Original Article

Program for correction of excessive weight in children during physical education classes at school

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ABSTRACT

Aim

is to improve the physical development and physical fitness of primary school children who are overweight through physical education.

Materials and methods

The study was conducted from January to May 2024 at the comprehensive school in Moscow (Russia). The pedagogical experiment involved schoolchildren who study in grades 1-4 who were diagnosed with obesity of varying degrees (72 children). Children in the experimental group did physical education with a separate instructor according to the experimental program, and schoolchildren from the control group studied in one with the rest of their class. Before and after the pedagogical experiment, all schoolchildren completed control tests that assessed their level of physical development and physical fitness.

Results

During the study period, the schoolchildren from the control group showed an increase in the indicators of less than 2% in the EVC, Height, Weight, BMI, Jump and Run tests ($p > 0.05$). In the RI test, the indicators improved from 10.3±1.6 to 9.4±0.65 ($t=0.52$; $p>0.05$), the increase was 9.6%. In the Torso test, the indicators improved by 11.5% ($p > 0.05$), and in the Jump Rope test, the result was higher by 14.6% ($p > 0.05$). In the experimental group, a reliable increase in the results was recorded in 7 of 9 tests. The smallest increase in results was noted in the Height test - 1.1% ($p>0.05$) and Run - 0.6% $p>0.05$. The EVC increased by 14.2% ($p<0.05$), the Weight decreased by 7.8% ($p<0.05$), the BMI decreased by 9% ($p<0.05$), in the Jump test the result improved by 9% ($p<0.05$). In the RI test the result improved from 10.9±1 to 7.1±0.75 ($t=3$; $p<0.05$), the increase was 53.5%, in the Torso and Jump Rope tests the indicators improved by 31.4% ($p<0.05$) and 38.3% ($p<0.05$), respectively.

Conclusion

The results of the study in the control group indicate the low efficiency of the standard physical education program in a comprehensive school for children aged 7-11 who have excessive weight; the program is more suitable for children who do not have health limitations. The results of the tests in the experimental group indicate the efficiency of using the experimental program for children aged 7-11 who have excessive weight. These schoolchildren should do physical education according to a special program and perform physical exercises that are feasible for them.

Keywords

Obesity; Physical activity; Physical exercise; Physical development; Physical fitness.

INTRODUCTION

According to the World Health Organization, more than a billion people worldwide are overweight. The problem of obesity is relevant even for countries where the majority of the population is constantly hungry, and in industrialized countries it has long been a serious aspect of public health.[1,2]

This problem affects all segments of the population, regardless of social and professional status, age, place of residence and gender. Thus, in Western European countries, 10 to 20% of men and 20 to 25% of women are overweight. In some regions of Eastern Europe, the proportion of people suffering from obesity has reached 35%. In Russia, on average, 30% of the working population is obese and 25% are overweight.[3,4]

The largest number of people with excessive weight is in the USA, overweight is registered in 60% of the population, and 27% are obese. According to experts, obesity is the cause of premature death of about 300 thousand Americans per year.[5,6]

Excessive accumulation of fat in the body and its deposition in subcutaneous tissue and other tissues and organs mainly occurs due to poor nutrition and low physical activity. Excessive body weight is prior to obesity, it is based on already formed metabolic disorders.[5,7]

Obesity is not only excessive body weight, it is a decrease in immunity, diseases of the heart, blood vessels, kidneys, liver, musculoskeletal system, which contribute to the development

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of diabetes and other endocrine disorders, and causes impaired puberty.[8,9] There is a growing incidence of obesity in children and adolescents everywhere, which is a serious social and medical problem.[10,11]

As a rule, people treat obese people with disdain and irony, which can cause psychological trauma, especially children and adolescents suffer from this. Ironic comments from peers and adults negatively affect self-esteem, lead to the formation of complexes, make the problem worse. It is difficult for overweight people to find a decent job, and they often cannot find a partner.[12,13]

