training programs and the impact of innovative methods on the combat effectiveness of military personnel are considered.

After conducting a comparative analysis of physical training programs for female servicewomen from different countries and studying their effectiveness, we found that the US and UK armies have implemented comprehensive training programs focused on the development of endurance, strength and psychological training. The programs include high-intensity functional training (HIFT), the use of body monitoring technologies, and an adaptive approach to exercise [22].

The armies of Germany, France, and Canada use a multi-level training system that includes general physical, specialized, and combat training. Particular attention is paid to exercises to develop endurance and strength characteristics [23].

Physical training programs in Australia and New Zealand are actively implementing specialized programs for women, including strength training, flexibility development, and adaptation to physical activity in combat conditions. An important component is psychological training and recovery strategies [24].

The Israeli army has one of the most developed physical training programs for female soldiers in combat positions. Considerable attention is paid to the development of general endurance, functional strength and psychological stability. CrossFit and high-load training techniques are used [25].

Sweden, Norway, and Finland pay special attention to equal physical training of both male and female servicemen and women, integrating training that develops strength, endurance, and psychological stability. Particular attention is paid to maintaining the health of military personnel, their safety and injury prevention [26].

Ukraine is gradually adapting physical training programs for female servicewomen, based on the experience of foreign countries. In particular, training centers and higher military educational institutions are introducing functional training, gender-specific physical fitness testing, and gradual modernization of training programs [27].

Current research proves the effectiveness of high-intensity functional training (HIFT) for military personnel. Such training includes aerobic and strength exercises that increase endurance and overall physical fitness

Assessment of physical endurance, strength characteristics and injury rates. The studies have shown that: Physical endurance. Female servicewomen trained in functional training programs (HIFT) demonstrate increased aerobic endurance and adapt more quickly to combat loads compared to traditional programs. Strength characteristics. Analysis of data shows that specialized strength training programs contribute to the improvement of women's overall physical fitness, in particular, the development of muscular endurance of the lower body, which is critical for performing tactical tasks. Injury rate. Statistics show that the level of injuries among women servicewomen is higher when training programs do not take into account their physiological characteristics. Optimization of programs can reduce overload and injury by 20-30%. Physiological differences between men and women require adjustment of loads, focusing on the development of lower body strength, coordination and muscle endurance [28]. Studies show that specialized programs can significantly reduce the risk of injury among female military personnel.

The use of biometric sensors, body condition monitoring systems, and virtual training platforms helps to individualize the approach to military training and increases the effectiveness of training.

Some Ukrainian scholars have considered the use of innovative approaches to improving the physical fitness of military personnel. The study found that the Armed Forces of the United States and the United Kingdom have created special research units that have been completing in-depth research on the

problem of physical training of women in the modern army over the past ten years [14], [25]. The use of the following technologies has been established: information and communication, differentiated physical education, and health preservation technology. In addition, these countries are developing a physical training strategy to optimize the employment of women servicewomen in combat specialties.

The analysis of the research sources showed that the Armed Forces of Ukraine do not have a thorough (comprehensive) approach to improving the physical fitness of female servicewomen through the introduction of innovative modern technologies. No state programs have been developed on the scale of the Armed Forces of Ukraine; there are only individual author's programs of scientists who propose to use them in training, both in specific specialties and branches of the armed forces, as well as in different categories (men and women) [7], [12], [28]. At the moment, the Armed Forces of Ukraine do not consider, create or produce special women's sportswear and footwear for training military exercises, actions and skills. In our opinion, the production and use of the following attributes could improve the level of physical fitness of female servicewomen.

To improve the effectiveness of physical training of women in the Armed Forces of Ukraine, it is advisable to [9], [11]: introduce modern technologies for monitoring physical activity: the use of biometric sensors and artificial intelligence for a personalized approach to training.

Thus, both domestic and foreign researchers are actively working to improve the physical training of women servicewomen by introducing innovative methods and approaches that take into account gender characteristics and modern requirements for military service.

IV. CONCLUSIONS

Physiological differences, in particular in the strength and power of the upper body between women and men, as well as the severity of combat-oriented professional requirements, in our opinion, put female servicewomen at a significant disadvantage, as the Armed Forces of NATO countries are introducing previously closed combat professional specialties (MOS) for women.

This inherent disadvantage can be greatly mitigated by implementing effective and comprehensive physical training (PT) regimens for women that target those components of physical fitness that are most critical to those tasks considered most important to a soldier's combat duties (i.e., strength and power).

After analyzing the scientific works of Ukrainian and foreign authors, it should be noted that in order to improve the level of physical fitness of female servicewomen, it is necessary to use technologies that take into account the physiological characteristics of women and replace the strength of the female body when creating a physical training program for female servicewomen in combat specialties.

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