

OPTIMIZATION OF THE PHYSICAL FITNESS THROUGH BALLROOM DANCE, IN CHILDREN OF LOW AND MIDDLE SCHOOL-AGE

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Abstract: *The optimization of the physical fitness through ballroom dance in any category of children, is an easy, useful, educational and pleasant way for physical, functional and motrical education, compared to other specific or non-specific means of education in the physical and sportive area, which can be used to positively influence the developing human body. This study seeks to underline the qualitative effects of ballroom dance on the health, and on the optimization of the physical fitness parameters. The assessment tools applied hereto indicate the beneficial effects that dance have on the optimization of health.*

Keywords: *ballroom dance, physical fitness, optimization, fitness state, systematical*

1. Introduction

The intent of this article is primarily to create an instrument of assessment and in-depth study of the beneficial effects of dancing in preventing the onset or aggravation of certain psycho-postural and walking deficiencies. The idea is to create a working instrument that can be efficient in the prevention of physical and functional deficiencies. The results obtained through dance therapy will be assessed by means of specific methods

and techniques. The indications and counter-indications of this form of physical therapy for different deficiencies will also be thoroughly analyzed.

2. The Importance of the Research

Dance movement therapy is the use of creative movement and dance in a therapeutic relationship. [6]

Dancing, as well as the physical movement in general, presupposes

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training, energy, it stimulates the heart rate, and it represents as such an excellent form of physical training, which tones the muscles, strengthens the bones, and increases the resistance during effort, and the muscular flexibility. Moreover, therapy through dance increases the level of motoric intelligence, thanks to the stock of knowledge provided by the specific moves, due to their complexity, the high level of coordination of the motoric acts, the skills and customs acquired, which are specific to this type of effort. [4]

Conceptual dance benefits have a cognitive outcome (the realization of complex commands and motoric actions, the increase of improvisation level, the increase of kinesthetic memory); affective outcomes (feelings, expressions, challenges); physical outcomes (healthy habits; development of dancing skills; body awareness, control, balance and coordination development; accumulation of physical flexibility, stamina, strengths and agility; positive physical activity that release stress; development of sensorimotor skills through brain dance patterns) and social outcomes. [2]

This art form is accessible to people of all ages wanting a healthier life, by avoiding obesity, stress, and by improving the self-esteem and the general disposition. It is especially recommended to children - for a more harmonious development, both body wise, and emotionally and cognitively - but also to teenagers, in order to correct any possible light physical deficiencies inherited from childhood. [4]

Some of the immediate benefits of the dance therapy include thus: improving the

body flexibility, increasing the body strength and the physical resistance, inducing a good mood and fighting stress, preventing depression, preventing cardiac diseases, facilitating the loss of weight, improving the balance, strengthening the immune system. [4]

Before continuing, a distinction must be made: this article does not analyze dancing from a musical perspective, but merely from the perspective of the physical fitness attained as effect of dancing, namely of ballroom dancing.

Dance therapy is a complementary prevention form. [1]

In ballroom dance, the training process is carried out similarly to any other sport. The structure of the training session in ballroom dance is complex, including the following:

- adapting the body to the physical effort;
- developing the performance abilities
- gaining the sport shape
- obtaining maximum results" [5]

In order to attain the above mentioned the structure of the training session will include two main groups of elements: the static elements, and the dynamic elements. [5]

The ballroom dance technique is learned individually for each of the 10 dances. At this stage, the dancer learns the steps technique, the choreographies, and then he learns to execute them on the music, in order to respect the rhythm and to attain the specificity of the learned dance. For the efficient learning of the technical elements, the technical and physical description and illustration play a huge role, and have a great influence on the dancers [5].

3. Hypothesis, Purpose, and Goals of the Research

Just as rigorously practiced sport leads, in short term, to "leaps", often spectacular, in the body strength and endurance, it is sure that dance, practiced regularly, will also lead to a significantly improved basic fitness, a better coordination and motricity, as well as a better psychological state.

