

UDC 796.012.3

FUNCTIONAL TRAINING IN THE FRESH AIR WITH THE USE OF TRX IN THE SYSTEM OF HEALTH AND RECREATION CLASSES OF THE MIDDLE AGED PEOPLE

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The features of construction of recreation and recreation classes are revealed, their importance for the able-bodied age people has been proved. The results of the application of functional training in the fresh air with the use of TRX in the system of recreation and recreation classes with women of the middle are presented. It is shown that the developed method of functional training using TRX in the fresh air, which is combined with healthy running, is safe and effective, provides a positive dynamics of indicators of the physical condition and adaptive potential of women of the middle age.

Keywords: health and recreation classes, functional training, TRX, health improvement.

Introduction. Overload of functional systems, decrease of mental and physical capacity, chronic fatigue syndrome, postural disorder, frequent morbidity – is an incomplete list of side effects of modern technogenic civilization on the health and quality of human life. The lack of systemic health and recreational influences deprives a person of the opportunity to restore their physical and mental strength, limits her ability to spiritually enrich and enjoy life [3; 4].

In foreign studies (N. Mellerowicz, W. Meller) there are symptoms and complaints that arise in practically healthy persons with insufficient motor activity: dyspnea while insignificant physical activity; reduced work capacity, fatigue, pain in the area of the heart, dizziness, cold extremities; tendency to constipation, back pain, as a consequence, insufficiency of functioning of the muscular corset; sleep disturbance; reduction of concentration; increased nervous-emotional excitability (in violation of psychosomatic equilibrium); very early senile weakness.

Researchers identify a number of factors that influence the participation of different groups of people in health and recreation classes. Among the main internal factors identified: biological (gender and age); psychological (self-sufficiency, internal motivation, value attitude, general self-esteem, satisfaction).

Among the external factors, the most significant are material and social conditions. Scientists point out the following reasons for insufficient physical activity of the population: lack of awareness about the benefits of classes (40% of respondents); lack of interest in classes (47%); the advantage of any other occupation in free time (in 62%); laziness (in 57%); lack of information on employment opportunities (37%); the problem of free time (63%); despair in their own abilities ("all the same it will not work!") (29%) [1; 4].

Therefore, it is relevant to search for new forms and types of health and recreational motor activity, the implementation of which will increase the motivation of people to actively and meaningful leisure activities and to form a need for a healthy lifestyle.

The purpose of the article. Theoretically substantiate the necessity of health and recreational activities for women of the middle age (36-55 years) in the fresh air; to reveal the content and methodical features of the method of functional training of TRX in the fresh air for a given contingent of persons, which is combined with the recreational jogging.

Research methods. Analysis and generalization of data of scientific-methodical literature, questionnaires, pedagogical observation, pedagogical experiment, estimation of the adaptive potential of the blood circulation system to the factors of the external environment (by the method of R.M. Baevsky), estimation of physical condition.

Research results. To construct a method of functional training with the use of TRX in the fresh air it is necessary to consider the theoretical basis for the construction of health and recreational activities. The construction of health and recreational activities should take into account a number of factors: age and sexual characteristics of recreational activities, their interests, material and technical capabilities, state of health and level of physical preparedness, etc. The main unified components (factors) taken into account when developing the algorithm for training and conducting recreation and recreation classes are: 1) assessment of the factors influencing the coverage of a particular group of people (students, students, employees of enterprises and institutions, people of retirement age) with health and recreation classes; 2) assessment of the conditions for the organization of health and recreational activities (according to the passport of the institution or recreational area); 3) estimation of the initial level of the psychophysical state of recreational activity subjects; 4) development of a program of health and recreation classes; 5) health and recreation activities; 6) determination of the effectiveness of health and recreation activities.

When developing a method of functional training with the use of TRX in the fresh air it is necessary to take into account that such training has certain differences from sports lessons. If sport training involves the use of physical activity in

order to achieve maximum results in the chosen sport, the health and recreational one aims to increase or maintain the level of physical capacity, somatic and psychological health of a person.

The content of health and recreation classes forms physical exercises. In order to achieve a clear health effect, physical exercise should be accompanied by significant energy consumption and a long and uniform physical activity on the respiratory system and blood circulation. This ensures the supply of oxygen to tissues, therefore, indicates the marked aerobic direction of exercise [1].

The effectiveness of physical exercise regenerative orientation is determined by the frequency and duration of classes, the intensity and nature of the means used, alternating working and rest regimes.

In order to ensure the recreational orientation of recreational activities, it is necessary to follow the methodical principles.