The need for movement and physical activity is a characteristic feature of a growing organism. Unfortunately, an adult feels a much smaller need for movement than a child. But movement is as necessary as food and sleep, especially in childhood.[14,15]

It has been established that children with excessive body weight are twice as likely to develop asthma as children with normal body weight. It is assumed that excessive body weight can increase the load and pressure on the airways in the lungs, thus leading to their closure.[16,17]

The health threat is created by modern children's addiction to television programs, computer games, fast food, from which they get too much fat, sugar, salt, and they eat too little fruit and green salads. As a result, it turns out that the daily caloric intake of food increases by 30%, and energy expenditure, due to a sedentary lifestyle, does not occur.[18,19]

Motor insufficiency goes completely unnoticed, and is often even accompanied by a feeling of comfort. The impact of physical exercise on the human body is extremely great.[20,21]

When working out, schoolchildren acquire the motor skills necessary in everyday life and work. Dexterity, speed and strength of body movement develop. Movement control, which is carried out by the central nervous system, is improved. When doing physical exercises, new conditioned reflexes are formed, which are fixed and formed into long consecutive rows. Thanks to this, the body acquires the ability to better adapt to large and complex physical loads, it becomes easier and more economical to perform movements, that is, the body is trained.[22-24]

Unfortunately, physical education classes in modern schools are structured in such a way that schoolchildren from the preparatory medical group and some children from the special medical group are engaged in physical education according to the programs of the main group, that is, it is implied that they must perform all the physical activities planned by the program. However, the presence of obesity, which very often causes dysfunction of many internal organs, does not allow purely functional physical activity in full during physical education classes.[25,26]

Taking into account the physical condition and level of physical fitness, obese students are given the opportunity to independently regulate the amount of physical activity, reducing it by decreasing the time of exercise, which can lead to a decrease in the effectiveness of physical education classes for these schoolchildren.

Therefore, physical education classes for this category of children should be conducted according to specially developed programs that provide for the selection, intensity and volume of physical activity in accordance with the functional capabilities of the body.

The scientific problem consists in developing an experimental program, selecting means and methods of physical education for the correction of excessive body weight in primary school children in the classroom.

The aim is to improve the physical development and physical fitness of primary school children with excessive body weight by means of physical education.

Tasks:

1. To study the causes of obesity in primary school children.

2. To analyze the means and methods of physical education of primary school children with excessive body weight.

3. To develop an experimental program for the correction of excessive body weight in primary school children in the classroom and to test its effectiveness.

MATERIALS AND METHODS

The study was conducted from January to May 2024 at the comprehensive school in Moscow (Russia).

The pedagogical experiment involved schoolchildren who study in grades 1-4 and who are diagnosed with obesity of varying degrees. When selecting participants of the study, medical records of students aged 7-11 were used, where, based on the results of annual medical examinations, body weight, body weight gain, the child's diagnosis are indicated, and the medical health

group is determined. Physical education classes were held according to the school schedule three times a week for 40 minutes.

There are 479 schoolchildren who study in grades 1-4 in this Moscow school, out of who 72 students are diagnosed with obesity. The largest number of students with the diagnosis of obesity was found in grades 1 "B" (7 people), 2 "A" (5 people), 2 "G" (6 people), 3 "B" (6 people), 4 "A" (7 people) and 4 "C" (5 people). These schoolchildren made up half of all children diagnosed with obesity in the junior comprehensive school; they made up the experimental group (EG). These children did Physical Education according to the time-table according to the experimental program, a separate physical education instructor taught them. All other schoolchildren (36 children) who studied in the junior grades of the comprehensive school studied together with their classmates under the guidance of a physical education teacher and performed exercises that were feasible for them, followed the recommendations of the basic physical education program at school; they made up the control group (CG).

