STUDY ON INFLUENCE MEANS OF AEROBIC GYMNASTICS ON ADULT WOMEN FITNESS

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Abstract

Aerobics includes exercises which are linked (built) in a special way, complementing each other (the end of an exercise is the beginning of the next one), so as to give a continuous appearance, ensuring the flow of the program, performed to music of different rhythms and executed with high oxygen consumption. For this study we started from the hypothesis: if in the aerobic sessions with female persons we apply methods and means requiring an optimal body, then it is possible to obtain an improvement of their fitness. The main aim of this research is to determine the optimal content of means, used in aerobics sessions with females, means aiming at improving their fitness. In conducting my research, I used the following research methods: studying the bibliographic material, observation, experiment, measurement and processing statistical – mathematical data, graphical method. Research subjects are 12 women practicing aerobics for less than 3 months, aged between 24 and 33 years. The results indicate a fitness improvement of the research participants, but in order to maintain the obtained results, the workout must be continued also after the research ends.

Keywords*: aerobic gymnastics, fitness, women*

INTRODUCTION

Aerobics gymnastics is a form of maintenance with which it aims at maintaining and developping the body exercise capacity by using an aerobic exercise regime. Aerobics includes exercises which are linked (built) in a special way, complementing each other (the end of an exercise is the beginning of the next one), so as to give a continuous appearance, ensuring the flow of the program, performed to music of different rhythms and executed with high oxygen consumption.

It is addressed to those persons, who, regardless of their age, sex, not having special physical skills to practice a sports competition, they orient themselves to gym in order to develop a systematic, continuous (sometimes for the first time) activity, ending variously as: being in a good shape or just for the pleasure of moving.

It was found that to obtain favorable influences on the body it would be good to carry at least 2-3 sessions per week for beginners and 3-4 sessions per week for advanced, each session lasting one hour.

Individual physical training is one to which fitness depends when someone starts practicing aerobics. Therefore splitting the participants into groups takes in consideration this aspect. Thus we have both beginners and advanced for the same age group. The effort session will be adapted to the physical development level of each group paying particular attention to the working tempo, the work rate, the breaks length and the exercises complexity.

Due to aerobics, you get a trainned, elastic, slender, stronger, healthier body and why not a state of complacecy, satisfaction, joy. Aerobics favors also the socialization process, because young and adult people of both sexes and different socio – professional categories train together, become friends, thus helping to maintain their own health and fitness.

The term of fitness in special literature is presented and analyzed in two aspects: health fitness and sports fitness.

Health fitness aims at providing individual ability to perform daily tasks and reducing the incidence of certain diseases. Sports fitness components are: aerobic endurance, local muscle endurance, local muscle strength and power, flexibility, body composition, mental health.

Fitness sports is also called specific fitness for performance, the effort parameters are consistent with specific practiced sports, and the energy systems have different influences to achieve specific tasks. Sports fitness components are: movement speed, agility, balance, reaction time, aerobic endurance, local muscle endurance, muscle strength and power, flexibility.

Force training strengthens and gives a good musculoskeletal condition, increasing tone and stamina. Physiologically this kind of training leads to increasing the volume of their muscles, strength and tone, and also the strength of their tendons, ligaments and bones. It was also noticed an improvement of their mental health, enhancing their self – esteem, confidence and secure.

Scientific evidence shows that the physical activity of moderate intensity provides significant benefits for health body. Therefore, every individual should perform one regular physical activity.

An active life does not meanstrictly controlled program, intensive exercise, but physical activity to reduce the risk of chronic disease and improving life quality. Exercise is an important part of a healthy lifestyle and fitness is a way to achieve this.

Exercise reduces the risk of developing cardiovascular diseases, cancer, obesity, diabetes. By regularly practicing physical exercises, it is eliminated the possibility of developing these diseases, the physical exercise contributing to building the muscles mass, reducing the body fat mass and strengthening the bones.

Health is the fundamental benefit of practicing leisure physical activity. Researches reinforce the idea that daily exercises and a balanced diet are the basis of a healthy life.

In order to be effective, a motric activity program should have a positive impact on one's health and improve one's fitness and also meet several conditions related to the effort parameters: volume, length, frequency, intensity and complexity.

To see the effectiveness of a motrical activity, it must be done at least 3 times per week, with medium length and intensity. Carrying out physical activities with long intensive efforts are not beneficial for the body of those who practice leisure physical activities.

In health sports and leisure activities it is recommended to measure the exercise length both in minutes (as in professional sports), as well in calories. Those who burn by physical exercise more than 2,000 calories per week are people with a significant decrease of heart desease risk.

The minimum length of training sessions should be 40-45 minutes in order to see positive effects over time.

Experts consider that setting as target maintaining a good physical condition is not desirable without performing weekly at least three sessions of motrical activity.

The effectiveness of a motrical program is visible when the physcical effort has a certain intensity. Many researches have concluded that efforts involving a caloric consumption higher than 7.5 per minute significantly reduce the development of diseases.

The ideal workout intensity can be determined by using the heart rate training zone (HRTZ).

