

BADMINTON FOR THE PHYSICAL FITNESS OF ADOLESCENTS

(Preliminary communication)

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Abstract

This article presents experimental method for the improvement of the coordination and motor skills such as speed, agility and endurance performance of 9 - 11- year old badminton players. Totally 72 boys and girls participated in the research, divided into two groups - experimental and control one. Traditional training methodologies with the control group were used; in the experimental group, an experimental program was implemented. Surveying implemented experimental method, positive impact on the development of the studied abilities was obtained. Developed, practice and science based programme and specific method for the improvement of the initial training of 9-11-year old badminton players positively influence their physical ability.

Keywords: *physical development, motor skills, motor speed, agility, endurance, boys, girls, parents, control group, experimental group, training process, sports sections, sports clubs*

INTRODUCTION

It is well known that badminton is one of the most popular sports in the world. Unfortunately, over recent 20 years the so-called massive and children youth sports in Bulgaria have almost disappeared. There are numerous reasons for that but as a consequence one can notice a sharp decline of adolescents' physical activity definitely leading to deterioration of their general physical and psycho-emotional development. *It is a common fact that:*

- Students spend on average 3 hours a day in front of TV or computer;

- Only one-third of them at the age from 12 to 18 regularly do physical exercises and practice some sports;

- Some data from the World Health Organization for 2008 show that 1,5 billion people in the world above the age of 20, are overweight. The number includes over 200 million obese men and approximately 300 million overweight women. Experts claim that if the frequency of getting fat and overweight rises with the same rates as during the recent years it is expected that till 2015 almost 2,3 billion people in the world will get overweight, and more than 700 billion people will be obese.

Is there any tendency to increase the number of people in Bulgaria with overweight and obesity?

According to a representative survey of MBMD among 703 citizens of the capital, regional and other towns, administered from 11-16. 05. 2011 and ordered by the Bulgarian Fitness and Bodybuilding Federation, 57% of the children in Bulgaria are overweight, 35% from the overweight have obesity.

The numbers are particularly alarming in primary schools pupils. More than 15% of them are obese or overweight. More than 18 % of the Bulgarian children are overweight, and 22 % of them are obese. There is a risk of 70 % of the overweight teens to stay overweight when they grow up.

More than 85% of the children diagnosed with diabetes type 2 are overweight or obese. Sleep Apnea can be seen at approximately 7% of the overweight ones.

In spite of all efforts to overcome this negative tendency, it continues to be a fact. Adolescents continue to consume fatty foods and a lot of pasta, combining it with a low physical activity. *This is quite a serious problem with adolescents.* It is due on the one hand to the ineffective Physical Education and Sports classes, particularly at the early school age, when teachers are not specialists. Often the roles of the teachers of Physical Education and Sports up to the 4th grade are overtaken by the class teachers, officially charged to do it.

EXPOSITION

Year in year out students move less and do fewer sports. Their physical activity is low. *Why?* Unfortunately, the observations of pediatricians and teachers, the questionnaires show that *because of the lack of physical activity a generation of ill and uncommunicative people grow*. A lot of research (Ilieva (Илиева, 2009; Simeonov (Симеонов) & Momchilova (Момчилова), 2008; Ilchev (Илчев), 2006a) prove that movement is necessary for children to develop properly. Moreover, exercises and games ensure happy experiences.

Participation in various kinds of physical activities sharply reduces the risk of diseases and improves school results. It is important for the physical activity to become a part of the student's daily life. The research of I. Ilchev (2006b, 2009 г.) shows that if sport activities are a priority they will provide strong basis for a healthy life.

Parents play an important role in providing the participation of pupils in an active motor activity.

It is necessary to:

- *Carry out a conversation* with a pediatrician. He could help the student to realize why the motor activity is important and to offer him appropriate sport ;

- *Choose a funny sport* the child would enjoy. The more he enjoys the movements and the game, the better motivation he would get to continue training;

- *Plan* in advance the number of trainings, time and space for them;

- *Ensure* safe environment, suitable and comfortable equipment.

- Parents are a *role model*. Students who regularly see their parents do some sports are more inclined to follow their example.

- *Reduce* the time for watching TV and using the computer. It is recommended not more than 1 - 2 hours a day in front of the screen.

