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# METHODOLOGY FOR IMPROVING PHYSICAL TRAINING OF HIGHER EDUCATION STUDENTS PURSUING PROFESSIONAL QUALIFICATION OF PARAMEDIC

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**Introduction.** Physical education is a crucial component of higher education, playing a significant role in the development of both mental and physical qualities of an individual. The approach is based on the principles of individualization, prioritization of health, and the extensive use of various methods and forms to enhance physical abilities. Among the key areas of training for higher education students pursuing professional qualifications, such as paramedics, is physical training for their future professional responsibilities.

**The aim of the study** – to explore the specifics of physical training for higher education students of paramedic programs and to develop a methodology aimed at enhancing their physical and psychological readiness for future professional tasks.

**The main part.** The study examines the essential components of physical training, including functional training, cardio and strength exercises, as well as recovery methods, nutrition, and psychological preparation. The research emphasizes a comprehensive approach to training, which involves adapting exercises to the students' individual fitness levels. Functional training, closely linked to real-life professional challenges, is highlighted as one of the most effective methods for preparing paramedics for the physical demands of their profession.

**Conclusions.** The study concludes that an effective physical training program for higher education students, particularly those training to become paramedics, must integrate various methods of exercise, recovery, nutrition, and psychological preparedness. Students should not only achieve a sufficient level of physical fitness but also develop resilience and psychological stability to handle stressful situations in their future careers. The proposed methodology, which combines functional training, cardio and strength exercises, recovery practices, and psychological preparation, significantly enhances the physical readiness of students for professional challenges.

**Key words:** physical training; higher education students; professional qualification of a paramedic; tabata training; functional training.

# МЕТОДИКА ПОКРАЩЕННЯ ФІЗИЧНОЇ ПІДГОТОВКИ ЗДОБУВАЧІВ ВИЩОЇ ОСВІТИ ПРОФЕСІЙНОЇ КВАЛІФІКАЦІЇ «ПАРАМЕДИК»

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**Вступ.** Фізичне виховання є важливою складовою загальної системи вищої освіти, оскільки впливає не лише на фізичний розвиток здобувачів вищої освіти, але й на їх розумові та психологічні якості. Комплексний підхід до фізичної підготовки дозволяє сформувати здорову та гармонійну особистість, підготувати здобувачів вищої освіти до активного життя і професійної діяльності. Особливо це стосується здобувачів вищої освіти, які навчаються за програмами професійної кваліфікації, зокрема «парамедик». З огляду на специфіку цієї професії, важливо, щоб майбутні фахівці мали належну фізичну та психологічну підготовку до виконання складних професійних завдань.

**Мета роботи** – дослідити особливості фізичної підготовки здобувачів вищої освіти професійної кваліфікації «парамедик», а також розробити методику, яка дозволить покращити їх фізичну та психологічну підготовку до виконання професійних обов'язків.

**Основна частина.** У дослідженні розглянуто основні компоненти фізичної підготовки, зокрема функціональний тренінг, кардіо та силові вправи, а також техніки відновлення, харчування і психологічної стійкості. Акцентовано увагу на необхідності комплексного підходу до тренувань, що включає різноманітні методи та вправи, адаптовані до фізичних можливостей здобувачів вищої освіти. Одним із основ-

них аспектів є використання функціональних тренувань, що максимально наближені до реальних ситуацій, з якими можуть стикатися майбутні парамедики під час виконання професійних завдань.

**Висновки.** У роботі показано, що ефективна фізична підготовка здобувачів вищої освіти, особливо тих, хто готується до професії парамедика, повинна ґрунтуватися на інтеграції різних методик тренувань, відновлення та харчування. Важливо, щоб здобувачі вищої освіти не лише мали достатній рівень фізичної підготовки, але й були готові до стресових ситуацій, здатні зберігати психологічну стійкість в екстрених випадках. Запропонована методика тренувань, яка поєднує функціональний тренінг, кардіо та силові вправи, відновлення і психологічну підготовку, дозволяє суттєво підвищити рівень фізичної готовності студентів до майбутньої професійної діяльності.

**Ключові слова:** фізична підготовка; здобувачі вищої освіти; професійна кваліфікація «парамедик»; табата-тренування; функціональний тренінг.

**Introduction.** The problem of preserving health is a global issue that impacts all aspects of modern society. With the rapid pace of technological development, increasing urbanization, and the growing prevalence of lifestyle-related diseases, maintaining good health has become a top priority. Effectively addressing this challenge requires coordinated efforts from all sectors of society, including institutions, organizations, government bodies, and individuals. A strong and healthy society depends on the collective commitment to health promotion and disease prevention. One of the fundamental prerequisites for good health is the body's ability to generate and store energy efficiently. The primary factor influencing this energy capacity is the level of muscular activity, which directly contributes to physical fitness, endurance, and overall well-being. Regular physical activity, in turn, plays a key role in strengthening the body's energy potential and resilience against stress and illness.