The principle of gradual increase in intensity and duration of loads: provided the low initial level training increase in intensity and duration should be 3-5% per day in relation to the achieved level, and after reaching high rates should be less. Gradually increasing the load, it is necessary to avoid over-stressing the body and create favorable conditions for the deployment of long-term adaptation mechanisms, which will ensure the gradual growth of opportunities to overcome longer and more difficult loads. An increase in the loading impact of trainings can be provided in the following ways:

- increase in the number of health and recreational activities per week;
- increase in the duration of classes;
- increase in the density of trainings, that is, the time spent directly on motor activity (exercise of physical exercises). In the first lessons, the motor density is approximately 45-50%. At adaptation of an organism to physical load motor density of employment can reach 70-75% of total time of classes;
- increase in the intensity of trainings due to the increase in the pace of exercise;
- continuous expansion of the tools used in training, in order to ensure the impact on different muscle groups, joints and internal organs;
- increase the complexity and amplitude of movements [2].

Structure and construction of classes. Each class must have a clearly defined structure: preparatory, main and final parts. The distribution of means and the application of methods in different parts of the classroom should correspond to the direction of each of its parts. Depending on the state of health, the weather, the level of preparedness of the subjects of recreational activities, you can increase or decrease the workout, the main and final part of the class.

Variety of means. For qualitative variety of physical activity 7-12 exercises of different orientation are enough. Effective means of various training, which includes a large number of muscles, is jogging, skiing, swimming, rhythmic gymnastics, and etc. Exercise for endurance (running at slow and medium speeds), exercises for large muscle groups (squatting, lifting the legs in the hill on the crossbar or gymnastic wall, moving from lying position to the sitting one, etc.) should be used in health and recreational training, exercises for the joints of the spine, arms and legs, as well as exercises with a change in body position [2].

Systematicness of trainings. Systematic exercises have a positive effect on all organs and systems of the organism; normalize the mental state of recreational activities. For health purposes, the next weekly volume of motor activity is recommended for people of all ages: students – 10-14 hours; employees – 6-10 hours; people of retirement age – 10-12 hours.

Individualization of the maintenance of health and recreational activities. The purpose of individualized programs of health and recreational activities is to promote the physical and mental health of recreational activities. To achieve this goal, general and special tasks need to be solved.

In order to solve the set problems, it is recommended to use the following health and recreational facilities: general training (in motion, on site), general development (aimed at the development of flexibility, coordination, and attention), restorative (breathing exercises, elements of isometric gymnastics) and recreational means (relays, active and psychological games, elements of sports games).

Individualized programs should be of a long-term nature and be designed for 1-3 months. Periodicity of health and recreation classes – 2-3 times a week for up to 90 minutes at a time, free from the main activity, in specially equipped rooms or in the nature.

The program of health and recreation classes should be implemented in three stages: initial, basic and final, each of which solves specific tasks in accordance with the basic methodological principles of construction of health and recreational activities.

The content of the methodology. We have developed a method of functional training TRX in the fresh air for women of middle age, which is implemented in the conditions of the fitness club and the adjoining park area. TRX's functional training is combined with a healthy jogging.

The purpose of the experimental method of functional training in the fresh air with the use of TRX for women of middle age was determined by enhancement of the functional capabilities of their organism, the prevention of diseases typical of individuals in this age group associated with sedentary lifestyle, the normalization of their mental state, the formation of a need in a healthy and active way of life.

A comprehensive, systematic approach to the implementation of the methodology allowed to isolate and solve the following tasks: 1) the formation of a stable positive motivation to participate in functional training in the fresh air; 2) improvement of the psycho-emotional state of recreational activity subjects; 3) ensuring effective influence on the main mechanisms of development of compensatory-adaptive reactions of the organism in the process of aging, normalization of its functional capabilities; 4) prevention of the development of age-related diseases; 5) expansion of their sphere of activity and involvement in conducting an active, healthy lifestyle, improving its quality.

Organization of the research. For the study, a research group of 17 women of middle age (37-43 years old) was formed and the homogeneity of its composition according to age and functional criteria was determined, which allowed further

comparing and analyzing the obtained empirical data at all stages of the study. Implementation of the TRX technique was carried out in a sequential pedagogical experiment, which lasted for 6 months and took place on the basis of the Sports Palace "Spartak" and "Spartak-GUM" (Poltava, Ukraine).

The total duration of outdoor activities is 90 minutes, of which exercises at TRX are allocated 20 minutes in the main part of the health class. Under favorable weather conditions in the spring-summer period and in the beginning of autumn, a complex of functional training at TRX is carried out on a sports ground located in the park area near the sports club "Spartak" and "Spartak-GUM" (Poltava, Ukraine). To fix TRX we used non-standard gym equipment (high cross-bars).

The inclusion of jogging classes in health improvement in the program of health and recreation classes is due to the motivation of middle-aged women to take part in the health run: · health promotion and disease prevention; · increase of working capacity; pleasure from the running process; · desire to improve their results in running (sports motivation); · desire for communication; · desire to know your body, its capabilities; · motivation for creativity, motivation for raising and strengthening the family; · "family" run; · occasional motivation.