Exclusion criteria:

1. Children who were not diagnosed with obesity or were beyond the age range of primary school age (7-11 years).
2. Children who missed half of their physical education classes at school during the study period.
3. Children who were engaged in additional physical activity that could affect the final result of the pedagogical experiment.

The experimental physical education program for each lesson included sets of physical exercises that could be performed by all children with varying degrees of obesity. Those children whose weight was close to normal performed the exercises more intensively, thus increasing the number of repetitions and series. Each child could choose a load that was feasible for them.

For example, the warm-up included the following exercises:

1) bending the body to the right and left sides, keeping hands on the waist (10-15 times);
2) spreading arms to the sides and bending forward, while the right palm should touch the left knee, and the left hand should touch the right knee (5-6 sets);
3) circular rotations of the torso with hands that are fixed on the back of the head (at least 10 times in different directions);
4) bending and pulling the knee to the chest in the lying position (5-6 repetitions with each leg);
5) raising the toes of the legs in the upright position, the movement is performed with a deep breath. Then after exhaling, it is needed to lower the body into a squat (8-10 sets);
6) lying on the back, arms along the body, legs bent at the knees, feet pulled up to the glutes as much as possible, fix at the highest point and hold for 5 seconds when raising the glutes, repeat at least 15 times;
7) imitation of cycling in the lying position on the back, legs raised above the floor to a suitable height, 5 sets of 40 seconds with a break of 5 seconds;
8) starting position on the back, put the hands behind the head and roll first to the left, then to the right for 1 minute, only the back muscles work;
9) starting position kneeling, arms extended forward, squat on the hip and immediately stand up, repeat 10 times in each direction;
10) finish the warm-up by walking with high hip lifts and slow inhalations and exhalations for 7-10 minutes.

After the warm-up, the exercises of the main part of the lesson were performed, as a rule, these were strength exercises that had to be performed at a slow pace:

1) starting position standing, arms raised up and clasped together, feet shoulder-width apart, lean to the left for 5 seconds, and spend 10 seconds returning to the starting position. 4-8 sets in each direction;
2) starting position standing, lunge backwards alternately with the right and left legs, while the arms are lowered down (10-15 repetitions);
3) starting position standing, leaning against the wall, place the feet so that the heels extend approximately 10 cm beyond the pelvis line, and 30 cm from the wall. Place the hands on the waist. Slide the back along the wall until the hips are parallel to the floor. Hold this position for 10 seconds and return to the starting position (repeat 6 times);
4) starting position standing straight, feet shoulder-width apart, take a 1-3 kg dumbbell in each hand.

Raise the arms to the sides to ear level for 10 seconds, pause and lower the arms (5 seconds). Repeat the exercise. (8 repetitions);

5) starting position lying on the back, arms extended forward and clasped. Slowly raise the head, shoulders, and upper back from the floor. Then smoothly turn the torso to the left, trying to reach the left knee with the clasped hands. The entire movement is performed for 10 seconds. Hold at the top of the movement, then return to the starting position for 5 seconds, repeat the exercise 8-10 times in each direction;

6) starting position lying down, arms straight, body tense. Bending the arms, lower to the floor for 10 seconds. Touching the floor, put the knees on the floor, raise the chest, straighten the arms, then lean on the toes (repeat 8-10 times);

7) starting position lying on the back, arms extended along the body, palms facing the floor. Bend the knees and press them to the chest. Gradually lift the glutes and lower back off the floor, pressing the palms into the floor for balance (for 10 seconds). As soon as the lower back takes the position at the angle of 45° to the floor, return to the starting position in 5 seconds (8-10 times);

8) starting position lying on the side, lower leg bent, foot of the upper leg parallel to the floor. When exhaling, lift the leg all the way up, when inhaling, lower it. Repeat 10 times and change the position of the legs;

9) starting position lying on the stomach, leaning on the hands. When exhaling, lift the leg up, when inhaling, slowly lower it down. Repeat 10 times on each leg.