The aim of the study is to explore the relationship between physical activity and health preservation, focusing on the role of muscular activity in maintaining the energy potential of the human body.

**The main part.** The training of highly educated, professionally skilled, and competitive specialists is an important task of state policy in the field of higher education. This task can only be accomplished if students maintain good health, proper physical development, and physical fitness. Scientists argue that reaching a high level of physical capability and reliability in a chosen profession is only possible through the purposeful application of physical training methods [1].

However, as practical experience shows, the current system of physical training for university students fails to achieve its objectives, with the level of students' psycho-physical preparedness declining each year. Research indicates that 61% of young people aged 16–19 have low physical fitness levels, which, according to scientists, contributes to increasing morbidity, reduced work efficiency and productivity, and impedes the realization of their potential in various aspects of life. A significant number of young men, due to their low physical fitness, are unfit for service in the Armed Forces of Ukraine [2]. The same trend applies to students pursuing higher education in the paramedic qualification, whose levels of physical development and fitness deteriorate annually, while health issues continue to rise [3].

Numerous studies indicate that in modern society, success in the professional activities of any specialist is determined not only by knowledge, skills, and competencies but also by the level of physical fitness required for the chosen profession. This statement is particularly relevant to the physical training of future paramedics, as these medical professionals must be well-rounded and harmoniously developed individuals. Research shows that future paramedics, in addition to possessing essential human qualities such as humanism, compassion, and empathy, as well as excellent professional skills, must also have a sufficient level of physical development and fitness, along with psychological confidence and resilience [4].

The term "physical training" highlights the practical focus of physical education as it pertains to a specific activity requiring physical fitness. As such, physical training can and should serve as an effective tool for improving health, preventing disease, and supporting professional development. However, as previously mentioned, the current state of physical training among student youth is far from encouraging.

Functional training is a high-intensity workout designed to strengthen all muscle groups. It engages even the deepest stabilizer muscles, which play a crucial role in our movement dynamics. Initially, these exercises were part of preparatory programs

before sports competitions and were also used in the training of American and European military personnel. The distinctive feature of functional exercises is that they mimic everyday movements, such as squats, lifts, presses, bends, overcoming obstacles, and walking on uneven terrain. These exercises do not put excessive strain on the joints or skeleton. You work with your own body weight, as well as with specialized equipment that helps engage all muscle types. Functional training combines elements of gymnastics, aerobics, weightlifting, cardio, and strength exercises, and the entire routine is performed intensively without breaks.

Tabata training is a method of high-intensity training that accelerates fat burning. Tabata training involves alternating 20 seconds of exercise with 10 seconds of rest, the cycle is repeated 6 to 8 times, and the whole workout lasts less than 10 minutes. According to research, this approach to training dries the body just as effectively as long-duration cardio training, and the focus on functional exercises allows for muscle development as well [5].

Such well-known exercises as push-ups, pull-ups, and squats engage nearly all muscle groups. Let us take a closer look at each of these exercises and analyse which muscles they develop.

Push-ups (sometimes called “press-ups” or “bending and straightening the arms in a prone position”) are a fundamental exercise that primarily develops the large chest muscles and triceps. During the movement, the anterior deltoid muscles, elbow muscles, and the muscles of the shoulder girdle are also engaged.

Squats are a fundamental strength exercise and one of the three main lifts in powerlifting, alongside the deadlift and bench press. During squats, the athlete lowers themselves into a squatting position and then rises back to a standing position. Squats are considered one of the most important exercises, not only in strength sports but also in general physical fitness, and are widely used as an auxiliary exercise in the training of athletes across nearly all sports disciplines. This exercise engages nearly all muscle groups of the lower body, including the quadriceps, hamstrings, inner thigh muscles, glutes, and lower back muscles, as well as the calf and soleus muscles. Additionally, it involves movement at three key joints: the ankle, knee, and hip.

Pull-ups are a fundamental exercise that targets the upper body muscles, including the latissimus dorsi, biceps, chest, upper back, and forearms. As one of the most popular exercises, pull-ups are commonly used to assess physical fitness among schoolchildren, students, cadets, and military personnel. Numerous studies highlight the importance of being able to perform pull-ups and maintaining overall physical fitness [6].

Every fifth person in the world experiences an emergency situation at some point in their life. Furthermore, there are situations where everyone must demonstrate good physical fitness – not just once, but repeatedly. This illustrates that performing these three basic exercises engages nearly all muscle groups, which makes it clear that such activities constitute a significant functional load, requiring thorough preparation.

This methodology is designed to develop essential physical and psychological qualities, skills, and abilities in higher education students, while also enhancing their resilience to various negative factors, including those related to their chosen profession and the challenges of war. The approach is based on four key components: training, recovery, nutrition, and psychological (mental) preparation.

