

# Application of means of health-improving fitness for correction of weight of girls of the senior school age

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**Purpose:** to carry out the theoretical analysis of the problem of application of health-improving fitness for the correction of weight of girls of the senior school age.

**Material & Methods:** analysis and synthesis of data of scientific and methodical literature.

**Results:** it is established that the problem of excess weight at girls of the senior school age is one of the most urgent in modern science. The reasons of obesity of teenagers are defined and the main directions of the solution of this problem are characterized.

**Conclusions:** it is defined that application of means of health-improving fitness promotes the correction of weight at girls of the senior school age. It causes the necessity of development and deployment of innovative technology of correction of weight at girls of the senior school age on the basis of primary use of means of health-improving fitness.

**Keywords:** girls of the senior school age, health-improving fitness, correction of weight, obesity, innovative sports-health-improving technologies, fitness program.

## Introduction

According to scientists, in recent years, the problem of excess weight of girls of the senior school age is extremely urgent and needs the effective decision. Excess weight leads to the decrease in working capacity, senilism and risk of death at the young age, emergence of number of diseases (hypertensive and ischemic heart troubles, atherosclerosis, diabetes mellitus, stroke, dyskinesia of gall bladder, cholelithiasis, chronic cholecystitis, infertility, backbone osteochondrosis, exchange and dystrophic polyarthritises, some types of cancer but other) [5; 7; 12]. Also obesity belongs to one of the most widespread chronic non-infectious diseases in the world [6; 11].

The analysis of the last researches and publications concerning the problem of the scientific article certifies that scientists focus the main attention on application of means of physical rehabilitation for correction of weight of teenagers [6], formation of healthy lifestyle at pupils with excess weight [11], and also optimization of physical condition of pupils, students and persons of the mature age, means of health-improving fitness and athletic gymnastics [10; 11; 13; 14], step aerobics [15], rhythmical gymnastics [16], fitness-aerobics [19]. Also we find the scientific works, which are devoted to the research of influence of health-improving fitness on the level of physical fitness of pupils of the senior classes [9], motivation of teenagers to physical culture classes [3; 9], psychophysiological sphere of women [15] and their functional preparedness [18], and also on correction of weight of women during the period of post-menopause [20].

At the same time the problem of correction of weight of girls of the senior school age in scientific literature is covered not fully, as confirms the relevance of our research.

**Communication of the research with scientific programs, plans, subjects**

The research is executed according to the plan of research work of the chair of the theory and technique of physical culture of A. S. Makarenko Sumy state pedagogical university for 2016–2020 according to the subject “Theoretical and methodical bases of sports formation of different segments of the population” (number of the state registration is 0116U000900).

## The purpose of the research:

to determine the current state of the research of problem of application of health-improving fitness classes for correction of weight of girls of the senior school age.

## Material and Methods of the research

**Research methods:** theoretical analysis and synthesis of data of scientifically-methodical literature.

## Results of the research and their discussion

Scientists call non-compliance with healthy lifestyle, low culture of food (including the use of instant artificial products with chemical impurity), low motor activity, lack of information on culture of health, violation of hormonal system at young men as a result of the use of alcoholic beverages [1; 5], unseemly conditions of education and dwelling in families, eases of medical support of educational institutions [7], irregular shape of carrying out leisure [17] among the reasons of excess weight and obesity of children and young. Therefore, the basic in the course of correction of body weight is formation of healthy lifestyle, which includes increase in physical activity, change of stereotypes of food and refusal from addictions [12].

I. Zharova and L. Kravchuk note that the initial stage of obesity is recorded at teenagers of the pubertal period. The research-

er notes that girls most intensively add in body weight at 12–13 years old, and boys – at 11–13 and 14–15 years old [6]. It gives the grounds to predict the excess weight of body and obesity in the next years of life. Conclusions of O. Palladina that early correction of excess weight of body is the key to health at the adult age [12] are important in this context.

Scientists pay the considerable attention to development of interactive technologies in the course of physical education of the senior pupils and possibility of their use for correction of weight. I. Zharova offered the technology of physical rehabilitation of teenagers with primary obesity which is based on application:

- kinesiotherapy with application of systematic physical exercises in the form of morning hygienic exercises, remedial gymnastics, the dosed walking, hydro-kinesiotherapy;
- massage; natural and artificial factors of the nature (climatotherapy, balneal and hydroprocedures);
- mechanotherapies; dietotherapy; orthopedic actions [6].

O. Palladina notes that it is necessary to create Schools of healthy nutrition or School of healthy way of life, which according to the researcher, are expedient for opening on the basis of children's policlinics or schools for the purpose of correction of weight of pupils. Also the researcher notes that it is pertinent to give lectures for parents about healthy food, to give in playful way classes with children, to organize meetings in the course of which parents and children could share difficulties and progress, and also own ways of transition to new diet within Schools of healthy nutrition [12].