- *Preparation of homework*, lessons and other school activities should be carried out at a certain time without overdoing the requirements.

Badminton for children – why and when?

As I have already pointed out in some of my other articles about badminton, I. Ilchev (2006a), this is a sport which develops to a great extent a harmonious skeleton and muscular apparatus of children, helps form an excellent figure, supports their right development. Foremost, children do what they like thus arousing their love towards sports.

Why is sport so important for the adolescents, why should they play badminton and what are the advantages for their physical and mental health?

1. *Avoiding* immobilization and various illnesses (poor eyesight, weight, spinal problems and unbalanced posture, muscle weakness and slow reflexes) etc.

2. Each badminton exercise *positively influences general physical training*. Playing badminton engages all body muscles, and the distribution of load, considering its capacity and intensity, is not difficult and could be balanced. The cardiovascular system works in a special regime. It positively influences proper development of

bones, as well as the prophylaxis, treatment and rehabilitation of the spinal diseases.

3. *The character changes* - Moral and volitional qualities are educated: industry, persistence, perseverance, courage, etc. Children acquire skills for coping with difficulties by themselves in strange (extreme) situations in real life.

4. *Children develop* communication skills in a normal offline environment, which positively influences the trainees for a long period of time. Socializing, finding new friends, positive emotional experiences, getting new interests are important for their personal development. Their skills for team work are purposely developed; their personality is formed individually. Badminton helps children establish new social contacts, make friends and strong relationship with adults – represented by the coach.

5. *It develops* coordination of movements, *spatial orientation*, equilibrium resistance and basic physical qualities (speed, endurance, strength, resilience, agility).

6. *It improves* the mental qualities of the adolescents – logical and combinative thinking. Concentration of attention rises.

7. *Plays in the open ensure* a direct contact with Nature and fresh air. Their health strengthens up.

8. *Students have the ability to* achieve success, to invest their efforts and emotions in something constructive, which could have a result – if not winning cups and medals, at least obtaining a good physical training.

9. Their desire for victory *rises* and they strive to do their best.

10. *It helps* their self-esteem enhancement and keeps away the problems with overweight. They enlarge their imagination and creativity. Specific movements while playing various shuttlecocks in defense and attack with their techniques assist relaxation of mind, assure active, healthy and peaceful life.

11. *Badminton assists* the prevention of stress. Busy way of life, full of academic pressure, difficult homeworks, video and computer games overload the every day life of the trainees. Badminton teaches them to cope well with the challenges of life.

12. *Game encourages* their positive attitude, self-awareness and better expression. Those, who train badminton acquire better self-assurance, better self-confidence. When doing specific elements of the game technique, they control better their body and feel comfortable.

Special game exercises (quick reaction on a signal, shuttlecocking in different directions, various shuttlecocks, etc.) keep heart and lungs healthy, hold the body tone, enhance resilience and strength, protect children from overweight problems. They enable children's physical activity.

It is better to start enrollment for *badminton training at the age of 6 - 7*. This age is optimal for initial training as the child can judge for himself how to do a given exercise, what result he would get in case he does

it one way or the other. As with all other sports, badminton requires certain regime and perseverance.

The earlier the training process starts the better and the success is more likely to be achieved. Students taught at sports sections or clubs are more independent, organized, better manage their schooling in comparison to those spending their leisure time at home or in the street. They observe work mode, rest, sleep and self-control.

Improvement of the initial badminton training of adolescents is in close connection to and dependence on the proper choice of means, methods and the organization of school-training process. Apart from proven effective training methods, newer and more contemporary training approaches have been used for the improvement of the initial badminton training for boys and girls 9 to 11 years old.

It is necessary to bear in mind that to achieve good results, in the beginning, trainings are conducted twice-three times a week. Moreover, the exercises are targeted and not always interesting and funny. Chassis and moderate strength training are common and necessary elements of the training process.

The benefits for the child's health will be greater, if the adolescent likes the activities and he trains willingly. That is why his physical as well as psycho-emotional state should be observed. The most important for the

child is to have pleasure and to show interest in the activities. Enrolling the child for badminton, especially in a sports club, one should realize that he can get a lot.

Table 1 represents the content and number of training activities of pupils 9 to 11 years old.