However, according to the author's observations, the most powerful incentive for classes is just pleasure, a sense of joy that brings jogging. In most cases, those people who could not have experienced such feelings as a result of improper training stop their classes.

The technique of the recreational run is based on natural locomotives, which does not require special training. The general effect of running on the body is associated with changes in the functional state of the central nervous system, compensated for the lack of energy, functional changes in the blood circulation and reduced morbidity.

Exercise in running on endurance is indispensable means of psychological discharge and neutralization of negative emotions that cause chronic nerve surge. These same factors greatly increase the risk of myocardial infarction as a result of excessive adrenal hormones – adrenaline and norepinephrine. Improving jogging (in optimal dosage) in combination with water procedures is the best means of combating neurasthenia and insomnia – diseases of the XXI century caused by a nervous surge and a large amount of information coming in. As a result of exercises, improving jogging reduces nervous tension, improves sleep and well-being, and increases performance. Wellness jogging sessions in the evening neutralize the negative emotions accumulated per day; reduce the concentration of adrenaline released by daytime stress. Thus, jogging is the best natural tranquilizer that works better than medications [3].

The soothing effect of the run is enhanced by the action of the pituitary hormones (endorphins), which are released into the blood during endurance work. With intensive training, their blood content increases by 5 times compared with the state of rest and is kept in elevated concentrations for several hours. Endorphins cause a state of peculiar euphoria, a sense of unreasonable joy, phys-

ical and mental well-being, suppress hunger and pain, and substantially improve the mood. Psychiatrists widely use cyclic exercises in the treatment of depressive conditions, regardless of their cause.

One of the features of the second-old-age women's health improvement method, which is the clients of the fitness club, is the use of functional training using TRX in the fresh air.

The advantage of functional training at TRX is the possibility of varying, in the range of 5 to 100%, to apply loads by the weight of own body with minimal joint load. The advantages of functional training at TRX are the possibility of varying, in the range of 5 to 100%, to apply weight-weighting your own body with minimal joint load. These conditions are ensured by adjusting the length of the TRX belts and, consequently, the stabilization factor. Functional training simulates real (everyday) movements. Ensuring motor activity while exercising on TRX is due to the involvement of a large number of muscle groups and different types of muscle fibers. This provides a load on the entire musculoskeletal system and a communication device, adequate to the level of preparedness of each individual subject, contributes to its uniform distribution. Thus, an effective development of muscle strength (core) is achieved due to the axial load on the spine, as well as the strength of other large and small muscle groups, flexion of the joints, coordination, in particular, balance, endurance.

Traditionally, TRX is used in gyms in Ukraine. However, in order to strengthen the health effects of such activities, from May 2018, we started experimentally using exercise complexes in the city park, in the territory of which sports clubs "Spartak" and "Spartak-GUM" (Poltava) are located.

Taking into account the aforementioned aspects, we have been able to predict that functional training at TRX will increase the ability of people of middle age to gradually increase the level of functional preparedness needed in everyday life, allow for diversification of training sessions, and increase motivation for attending health training.

Discussion of results. Age periodization of human life is a conditional division of a whole life cycle into the age periods measured in years. Under the age period it is necessary to understand the segment of the individual's life, which reaches a degree of development and has characteristic and relatively stable qualitative features. Within each of the periods of the individual's development, quantitative and qualitative changes in physical development, physical fitness, psyche, and intellectual development take place, which makes it possible to identify certain stages that consistently change each other. Human development has a periodic and staged nature. Determination of periods, stages, phases of mental, physical and personal development of a person is necessary for revealing the leading (dominant) type of activity, its character and orientation for creating the optimal system of health and recreational measures, the application of which will ensure restoration of the psychophysical state, obtaining maximum pleasure from active leisure.

For planning the maintenance of recreational activities with functional training at TRX for women of the middle age, the understanding of

the relationship between periods and stages of development becomes important, since the acquired knowledge and skills at the previous stage are passed to the next and used in the new ones, more complex interpersonal relationships with the public environment.

In the middle age (from 36 to 55 years), women undergo processes that are associated with a gradual decrease in the functional capacity of the human body due to aging. The main criteria that have been taken into account during the development of the content of the method of using the TRX loops are as follows: taking into account the peculiarities of the age; taking into account the specifics of the leading activity; studying the motivation of women for health and recreation activities; estimation of the initial level of physical condition of women of the middle age as subjects of recreational activity.