O. Moroz offered algorithm of technological processes of correction of body weight which provides:

- 1) assessment of indicators of body weight and definition of character and extent of their violations;
- 2) statement of tasks and definition of strategy of correction of weight and to structure of body taking into account option of the found violations;
- 3) development and embodiment of the program of actions for correction of the found violations with the subsequent assessment of its efficiency and repetition of the whole process at first [11].

Also the researcher pays attention that the daily performance of hygienic gymnastics, optimization of the mode and food allowance, and also action, on improvement of control of emotional state are provided near specially-directed trainings of the program of correction.

At the same time scientists consider health-improving fitness as one of the most effective remedies of correction of weight, carrying this type of gymnastics to the most popular types of recreational classes [9; 21] and means of non-drug weight reduction [12]. At the same time correction of body weight is important criterion of efficiency of programs of fitness [12]. At the same time scientists [9; 12] note that the coordinated actions of school, teacher of physical culture, pupils and parents are of great importance in heating-up period of interest of pupils in systematic fitness classes. Scientists call positive influence of classes and increase in condition of their physical fitness as motive for activation by fitness classes at teenagers.

The definition of fitness for our research, which is offered by O. Kornosenk, who considers this sport as different forms of physical culture, which have the standard, improving and sports focus, which is based on use of wide complex of physical exercises, is expedient: aerobics, shaping, dancing movements, elements of gymnastics, martial arts, psychotraining which are carried out in the hall, pool, whether on the open areas, in all age groups of the population [8].

As V. Krendelev marks out, the main (basic) movements of fitness are different types of walking (added, with raising of knees), skip jumps and jumps, leg swing, squat, lunges. Use of these exercises in different combinations in combination with movements, turns, different movements of hands is provided by availability, variety and high emotional background of classes. Sets of exercises are under construction by the method of blocks and not less than 8-10 times are carried out [9]. At the same time Yu. Belyak notes that the main emphasis in functional training on classes is placed by fitness on ability to carry out the movements with optimum range, showing the necessary level of power opportunities, keeping dynamic balance in conditions, which constantly change in connection with influence of the external forces operating on body at change of its situation [2, p. 4].

Also Yu. Belyak marks out methodical features of programs of health-improving fitness:

1. Variety and interchangeability. Means of health-improving fitness are various by the biomechanical structure, orientation and contents.
2. Possibility of accurate regulation of loadings. All means of health-improving fitness are easily dosed thanks to determination of number of their repetitions, tempo of execution, range of movements and other characteristics.
3. Ability to transformation for the purpose of differentiation of loadings. The possibility of modification of nature of performance of exercises, their speed, range, speed, change of starting position, allows to simplify or complicate their technique without essential change of contents.
4. Ensuring selective influence on organism. Despite of all-improving nature of exercises, it should be noted that each of them has the purposeful direction which is expressed in overwhelming influence on this or that muscular group, development of certain system of organism or physical quality.
5. Possibility of the simultaneous solution of wide range of improving tasks. Exercises of health-improving fitness attract the big mass of muscles in work, are carried out in the different planes and demand simultaneous manifestation of several physical qualities.
6. High degree of innovation and emotionality. Fitness industry is characterized by the existence of well-developed competitive environment in which producers of services of fitness combat for the consumer [2, p. 5].

By conclusions of O. Moroz, application of means of health-improving fitness in programs of correction of weight and to structure of body consist in "application as aerobic loadings which mobilize organism energy consumption directly during their performance which promotes reduction fatty body weight

components, and aerobic and anaerobic loadings power and high-speed and power to character what components considerably influence increase in size muscular, increasing intensity of the main exchange during the post-training period" [11, p. 143]. At the same time M. Gorobey notes expediency of such aerobic types of physical activity as walking, swimming, dances, tennis, etc. [5].

N. Georgiyeva [3] considers that inclusion to the maintenance of lessons of physical culture of exercises of fitness-system Pilates (safe set of exercises without shock loading what allows stretching and strengthening the main muscular groups, without forgetting at the same time and about smaller weak muscles, promotes removal of loading from waist and shoulder girdle) will promote the general improvement, prevention of diseases, correction of level of physical development and functional condition of the main physiologic systems of the pupil. Therefore, the researcher offers to the maintenance of lessons of physical education at school, including exercises, which will allow receiving knowledge and to make ability to lead to the balanced condition of muscle-flexors and extensors, to determine individual physiologic levels of ranges of movements for ability to possess own body. Also the researcher notes that inclusion to the maintenance of lessons of exercises on static yoga and corporally focused therapy, which provide active and passive breathing exercises, promote the development of ability to relax through concentration of attention. It provides inclusion of diaphragmatic breath which positively influences normalization of work endocrine and central nervous systems.