10) starting position lying on your stomach, legs straight, arms crossed at the waist. When exhaling, raise the head and chest, hold for a moment in the uppermost position, inhale and return to the starting position (repeat 12 times);

11) starting position lying on the back, knees bent, feet on the floor, arms crossed on the chest. When exhaling, raise the head, shoulders and shoulder blades, when inhaling, slowly lower the body to the floor (repeat 12 times);

12) starting position lying on the side, legs bent at the knees, one arm from above bent behind the head, the other arm from below lies on the waist. When exhaling, pull the upper body to the side, when inhaling, return to the starting position. Repeat 10 times on each side.

If the exercise seems easy enough, then the number of repetitions for each student is individually increased, a gradual increase in load and the correct technique for performing each physical exercise are important.

At each lesson, to interest the students, the exercises were replaced by others, and their sequence can also be changed. The systematicity and consistency of pedagogical influence affects the formation of a motivational belief in the need for physical exercise for personal health, self-confidence. Learning some motor actions and changing them ensures continuity, an appropriate order and sequence of loads, its direction, magnitude and dynamics, taking into account the individual capabilities of the students.[23,26]

At the same time, after each physical education lesson, children were given standard recommendations on nutrition rules:[10,15]

1) never overeat;

2) do not snack between meals or late at night;

3) eat slowly, chewing food well;

4) eat four times a day.

Testing students

Before and after the pedagogical experiment, all schoolchildren completed control tests that characterize the level of physical development and physical fitness. These tests have no contraindications for children who are overweight.[3,6]

1. Tests for assessing physical development:

a) expiratory vital capacity (EVC) is a value equal to the volume of air that a child can exhale after taking the deepest possible breath. EVC characterizes the state of the external respiratory system, allows assessing the physical development of children, diagnose various diseases. Testing was carried out to assess the functional state of the respiratory system using a special spirograph device;

b) anthropometric indicators: measuring height and weight;

c) determination of the body mass index (BMI) = Quetelet index, which is determined by the formula BMI= m/h2; where m is body weight (kg), his height

(m). BMI is a value that allows assessing the degree of correspondence between weight and height and thereby indirectly assess whether the weight is insufficient, normal or excessive. The result was determined by the following indicators: BMI up to 25 is normal, 25-29.9 is overweight, 30-34.9 is the first degree of obesity, 25-39.9 is the second degree of obesity, 40 and above is third degree obesity;

d) the Ruffier index (RI), used to assess the state of the cardiovascular system and physical performance. The pulse, checked when lying on the back, is determined for 15 seconds (P1) for 5 minutes; then the participant performs 30 squats for 45 seconds. After the end of the load, the participant lies down and pulse is again counted for the first 15 seconds (P2), and then for the last 15 seconds of the first minute of the recovery period (P3). Heart performance is assessed using the formula: IR= (4 × (P1 + P2 + P3) – 200) /10. The results were assessed using the following scale: 0-5 – excellent heart performance, 5-10 – good performance, 10-15 – average, 15-20 – satisfactory, and more than 20 – low performance.

2. Tests for assessing physical fitness:

a) Raising and lowering the body in the lying position (Torso), hands behind the head, legs fixed. The maximum number of movements performed in 30 seconds is recorded;

b) Standing long-jump (Jump). Starting position – stand with the toes toward the starting line, jump with a push-off of both legs simultaneously with an arm swing. Two attempts are made, the best result from the starting line to the landing point on the heel (cm) is counted;

c) Jumping rope (Jump rope). Two attempts are made, the best result is counted - the number of jumps in 20 seconds;

d) Running 30 m (Run). The result is recorded with the accuracy of 0.1 sec.

Mathematical processing of the results was carried out in Excel. The reliability of the study results was calculated using the Student's T-test in the Bio-statistics 2023 program. The result was statistically significant at $p<0.05$.

Ethical clearence

All procedures complied with the ethical standards of the Helsinki Declaration and were approved by the ethics committee of the local university. Informed consent was obtained from each parent. Students of the school could opt out of participating in the study at any time.