Loading in childrens' badminton should correspond to the abilities and psychological predisposition of the trainees. That is why not all pupils can be taught to play well, or even to become excellent sportsmen. The most important is to consider properly child's individual abilities and interests. Then each activity will be in his use and will develop his abilities more harmoniously. **It is important to jump and run, to develop physically and intellectually.**

Best specific badminton trainings for pupils from primary schools, influencing positively their physical capability are listed in (Table 2).

METHODS

The research was conducted in the city of Ruse in 2006 - 2007. Totally 72 boys and girls participated, divided into two groups - experimental - 36, (E gr) and control - 36 (C gr). Traditional methodologies of training were used *in the Control group. Specific priorities in the experimental programme were:*

1. Purposeful training for complex development of coordination and motor skills of the trainees;

Table 1. Content and total number of training sessions

Content	Number of training sessions						Number of activities		
	Weekly			Annually			9 y.	10 y.	11 y.
	9 y.	10y.	11y.	9y.	10y.	11y.			
I. General-preparatory exercises	3	3	3	110	115	120			
1. For space orientation							2	2	1
2. For accuracy of movements							2	2	1
3. For speed of motor response							2	2	1
4. For skill							3	2	2
II. Special-preparatory exercises – simulation with and without equipment	3	3	3	110	115	120			
1. Exercises for mastering the technique of holding the racket							2	2	1
							4	3	2
2. Shuttlecock exercises									
3. Exercises for mastering the art of movement in court							3	2	1
							4	3	2
III. Sports-preparatory games, relay games, ports games	3	3	3	110	115	120			
IV. Exercises for mastering the technique of the sports game badminton	3	3	3	110	115	120			
1. Racket skills (grips, forehands and backhands hits)							4	5	6
2. Movement in court							4	3	2
3. Sports-preparatory games, relay games, sports games							6	5	5
V. Mastering the training technique: with the racket, shuttlecock, movement in court	3	3	3	110	115	120	3	4	5
VI. Mastering some tactical actions	3	3	3	110	115	120	2	2	3
Total	18	18	18	110	115	120	41	37	32

Table 2. Sample general-preparatory and special-preparatory exercises for 9-year old badminton players

№	Technical elements	School-training content	Time	Methodological guidelines
1.	Grip	1. Technique of correct grip 2. Implementation of mild strokes with racket By the wrist (overhead and sideways) upright posture with parted legs. 3. Implementation of mild strokes with racket by the wrist (overhead and sideways),combined with walking. 4. Juggling with a shuttlecock in place with the front side of the racket. 5. Juggling with a shuttlecock in place with the front and back side of the racket.	10 min 3 min 3 min 3 min 3 min	Trainer's demonstration and explanation about the technique and the importance of proper adoption of correct grip. The necessity of correct grip is explained. Body upright,the hand is raised, slightly flexed at the elbow joint on swings overhead. With sideways swings the arm is stretched horizontally. Body upright, gaze is directed forward. Body upright, eyes follow the shuttlecock. The correct grip is observed. The shuttlecock is slightly hit. Body upright, eyes follow the shuttlecock. Correct grip is required.
2.	Tee (service)	1. Tee technique 2. Training tees with the help of the coach, starting position-upright posture with parted legs. 3. Training servings against a wall, ST-upright posture with parted legs.	10 min 5 min 10 min	Trainer's demonstration and explanation of the proper technique for the implementation of the tee.The most important moments from the implementation of the tee are explained.The coach sticks striking hand and the hand with the shuttlecock, indicating the time to place the shuttlecock and the time to strike the falling shuttlecock. First the shuttlecock is released, then the racket is navigated to hit. Each player faces the wall (several metres aside) and seves at a point on the ceiling or high in the wall. The correct grip is observed, the shuttlecock should be hit underneath and legs should not be separated from the floor.
3.	Stroke (forehand) top	1. Technique of the basic stroke in badminton 2. Simulation implementation of stroke, ST with parted legs square the net. 3. Implementation of strokes at shuttlecocks bound to a certain height, ST parted legs 4. "Multi shuttle"	10 min 20 times 20 times 3 series x 10 shuttlecocks	Technique of movement in court for the implementation of the basic stroke in badminton. The demonstration should be technically correct and visual for the trainees. The body is squire the net, parted legs- width shoulders, the racket is released behind the back and elbow pointing up, the other hand is raised forward and upward, gaze is forward and upward. There is implimentation of a stroke at imaginary shuttlecock, while striking, bouncing back and the body rotates at 180°. Gaze is towards the shuttlecock, body rotates when striking, correct grip is observed. Quick serve of shuttlecocks in various directions by coach or partner.
4.	Movement in court	1. Technique of movement in court 2. Implementation of movement „back forward“ in court with the help of the coach. 3. Implementation of movement „back forward“ combined with strike at the shuttlecock from the back line and touching the net forward by the racket. 4. Implementation of movement in court in the four corners with the help of the coach.	10 min 10 min 3 series x 10 reps 10 min	Trainer's demonstration and explanation of the proper technique for movement in court. Demonstration should be technically correct and visual for the trainees. Shuttlecock should be raised, trainees run forward, with normal paces, and backward side, shuttlecock is behind the back in a position for stroke. Net is reached by the leg homonymous to the striking arm, while the arm with the shuttlecock is stretched and slightly touches the net. During movement racket should be raised. Correct movement of legs is observed. Before reaching each corner trainees obligatory passes the centre of the court, as for the movement backwards, the body prepares for the back strike.