The intention is to use the assessment experiments and instruments in order to measure the progress of the subjects in a given timeframe, and in order to prove the validity of the hypothesis.

4. Research Material and Methods

The research took place over 6 months, and it was carried out on children aged between 6 and 12 years. During these months of research, the children participated in two dance lessons weekly, in one assisted practice session, and in ballet and fitness sessions once every two weeks.

The dance and assisted practice sessions lasted 90 minutes each, and the ballet and

fitness sessions 60 minutes each.

In the dance lessons, children learned the four dance styles (slow waltz, quick-step, cha-cha-cha and jive), containing sequences specific to ballroom dance.

The fitness program contained exercises designed to improve the body resistance to physical effort, the muscle tone, the heart rate during sustained effort, and the muscular elasticity. The chosen programs aimed at attaining a correct physical expression considering the current deficiencies at the addressed age.

In the somatometric assessment, by filling in the anamnestic charts, the values for height, weight and body mass index have been registered. The ballroom dance classes were conducted according to a complex program, in three parts.

During the first part, children underwent a general warm-up (adaptation of the body to effort), with usual exercises (rotation of body limbs and of the hips, lunges, running, etc.). During the second part, the program included 6 exercises specific for ballroom dance, both for the Standard and Latino categories. During the third part, the children deepened or perfected the learned sequences (Table 1).

Exercises specific for ballroom dance

Table 1

Initial position	Description of exercise
Standing position, with knees slightly flexed, leaning slightly forward, weight on the toes. Arms abducted at 90 degrees, bent elbows (dancing position).	Knees extension, with raising on toes, in three strokes. Knees flexing, with lifting the heel off the ground, in three strokes.
Standing position, with knees slightly flexed, leaning slightly forward, weight on the toes. Arms abducted.	Circumduction of arms in axis, forwards and backwards.
Standing position, with knees slightly flexed, leaning slightly forward, weight on the toes. Arms abducted at 90 degrees, bent elbows	T1 – step forward with the right foot T2 – raise on toes with triple extension T3 – triple flexion

Initial position	Description of exercise
(dancing position).	T4 – step backwards with the left foot T5 – raise on toes with triple extension
Standing position, with knees slightly flexed, leaning slightly forward, weight on the toes. Arms abducted at 90 degrees, bent elbows (dancing position).	T1 – step forward with the right foot T2 – raise on toes with triple extension T3 – triple flexion T4 – step backwards with the left foot T5 – raise on toes with triple extension/ triple flexion
Standing position, with knees slightly flexed, leaning slightly forward, weight on the toes. Arms abducted at 90 degrees, bent elbows (dancing position).	T1 - raise on toes with triple extension T2 – added step to the left (two steps laterally) T3 – triple flexion T4 - raise on toes with triple extension T5 - added step to the right (two steps laterally)/ triple flexion
From sitting position, arm abducted at 90 degrees, with bent elbows (dancing position)	Maintaining the dancing position in isometric contraction
Standing position, feet apart, arms abducted at 90 degrees	"8" moves from the pelvic area
Standing position, arms crossed on the chest	T1 – side step on the right side, with an "8" move from the pelvic area T2 – come back T3 - side step on the left side, with an "8" move from the pelvic area T4 – come back
Standing position, arms crossed on the chest	T1 – step forward with the right foot, with an "8" move from the pelvic area T2 – come back T3 - step forward with the left foot, with an "8" move from the pelvic area T4 – come back
Standing position, arms crossed on the chest	T1 – step backwards with the right foot, with an "8" move from the pelvic area T2 – come back T3 - step backwards with the left foot, with an "8" move from the pelvic area T4 – come back
From sitting position, arm abducted at 90 degrees	Jumping on toes, with kicks forward, laterally and back, alternatively, with the right foot.
From sitting position, arm abducted at 90 degrees	Jumping on toes, with kicks forward, laterally and back, alternatively, with the left foot.