RESULTS

All schoolchildren completed control tests before the beginning of the pedagogical experiment. Table 1 presents the comparative analysis of intergroup indicators of physical development and physical fitness of primary school children with excessive body weight in the control and experimental groups at the beginning of the pedagogical experiment.

Table 1. Indicators of schoolchildren aged 7-11 before the start of the study

Tests	CG (n=36) M±m	EG (n=36) M±m	Reliability of results	
			t	p
EVC	1,29±0,09	1,39±0,07	0,9	p>0,05
Height	127,5±1,6	127,1±1,4	0,19	p>0,05
Weight	42,6±1,3	41,6±0,9	0,6	p>0,05
BMI	26,23±0,5	25,49±0,3	1,14	p>0,05
RI	10,3±1,6	10,9±1	0,3	p>0,05
Torso	10±1,2	11,6±1	1,27	p>0,05
Jump	116,7±5	111,7±4,2	0,77	p>0,05
Jump Rope	8,8±1,3	8,2±1,3	0,33	p>0,05
Run	8,34±0,38	8,25±0,38	0,17	p>0,05

Table 1 shows that the indicators of physical development and physical fitness of children between the experimental and control groups at the beginning of the experiment are not significant and not reliable ($P> 0.05$). The results obtained allow us to speak about the homogeneity of children in the experimental and control groups. After the end of the pedagogical experiment, all children retook the control tests (Table 2).

Table 2. Indicators of schoolchildren aged 7-11 after the study

Tests	CG (n=36) M±m	EG (n=36) M±m	Reliability of results	
			t	p
EVC	1,3±0,06	1,62±0,07	3,5	p<0,05
Height	127,7±0,9	128,5±0,9	0,63	p>0,05
Weight	41,9±0,65	38,6±0,86	3,3	p<0,05
BMI	26±0,52	23,38±0,7	3	p<0,05
RI	9,4±0,65	7,1±0,75	2,3	p>0,05
Torso	11,3±0,97	16,9±0,75	4,6	p<0,05
Jump	117,1±2,7	122,7±1,5	1,86	p>0,05
Jump Rope	10,3±0,65	13,3±0,75	3	p<0,05
Run	8,24±0,18	8,2±0,17	0,16	p>0,05

Table 2 shows that by the end of the pedagogical experiment some indicators changed in favor of the experimental group, they became significant and reliable, namely, EVC, Weight, BMI, Torso and Jump Rope. These results allow us to conclude that children from the experimental group are superior to schoolchildren from the control group. The change in indicators from the beginning to the end of the study in the control group is presented in Table 3.

Table 3. Indicators of schoolchildren aged 7-11 years in the control during the study period

Tests	Before the study M±m	After the study M±m	Reliability of results	
			t	p
EVC	1,29±0,09	1,3±0,06	0,1	p>0,05
Height	127,5±1,6	127,7±0,9	0,11	p>0,05
Weight	42,6±1,3	41,9±0,65	0,48	p>0,05
BMI	26,23±0,5	26±0,52	0,32	p>0,05
RI	10,3±1,6	9,4±0,65	0,52	p>0,05
Torso	10±1,2	11,3±0,97	0,84	p>0,05
Jump	116,7±5	117,1±2,7	0,07	p>0,05
Jump Rope	8,8±1,3	10,3±0,65	1	p>0,05
Run	8,34±0,38	8,24±0,18	0,25	p>0,05

Table 3 shows that changes in the indicators of physical development and physical fitness of primary school children with excessive body weight in the control group from the beginning to the end of the experiment have a positive trend, but they are not significant and are not reliable (P>0.05). Table 4 shows changes in indicators from the beginning to the end of the study in the experimental group.