Note: „ST” – starting position

2. A variety of tools for technically correct assimilation of the elements of badminton and development of basic tactical skills;

3. Regulation and self-regulation of mental conditions of young badminton players

4. Implementation of effective learning approaches;

5. Development of volitional attention;

6. Rational ratio of the number of developed sets of exercises and load for each cycle and age;

7. Implementation of "Multi shuttle" method, trainings of the type "Triangle" and "Quadrangle", etc.

Giving knowledge of terminology and game rules accompanies continuously the whole period of training.

RESULT AND DISCUSSION

How does badminton influence physical fitness of pupils from 9 to 11 years old

1. *It can be seen in Table 3 that the speed of boys and girls from E gr. lends to intensive development. This can be explained, as there are specially targeted exercises, used during training sessions.*

This fact is supported by the existing favourable biological conditions for the relative increase in speed, namely relatively easy conversion of conditioned reflex connections and the high plasticity of the central nervous system of adolescents. The work of developing this ability is in accordance with individual morpho functionality of the young badminton players.

2. The better effect in E gr stands out also with the ability for endurance in Table 4

Table 3. Comparative terminal data studying the speed of 9 - 11-year old badminton players, „ Running 50 m”, (sec).

Age	Boys		Girls	
	E. group	K. group	E. group	K. group
9	8.92	11.38	10.73	11.93
10	9.54	10.00	9.17	10.55
11	7.78	7.60	7.83	10.02

Table 4. Comparative terminal data studying the endurance of 9 - 11-year old badminton players, „ Running 300 m”, (sec).

Age	Boys		Girls	
	E. group	K. group	E. group	K. group
9	104.28	107.15	111.20	114.88
10	89.92	92.82	97.48	98.77
11	83.21	85.85	96.38	101.93

Table 5. Comparative terminal data studying the agility of 9 - 11-year old badminton players, „Throwing and catching a ball reflected from uneven surface at a distance of 2,5 m”, (sec).

Age	Boys		Girls	
	E. group	K. group	E. group	K. group
9	21.41	22.71	23.41	24.91
10	18.53	18.70	23.53	24.18
11	13.35	15.28	19.03	21.18

Endurance lies in the basis of physical training of young sportsmen with all kinds of sport. But in badminton it plays an extremely important role to achieve a better result in the game.

It can be seen from the data above that the experimental method influences to a great extent positively the development of the studied ability. The improved control over implemented motor actions has facilitated it.

3. The final data from the study of agility are depicted graphically in Table 5.

It is evident from the obtained data that the positive influence which experimental method has over observed pupils from E gr. is great. Agility as a moving quality lies in the basis of best sports achievements in all sports games. In badminton it occurs most of all. The combination of movement, holding the racket and correct execution of strokes needs well developed coordination abilities, which lie in the basis of agility. There are similar data for flexibility.

CONCLUSION

Developed, practice and science based programme and specific method for the improvement of the initial training of 9-11-year old badminton players positively influence their physical ability.

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