The body mass index (the Quetelet index) is calculated by dividing the body weight expressed in grams to the height expressed in centimeters. [3]

The thoracic elasticity involves measuring the dimension of the respiratory act, the difference between inspiration and expiration. It is obtained by using a metric

strip, placed on the back, under the lower angle of the scapula, and differently in the front – for the boys, under the nervous aureole, and for the girls at the level of the joint of the 9th rib with the sternum, supramammary - and by calculation the value of the thoracic elasticity. [3]

The Ruffier Test provides real data on the readiness of the cardiovascular system for effort, by registering the heart rate at rest, in lying position, supine, or in sitting position (P1), after 30 squats performed in 30 seconds, where the heart rate is registered immediately after effort, (P2), and after 1 minute of rest (P3), as well as in sitting position. The measuring will be done over 15 seconds. The calculation is done according to the formula:

$$[(P1+P2+P3) - 200] / 10.$$

Fig. 1. Calculation formula of the Ruffier Test

The interpretation of the test is done according to the number of points obtained:

- between 0 and 5,0 – very good;
- between 5,1 and 10,00 – good;
- between 10,1 and 15,0 – mediocre;
- over 15,1 – poor. [3]

5. Results of the Research

The first step of the research consists in measuring and centralizing the values for the somatometric and somato-functional assessments.

In theory, the body mass index can be calculated for children, but in practice the results do not reflect the reality, since 75% of the children had a BMI under 18,50, which would mean that they are underweight, and only 25% scored within the predetermined limit values for normal weight, namely between 18,50 and 24,99.

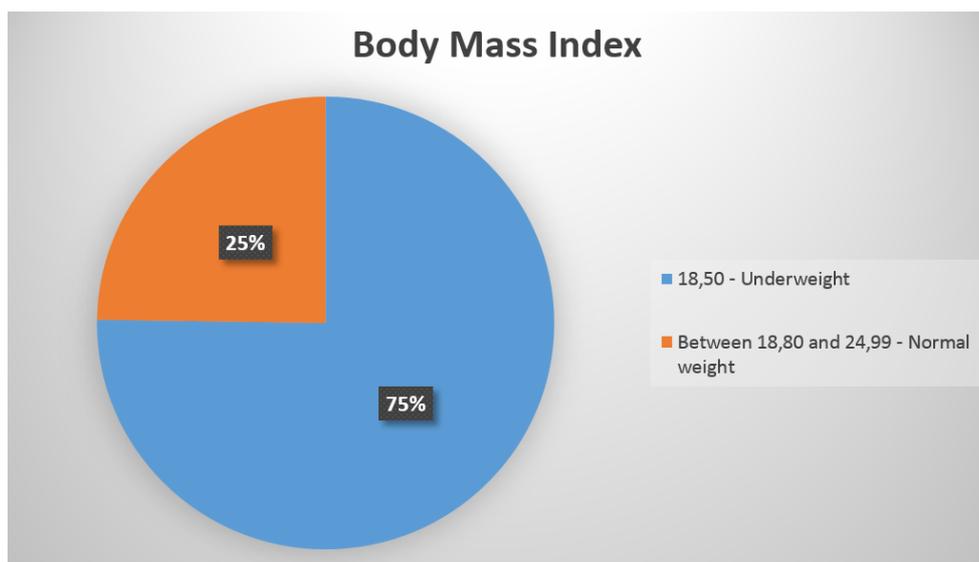


Chart 1. Body Mass Index

In the somatometric assessments (Chart 2), the thoracic elasticity indicated increased values for each child, as follows:

A.I.A. - 4,8 cm;

B.A. - 4,3 cm;

B.T. - 2,4 cm;

C.C.I. - 3,1 cm;

C.D.M. - 0,5 cm;

F.D.S. - 1,2 cm;

F.V.S. - 0,5 cm;

L.I.A. - 4 cm;

L.R.A. - 3,3 cm;

M.O.M. - 2,4 cm;

M.R. - 5,7 cm;