The first component is training. We planned four training sessions per week: three were intensive, and one was less intense but longer in duration. It is important to note that the intensity of the training load was adjusted based on the students’ physical fitness levels. If the load proved too challenging, we reduced the number of sets; if it was too easy, we increased the number of sets or the intensity of the exercises.

***Monday.*** We worked in Tabata mode, a concept from CrossFit, performing each exercise for 30 seconds, followed by 15 seconds of rest between exercises. We completed five rounds with a 30-second rest between each round. The session began with a 5-minute warm-up at a light pace, followed by the exercises: push-ups, climbers, lunges, spot jumps, burpees, and crunches. Each exercise was performed for 30 seconds, with 15 seconds of rest between them. After completing all the exercises, there was a 30-second rest, and then the cycle was repeated five times. This workout lasted over 10 minutes and was quite intense. Our goal was to complete each exercise as quickly as possible while ensuring the students had enough energy for all five rounds, without a drop in performance during the third or fourth rounds. After the main workout, we finished with a 15-minute slow jog, at a pace where students could still speak full sentences – similar to walking, but not running. This was aimed at aiding recovery of the respiratory system.

***Wednesday.*** This was a "running day." We started with a 5-minute warm-up, followed by 10 minutes of slow jogging. Then, we moved on to the next block: students performed 1-minute accelerations at about 80-90% of their maximum capacity, followed by 1 minute of very slow jogging. This was repeated for 6 rounds, taking a total of 12 minutes. After that, we did another 10 minutes of slow jogging to help recover the respiratory system and heart rate. Next, we stopped near the pull-up bars, where the students did 4 sets of pull-ups to failure, with 2 minutes of rest between sets. After pull-ups, we did 2 sets of planks, holding for 2 minutes each, with 1 minute of rest in between. This concluded the Wednesday workout.

***Friday.*** We conducted an intensive workout using the Tabata method: 30 seconds of work, 15 seconds of rest, and 30 seconds of rest between rounds, with 5 rounds of exercises. The session began with a traditional 5-minute warm-up, followed by squats, running in place, planks with opposite arm and leg raises, reverse push-ups (with hands on an elevated surface), step push-ups, and crunches. After completing the Tabata circuit, we ended with 15 minutes of slow jogging for respiratory recovery.

***Sunday.*** Another "running day". The warm-up lasted 5 minutes, followed by 40 minutes of slow jogging. After the jog, we performed the same routine as on Wednesday: 4 sets of pull-ups to failure and 2 sets of planks, holding each for 2 minutes with a rest in between. This concluded the Sunday workout. From the following week, we began the same training cycle again.

These workouts may continue for several weeks, or even months. However, over time, we plan to vary the exercise routines to prevent the students' bodies from adapting too quickly.

The second equally important component is recovery. Adequate sleep – at least 7 hours per night – is essential for proper recovery and optimal training performance. In cases of chronic fatigue or illness, we would suspend training and allow a break from workouts. Additionally, we occasionally recommended vitamin supplements to support overall health. If students experienced overexertion, we advised a 10-day restorative massage course 1-2 times per year. It's important to note that for students with injuries, restorative massages facilitated a faster recovery. If professional massages are not available, we suggested using a massage roller – a specialized device with a textured surface that enables self-massage of the back, legs, and other body parts, offering an effective alternative to professional therapy.

The third component is nutrition. We recommended that students eliminate alcohol, fried foods, baked goods, sweets, tobacco, and drugs from their diet. Instead, we suggested focusing on protein-rich foods, ensuring that fats are not neglected and are sourced from fish or plant-based options. Regarding carbohydrates, we advised incorporating more whole grains, such as buckwheat, whole-grain pasta, and brown or wild rice (regular white rice is less optimal in terms of carbohydrate content). To provide your body with balanced nutrition, we recommended the following proportions: 1.5–2 grams of protein per kilogram of body weight, approximately 4–5 grams of carbohydrates per kilogram, and about 0.5–1 gram of fat per kilogram of body weight. By maintaining this balance, students will find it easier to train, recover, and achieve their desired results more quickly.

The fourth component is psychological (mental) preparation. Even a well-trained individual can be outwitted by a more clever, deceptive, or resourceful opponent in many situations. Therefore, mental and spiritual development is just as crucial. Reading relevant literature, learning to stay resilient in stressful situations, and engaging in activities that strengthen mental endurance are essential. Sports, physical games, various martial arts, yoga, and even games like chess or checkers can all contribute to this. In every aspect of life, the goal should be to develop not only the body but also the mind.

**Conclusions.** Based on the analysis of existing literature, we identified several factors contributing to the decline in physical fitness among higher education students pursuing a professional qualification in paramedicine. These factors include insufficient material and technical resources, an unsatisfactory level of physical preparedness, an increase in the volume and intensity of academic material, and the inefficiencies in the structure of the physical education process. The most effective approach to improving the physical fitness of higher education students is through a functional training system that integrates four key components: training, recovery, nutrition, and psychological (mental) preparation.

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