The heart rate training zone has two axes: vertical for the heart rate and horizontal th age. For each age it is presented the optimal maximum heart rate and the optimal heart rate range (between 68% and 85% of maximum heart rate) that leads to improving one's fitness.

MATERIAL-METHOD

For this study we started from the hypothesis: if in the aerobic sessions with female persons we apply methods and means requiring an optimal body, then it is possible to obtain an improvement of their fitness.

The main aim of this research is to determine the optimal content of means, used in aerobics sessions with females, means aiming at improving their fitness.

In conducting my research, I used the following research methods: studying the bibliographic material, observation, experiment, measurement and processing statistical – mathematical data, graphical method.

The stages of the research were the following:

1. literature study of the subject in question – November 2011-February 2012
2. determining that sample to apply the tests for assesing fitness and achieving initial testing-February 2012
3. implementation of the work settled program – February-May 2012
4. achieve final testing – May 2012
5. data analysis and establishment of research findings – June 2012

Research subjects are 12 women practicing aerobics for less than 3 months, aged between 24 and 33 years.

The research was conducted in Suceava City from February to June 2012. The research participants performed three weekly aerobics sessions. At the beginning and at the end of the research there were conducted the initial and final tests.

To assess objectively the fitness evolution of the participants, there were used the following control samples: Fitness Index (FI), Ruffier Test, Harvard Step Test.

For fitness index (FI) the formula is:

Women: FI= 304-(min*8,5+sec*0,14+FC*0,32+1,1*G/Î$_2$)-V*0,4

FI or capacity index (it is the cardiorespiratory capacity) is an indicator of body behavior to the effort of resistance for individuals of the same range of age.

To know if FI is good or not, we will pursue its value on the following scale:

- FI under 70= much below average
- FI between 71 şi 89 = slightly below average
- FI between 90 şi 110 = average
- FI between 111-130 = slightly above average
- FI above 130 = well above average

Ruffier Test, called by the author, "fitness assessment test "(fitness) is based on heart rate response (HR) at rest (sitting position), after exercise (30 squats in 45 seconds) and return to a sitting position. The test consists of climbing stairs of 30/50 cm height in a 30 steps/minute tempo, this

lasting 5 minutes, the pulse is evaluated for 30 seconds after the first minute of recovery. STH index (short value) is expressed in conventional units.

Before starting the research there were applied three control samples to see the fitness level of the subjects. The data obtained were processed by three statistical parameters: arithmetic mean, standard deviation, variation coefficient.

RESULTS AND DISCUSSIONS

Statistical parameter / Control sample	Fitness Index	Ruffier Test	Harvard Step Test
Arithmetic mean	**82.58**	**10.00**	**52.50**
Standard deviation	**6.87**	**3.10**	**8.59**
Variation coefficient	**8.32**	**31.00**	**16.36**

Table 1 The results obtained from initial testing

The same samples were applied at the end of the research, after four months, to see the progress after implementig the selected work programs.

Statistical parameter / Control sample	Fitness Index	Ruffier Test	Harvard Step Test
Arithmetic mean	**85.92**	**7.83**	**55.08**
Standard deviation	**8.14**	**3.04**	**8.65**
Variation coefficient	**9.47**	**38.81**	**15.70**

Table 2 The results obtained from final testing

Data from control samples were processed using the statistical and mathematical method, and for each sample applied to the subjects, there was made the interpretation of the results.

Fitness Index

Interpreting data from this test is done after a scalar table, and the result obtained is of 82.58 average points indicating a slightly below average, and at the final test there is an improvement of 3.34 points (85.92) – result which also falls within the below average (figure 1).

The coefficient of variation values indicate greater homogeneity of the group for the two evaluations (8.32%, 9.47%) (table 1 and 2).

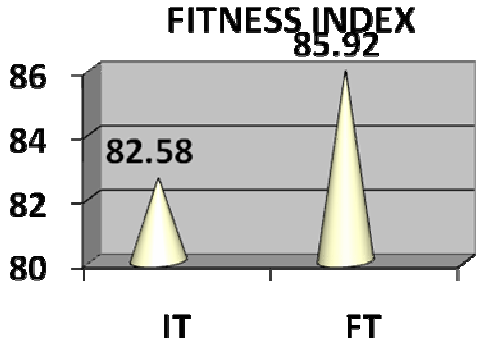

Figure 1 The results obtained from initial and final testing for Fitness Index

Ruffier Test

The average result obtained is of 10 points indicating a poor exercise capacity, and in the final test there was obtained an improvement of their fitness, the average value being of 7.83 points indicating a medium fitness level (figure 2). At this sample were recorded the highest values of the variation coefficient(table 1 and 2).