P.A.1. - 3 cm;

P.A.2. - 2,1 cm;

P.D.S. - 1,4 cm;

P.M. - 1 cm;

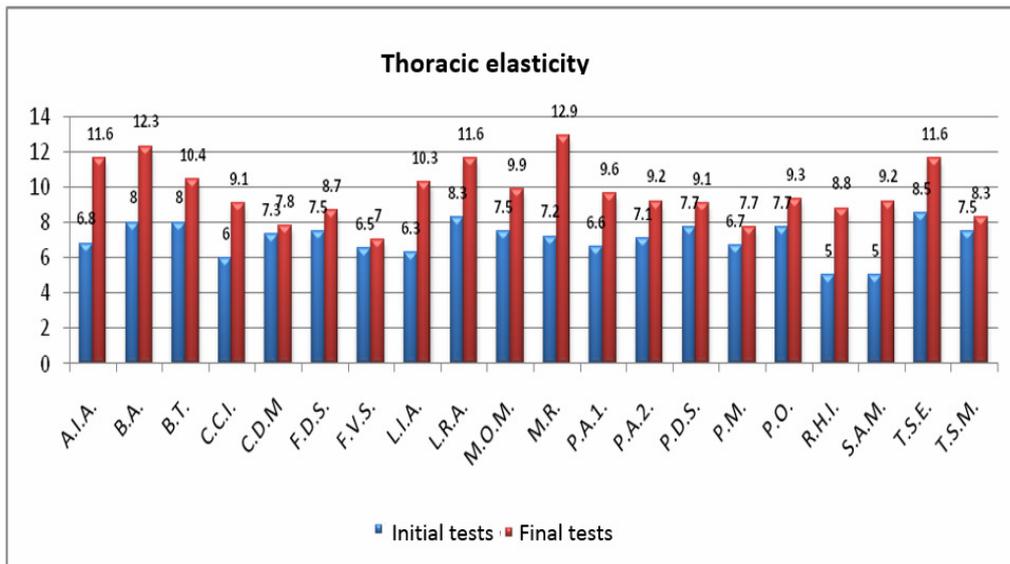
P.O. - 1,6 cm;

R.H.I. - 3,8 cm;

S.A.M. - 4,2 cm;

T.S.E. - 3,1 cm;

T.S.M. - 0,8 cm.



Graph 2. *Thoracic elasticity*

In the somatometric assessments, the results for the Ruffier test varied considerably for each child, as follows:

A.I.A. - +4,4;

B.A. - +12;

B.T. - -0,2;

C.C.I. - -2;

C.D.M. - +2;

F.D.S. - -4,8;

F.V.S. - -0,8;

L.I.A. - +2,4;

L.R.A. - +2,8;

M.O.M. - -0,8;

M.R. - +2;

P.A.1. - +0,4;

P.A.2. - +4,8;

P.D.S. - -1,2;

P.M. - +1,2;