Table 4. Indicators of schoolchildren aged 7-11 in the experimental group during the study period

Tests	Before the study M±m	After the study M±m	Reliability of results	
			t	p
EVC	1,39±0,07	1,62±0,07	2,35	p<0,05
Height	127,1±1,4	128,5±0,9	0,84	p>0,05
Weight	41,6±0,9	38,6±0,86	2,4	p<0,05
BMI	25,49±0,3	23,38±0,7	2,7	p<0,05
RI	10,9±1	7,1±0,75	3	p<0,05
Torso	11,6±1	16,9±0,75	4,24	p<0,05
Jump	111,7±4,2	122,7±1,5	6,54	p<0,05
Jump Rope	8,2±1,3	13,3±0,75	3,4	p<0,05
Run	8,25±0,38	8,2±0,17	0,07	p>0,05

Table 4 shows a positive increase in the results for all tests in children from the experimental group. Schoolchildren who studied separately with an instructor according to a special program were able to significantly and reliably improve 7 of the 9 indicators under study. Probably, the unreliable but positive increase in the results of the remaining 2 indicators (Height and Run) is due to the insufficient duration of the pedagogical experiment. The increase in indicators from the beginning to the end of the study in both groups is shown in Figure 1.

If the results of both groups during the study period, Figure 1 shows a noticeable superiority of the children in the experimental group, which allows us to

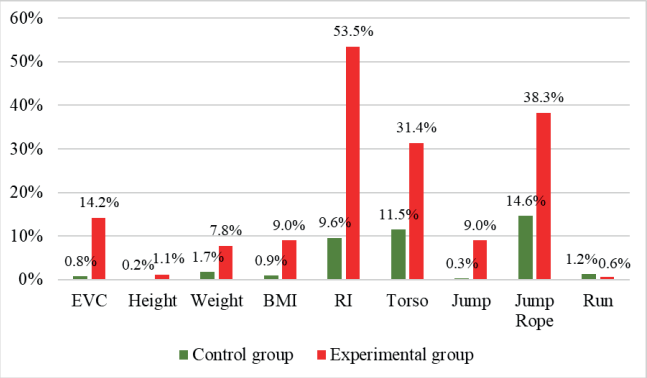

Figure 1. Increase in indicators during the study period in both groups.

conclude that the proposed program for using physical rehabilitation tools to correct excessive body weight in primary school children in classroom settings is effective.

DISCUSSION

Obesity is a disease associated with the accumulation of fat in the body, leading to an increase in body weight by 15% or more from the average values.[1,2] Obesity in children and adolescents is one of the most pressing problems of modern health care. Almost all over the world, the number of children with excessive body weight is steadily increasing, doubling every three decades.[3,27] Meanwhile, it is believed that 30-50% of obese children retain this disease in adulthood.[5,28]

Childhood obesity leads to the fact that diseases that were previously considered adult - high blood pressure, high cholesterol, diabetes mellitus begin to occur in younger people.[7,10]

The analysis of the causes and classification of obesity showed that obesity occurs when calorie consumption exceeds energy expenditure.[8,29] That is, a person consumes more fat calories than are burnt. Several processes play an important role in the development of obesity: genetic factors, dietary factors, abnormalities in energy expenditure, and increased accumulation of ingested calories. Increased appetite may also play a role in the development of obesity, although this factor probably accounts for only part of the problem.[12,15]

Age plays a significant role in the development of obesity, which is why there is even a special type of obesity - age-related. This type of obesity is associated with age-related impairment of the activity of a number of special centers of the brain, including the appetite center.[16,18] In addition, a decrease in the activity of the thyroid gland, which produces hormones involved in metabolism,[19,30] is of great importance in the development of age-related obesity.