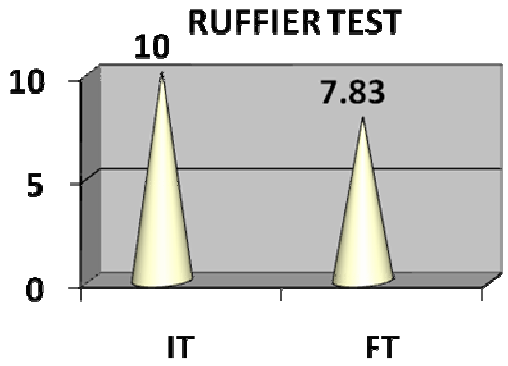

Figure 2 The results obtained from initial and final testing for Ruffier test

Harvard Step Test

The test assesses the subjects' fitness, lasting 5 minutes, the pulse is evaluated once at 1 minute after ending the exercise. The values obtained at this test (initial testing – 52.50 units, final testing – 55.08 units) indicate a medium performance (figure 3).

The standard deviation values were quite high so that the coefficient of variance showed homogeneous group average (table 1 and 2).

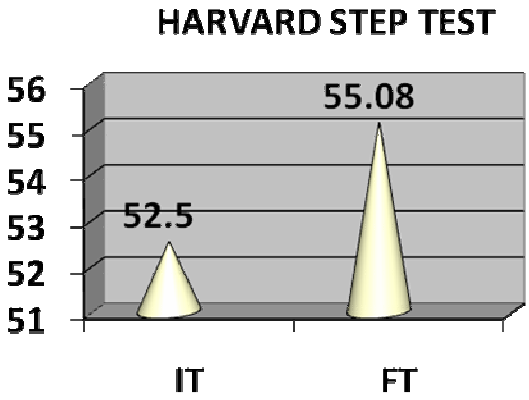

Figure 3 The results obtained from initial and final testing for Harvard Step Test

CONCLUSIONS

Established research findings from data analysis are:

– The samples used in this research aimed at highlighting the fitness of the participants.

– The specific means of the aerobics were applied from February to June 2012.

– The fitness evaluation was performed at the beginning (February 2012) and the end of the study (May 2012).

– For fitness tests that were applied (Fitness Index, Ruffier Test, Harvard StepTest), the results show a low level in the initial testing and a medium performance in the final testing.

– I mention that the research participants performed three weekly aerobics sessions, each session lasting between 45 and 55 minutes.

– For three control samples, the values of the variation coefficient indicate a medium homogeneity (values between 8% and 38%).

– The effects obtained reinforce the idea that aerobic gymnastics can be used as means to optimize fitness.

– Use of aerobic gymnastics is beneficial for strength and resistance development.

– The results indicate a fitness improvement of the research participants, but in order to maintain the obtained results, the workout must be continued also after the research ends.

As consequences of this research there are some suggestions for work practice:

– The effort dosage should be guided by the potential of the practitioners.

– The aerobic gymnastics may be an alternative for force resistance development as well as for aerobic capacity.

– I recommend avoiding high impact exercises and excessive use of jumps, which may have some adverse effects on the joints and spine.

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THE ROLE OF REFEREES INSTRUCTOR IN KNOWING THE LAW OF THE FOOTBALL GAME

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Abstract

The members of the Referees Committee and the FIFA referee instructors met all of the participating teams prior to the start of the tournament to brief them on technical matters. The players and technical staff showed great interest and took an active part in the preparations. These meetings were the continuation of other meetings held in South Africa with representatives of the participating teams, at which multimedia materials were distributed containing information pertaining to the interpretation of the Law of the Game. These, had intended to remove all non fair-play attitudes between players, between players and referees, between supporters and players, at a big competition, World Cup 2010.

Keywords*: referee instructor, interpretation of the law of the game, technical staff, technical matters, in real time.*

The instruction and monitoring of these officials began in 2007 with the FIFA preparation programmer for referees and assistant referees for the 2010 FIFA World Cup South Africa, which included a team of FIFA instructors with expertise in a range of areas. All of these referees and assistant referees had taken part in the regular preparation and monitoring workshops, as well as FIFA competitions. Furthermore, a virtual platform was launched that enabled permanent communication to take place with the referees, as well as continuous control and monitoring.

In addition to the technical, physical and psychological activities, a through medical examination was carried out to five month ago.

Upon their arrival in South Africa, all the referees and assistant referees took part in various theoretical and practical activities on a daily basis, which had been developed with a high level of professionalism and the latest technology.

A virtual platform enables the 64 matches to be recorded and incidents to be selected and immediately analyses by instructors and viewed by the referees.

During the practical training, a virtual refereeing programmer enabled the referees and assistant referees to analyses their decisions immediately after they had taken them on the field of play by viewing them on a monitor providing replays at different speeds.

The experts on technical matters, fitness, psychology, energy and medicine prepared extensive theoretical and practical preparation programmers. The training session took place with the assistance of a team of footballers in order to carry out exercises using match situations.

After the matches, meetings were held to analyses the major incidents. Al the matches were recorder and the instructors selected all the incidents that were to be analysed with the referees. The aim was to analyse these situations with a view to improving performance in the next matches.

Other scientific studies were carried out during the World Cup matches, including a detailed biomechanical study in which the referees' positions on the field of play and their decisions were analysed, as well as the distances run by the referees and assistant referees at different speeds.