The researches of V. Biletskaya and V. Semenenko [14] are directed to the development and deployment of fitness-programs (aerobics, swimming and aqua-aerobics) in the process of physical education of children of the middle school age. Aerobics classes, by the conclusions of researchers, are aimed at the development of aerobic endurance, coordination, power abilities and flexibility. The main purpose of swimming – preservation and promotion of health, development of physical, mental qualities and motor abilities of pupils; increase in level of their physical fitness, formation of knowledge, skills of healthy lifestyle, respect for personal hygiene, training of organism, prevention of traumatism. The term "aqua-aerobics" is understood as possibility of use of combination of exercises of various orientation: games in water, options of applied and sports swimming and recreational and entertaining exercises from new nonconventional forms of physical activity. Scientists developed and introduced variable modules from the noted sports in the teaching-educational process of comprehensive educational institutions, which provided theoretical and general-physical training.

N. Goncharova, L. Denisova and V. Usichenko consider the question of use of modern information technologies in the sphere of health-improving fitness. In particular, the researchers note expediency of application of the computer program for the organization of independent classes on health-improving fitness "Yourself Fitness" (Respondesign in.). Classes is carried out in the form of video lesson with the virtual coach. Also the researchers note possibilities of application of the computer program Exlib (Norsk Video Digitech AS) what is the electronic diary of the training process. There is software product of four main sections –diary, program, reports and library. It is also possible to apply the computer programs Open Fitness to independent fitness classes; "Fitness Center" (developed by O. Guboreva), "Fitball training" (developed

by O. Lyadska). Such computer programs are possible for work of fitness-clubs for application: "Universe-Fitnes" and "Universe-Tennis", "Metalink Fitness Manager", "Metalink Water Complex", "Metalink Playground" which are directed to administrative support of activity of fitness-club. At the same time the researchers note that achievements of introduction of information technologies have the fragmentary character in Ukraine [4]. Fitness technologies of new century were enriched with programs which in foreign literature are integrated under the term "mined body", – "clever body". They are yoga, Pilates, taizi-tsyuan [2].

Also the scientists [4] note that ensuring automation of management of the enterprises, which specialize in this sphere, is one of the directions of application of computer programs in the sphere of health-improving fitness. Thus, use of information technologies gives the chance to solve wide range of the questions connected with work, the analysis of activity of the enterprise, to carry out process of planning of follow-up activity.

Also the considerable interest for our research is attracted by the perspective directions of realization of information technologies in the sphere of health-improving fitness, which are defined by N. Goncharova, L. Denisova and V. Usichenk, namely:

- granting opportunity to each person to receive knowledge of methods and construction means of improving classes, bases of healthy lifestyle, in form, evident and available to perception (videos, drawings, schemes);
- creation of conditions for ensuring computer and information literacy of people who go in for fitness;
- creation of system is information the advisory websites for information communication with leading experts and trainers [4, p. 165].

As it was noted by us above, the question of application of health-improving fitness as to means of correction of weight senior pupils is not reflected for today in scientific literature. Therefore, we consider that use of interactive technologies in the course of physical education of senior pupils and possibilities of their use for correction of weight consists in need:

- definition of motivational priorities for development of the fitness-program for correction of weight of girls of the senior school age;
- determination of level of somatic health of girls;
- determination of level of physical development of girls and development of scales qualifiers for assessment of indicators of weight and to structure of body of senior pupils for the purpose of selection of optimum exercise stresses;
- developments of innovative technology of correction of weight at girls of the senior school age on the basis of overwhelming use of means of health-improving fitness (video lessons with the virtual coach and selection of food allowance together with the nutritionist).

## Conclusions

1. The problem of correction of weight of girls of the senior school age is the problem of the urgent and low-studied in the system physical culture and sport. The analysis of scientific literature allows to note that fitness, which is considered by us as one of forms of physical culture, which has the consider-

able improving and sports potential, is one of effective remedies of correction of weight.

2. Modern fitness is characterized by application of wide range of rehabilitation programs, attraction and diversifies innovative, recreational technologies, individualization of computer fitness-programs. Health-improving fitness contributes to normalization of physical development of the personality, harmonizes exercise stresses and food, reduces risk level of emergence and the subsequent development of different diseases.

3. Application of fitness for correction of weight of girls of the senior school age predetermines need of definition of its most effective directions, improvements of forms of the organization of classes and effective selection of means and methods of physical education.

We see **prospects of the subsequent researches** in foundation of innovative technology of correction of weight at girls of the senior school age on the basis of overwhelming use of means of health-improving fitness.

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