The second most important factor leading to the development of obesity is low physical activity, when even a normal amount of food intake is excessive, since the calories that enter the body with food are not burned during physical activity, and turn into fat.[13,14]

If excessive body weight in children of primary school age is not dealt correctly and is constantly progressing, then serious complications or even death may develop later. Now there are many programs that help fight excessive weight, but this is not always effective, since a person returns to usual way of life.[9,11]

The literature analysis showed that patients with obesity are often recommended to use morning hygienic gymnastics, therapeutic gymnastics, exercises on exercise machines, dosed walking, special physical exercises in the pool, swimming in open water, running, hiking, rowing, cycling, skiing, skating, active and sports games. In Europe, non-traditional types are used (athletic gymnastics, sports aerobics, hydroaerobics, stretching gymnastics, shaping). There are also eastern non-traditional exercise systems (Yoga, Wushu, Qigong).[15,16]

Based on the analysis of several programs for weight loss and improvement of physical development and physical fitness of primary school children with excessive body weight, the most effective means and methods of influence in physical education lessons with children diagnosed with obesity were selected.[10,13]

During the pedagogical experiment, the indicators of schoolchildren from the control group improved in all tests, but the increase in indicators was not significant. Thus, in the EVC, Height, Weight, BMI, Jump and Run tests, the increase in results was less than 2% ($p>0.05$). In the RI test, the indicators improved from 10.3±1.6 to 9.4±0.65 ($t=0.52$; $p>0.05$), the increase was 9.6%. In the Torso test, the indicators improved by 11.5% ($p>0.05$), and in the Jump Rope test, the result was higher by 14.6% ($p> 0.05$). Such results in the control group indicate the low efficiency of the standard physical education program in a comprehensive school for overweight children aged 7-11.

In the experimental group, during the period of the pedagogical experiment, the results in all tests also became higher, a reliable increase in results was recorded in 7 out of 9 tests. The smallest increase in results was noted in the Height test - 1.1% ($p > 0.05$) and Run - 0.6% $p > 0.05$. EVC increased by 14.2% ($p<0.05$), Weight decreased by 7.8% ($p<0.05$), BMI decreased by 9% ($p<0.05$), in the Jump test the result improved by 9% ($p<0.05$). The maximum increase in results is noted in the RI test, from 10.9±1 to 7.1±0.75 ($t=3$; $p<0.05$), the increase is 53.5%, the indicators in the Torso test also significantly improved, they rose by 31.4% ($p<0.05$) and in the Jump Rope test the growth is by 38.3% ($p<0.05$). These results of children from the experimental group indicate the effectiveness of the experimental program for children aged 7-11 who are overweight.

The theoretical significance of the study lies in supplementing and expanding knowledge in the field of physical education of primary school overweight children in classroom.

The practical significance of the study lies in developing practical recommendations for the use of a set of physical education exercises to correct excessive body weight in primary school children.

The problem of excessive body weight is quite relevant at all times, but every year it becomes more acute and it is necessary to take effective steps to solve it. Increasing the physical activity of schoolchildren is the simplest thing that can be done in everyday life, especially within the framework of a school physical education lesson, but this must be done by generalizing the best practices and studying the developments on the problem. The selection of the most effective and feasible means for primary school students, a certain dosage of load components, a rational approach to the methods and principles of physical education made it possible to draw up a program to reduce excessive body weight and improve not only the physical development of children aged 7-11, but also increase the level of their physical fitness. Undoubtedly, the study can be continued and supplemented with new tests reflecting the level of development of children's physical qualities or their functional training.

CONCLUSION

The results of the study in the control group indicate the low efficiency of the standard physical education program in a comprehensive school for children aged 7-11 who are overweight; the program is more suitable for children who do not have health limitations. The test results in the experimental group indicate the efficiency of using the experimental program for children aged 7-11 with excessive weight. Such schoolchildren should do physical education according to a special program and perform feasible physical exercises, and then they will be able not only to correct their physical development, but also to improve the results of physical fitness.

In addition to doing physical exercises, it is necessary to follow a proper diet (do not skip meals, avoid overeating), increase the consumption of vegetables and fruits, reduce salt intake, control weight, follow a sleep schedule, avoid stressful situations (use relaxation techniques) and give up bad habits.

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