Assessing the motivation of women, we focused on: 1) consideration of motivational priorities (classes, according to women, should be directed to interesting, meaningful, active pastime, interesting communication, correction of body weight, improvement of posture, improvement of health); 2) interest in certain types of motor activity, which increase the emotional background of occupations; 3) harmonious balance of different types of motor activity, which guarantees a broad "motor base" for modeling health and recreational programs.

In order to evaluate the effectiveness of the TRX functional training method that we introduced, we used indicators of the physical condition and adaptive potential of women.

Introduction of the method of functional training TRX allowed to achieve statistically significant positive changes in the indicators of the physical condition of women: the physical condition of 2 women reached the middle level (11,76%); 14 women achieved a high level of physical fitness (82,35%); in one woman (5,88%), a low physical condition was recorded. The comparative analysis of the data of the recording and forming stages of

the experiment fully confirmed the effectiveness of the applied experimental effects ($\chi^2_{emp.} = 9,556$; $\chi^2_{cr.0,05} = 1,53$; for degrees of freedom $n-1=1$; $\chi^2_{emp.} > \chi^2_{cr.0,05}$ – different summations).

According to the indicators of adaptive potential of the system of blood circulation (functional class) of women who engaged in functional training, also confirmed the effectiveness of the experimental method. The following results were shown to the experiment: sufficient level of adaptation of the circulatory system was recorded in 7 women – 41.17% of people (1,95+0,15 points); the high level (2,68+0,26 points) was recorded in 8 women (47.05%); the indicator of the stress of adaptation mechanisms (3,38+0,19 points) was shown by 2 women (11,76%).

At the end of the introduction of an experimental technique based on cyclic aerobic exercises and functional training at TRX, positive changes were observed in the indicators of adaptive potential of all women: the high level of adaptation of the circulatory system (1,73+0,19 points) reached 13 women (76,47%); the average rate (2,31 + 0,17 points) was recorded in 4 women (23,52%); cases of stress of adaptation mechanisms were not recorded ($\chi^2_{emp.} = 10,031$; $\chi^2_{kr0,05} = 1,53$; for degrees of freedom $n-1 = 1$; $\chi^2_{emp.} > \chi^2_{kr0,05}$ – different summations).

Conclusions.

1. Positive reliable dynamics of indicators of the physical condition and adaptive potential of women of the second mature age confirms the effectiveness of the proposed method of functional training in the fresh air with the use of TRX for persons of the middle age.

2. Functional TRX loops can be used in working with persons of the middle age within the framework of functional training and rehabilitation programs in the open air. Exercises with TRX have the advantage – it is work with weighting our own weight. Such exercises also allow removing the vertical load of the spine. Exercise can include various joints and 90% of all muscles in the work.

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ФУНКЦІОНАЛЬНЕ ТРЕНУВАННЯ НА СВІЖОМУ ПОВІТРІ З ВИКОРИСТАННЯМ TRX В СИСТЕМІ ОЗДОРОВЧО- РЕКРЕАЦІЙНИХ ЗАНЯТЬ ОСІБ ДРУГОГО ЗРІЛОГО ВІКУ

Анотація

Розкрито особливості побудови оздоровчо-рекреаційних занять, доведена їх важливість для осіб працездатного віку. Представлено результати дослідження застосування функціонального тренування на свіжому повітрі з використанням TRX в системі оздоровчо-рекреаційних занять з жінками другого зрілого віку. Доведено, що розроблена методика функціонального тренування з використанням TRX на свіжому повітрі, яка поєднується з оздоровчим бігом, є безпечною та ефективною, забезпечує позитивну динаміку показників фізичного стану та адаптаційного потенціалу жінок другого зрілого віку.

Ключові слова: оздоровчо-рекреаційні заняття, функціональне тренування, TRX, оздоровчий біг.

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ФУНКЦИОНАЛЬНАЯ ТРЕНИРОВКА НА СВЕЖЕМ ВОЗДУХЕ С ИСПОЛЬЗОВАНИЕМ TRX В СИСТЕМЕ ОЗДОРОВИТЕЛЬНО- РЕКРЕАЦИОННЫХ ЗАНЯТИЙ ЛИЦ ВТОРОГО ЗРЕЛОГО ВОЗРАСТА

Аннотация

Раскрыты особенности построения оздоровительно-рекреационных занятий, доказана их важность для лиц трудоспособного возраста. Представлены результаты исследования применения функциональной тренировки на свежем воздухе с использованием TRX в системе оздоровительно-рекреационных занятий с женщинами второго зрелого возраста. Доказано, что разработанная методика функциональной тренировки с использованием TRX на свежем воздухе, сочетающаяся с оздоровительным бегом, является безопасной и эффективной, обеспечивает положительную динамику показателей физического состояния и адаптационного потенциала женщин второго зрелого возраста.

Ключевые слова: оздоровительно-рекреационные занятия, функциональная тренировка, TRX, оздоровительный бег.