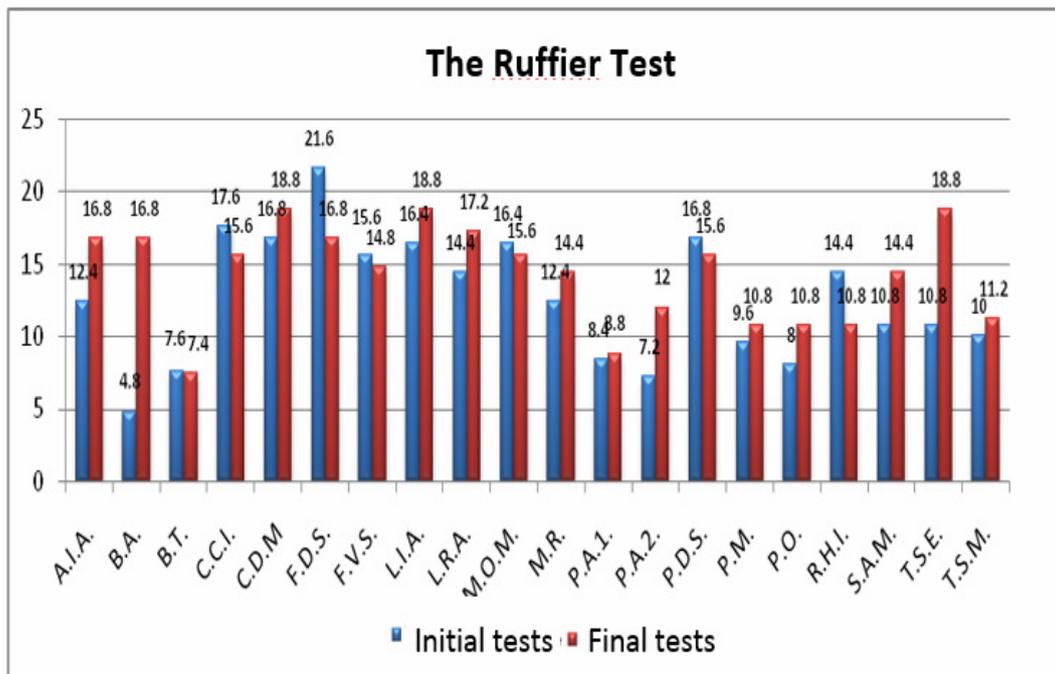
P.O. - +2,8;

R.H.I. - -3,6;

S.A.M. - +3,6;

T.S.E. - +8;

T.S.M. - +1,2. (Graph 3)

Graph 3. *The Ruffier Test*

A constant in progress or regress, linked directly to the activities performed, could not be established.

In the initial testing, the centralized values fell within the scales indicated according to the Ruffier test, as follows: 5% (1 child) – very good, 30% (6 children) - good, 30% (6 children) - mediocre, and 35% (7 children) - poor. In the final testing, the real values indicated according to the Ruffier test are as follows: 5% (1 child) – very good, 30% (6 children) - good, 30% (6 children) - mediocre, and 35% (7 children) – poor.

In the final testing, the centralized values according to the Ruffier test were as follows: 0% (no child) – very good, 10% (2 children) - good, 40% (8 children) - mediocre, and 50% (10 children) - poor.

The established difference may be the

result of a multitude of external factors, such as: how well rested was the child on that particular day, the (over-)burdening at school on that day, the nutrition on that day.

6. Conclusions

Considering the assertions above, based on the experiments and investigations performed, the utility of ballroom dance appears evident, ballroom dance providing thus significant benefits, both physically and mentally.

The regularly practiced dance leads, among other, to the improvement of psycho-motric coordination, of the heart rate and of the pulmonary capacity, and, more broadly, to maintaining unaltered a general state of physical health, in all the

developing components of the human being (somato-functional, psychological and emotional health).

The influence of various types of music on the physical activities: a more vivid and rapid rhythm of the music may impose a more alert rhythm of the exercises, or may support longer effort, while classical music may constitute the appropriate frame for neuro-psychic and neuro-muscular relaxation, and may help in the recovery after effort.

References

1. Aktas, G., Ogce, F.: *Dance as a Therapy for Cancer Prevention*. Tehran, Ed. Asian Pacific Journal of Cancer Prevention, 2005.
2. Gilbert, A. G.: *Creative Dance for All Ages*, 2nd edition. Champaign, IL. Ed. Human Kinetics, 2014.
3. <http://docshare01.docshare.tips/files/16755/167559415.pdf> Accessed: 21-09-2018.
4. http://www.sfatulmedicului.ro/Sanatate-prin-sport/beneficiile-dansului-pentru-sanatate_13529 Accessed: 21-09-2018.
5. Jeleascov, C.: *Curs de dans sportiv (Ballroom dance course)*. Bucureşti, Ed. Fundatia România de Maine, 2006.
6. Payne, H.: *Dance Movement Therapy: Theory and Practice*. London, Ed. Routledge, 1992.