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# A STUDY ABOUT DEVELOPING MOBILITY ADRESSED TO CADET ATHLETES THAT PRACTICE TAEKWONDO THROUGH INTRODUCING A TAE-BO PROGRAM

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***Abstract:*** *Mobility is an important quality for a Taekwondo practitioner, that's why a high level of mobility is required to increase performance, efficiency and economy of movement. The article highlights a major importance through introducing the Tae Bo program and the benefits it brings in the Taekwondo discipline. The purpose is to identify and check the efficiency of the training method through introducing the Tae Bo program and the beggining of the Taekwondo training. Through the present paper we wish that the results gathered from using the method to prove the improvement of the coxo-femoral mobility.*

***Key words:*** *Taekwondo, Tae Bo, mobility*

## 1. Introduction

Taekwondo is a Korean martial art that is mostly comprised of high leg blows and fist blows. In this full-contact sport almost 90% of the blows are leg blows, while the rest of the 10% are fist blows. „Taekwondo is a unitary and exact system, equally for selfdefence and counterattack" [3].

Taekwondo was developed between 1940 and 1950, and since then it has a long history behind it. In 2000, it became an Olympic sport, but until now, Romania did not have any representatives in the Olympic competitions. „Taekwondo is a concept with an extremely generous meaning. It is capable of raising or lowering the human being, building or destroying cravings, aspirations and dreams, stimulating or stifling initiatives, forming or destroying values, unleashing latent energies and overcoming the great obstacles of life" [5].

Tae Bo is the sport that combines moves from Taekwondo and Box, hence its name. "Blanks invented Tae Bo in 1989 when he had the idea to make Tae kwon do movements on the rhythm of the music" [7]. Since then, Tae Bo has spread all over the world, including our country. „ This sport improves balance, mobility, and strengthens thd muscular and bone system" [10].

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We can talk about Taekwondo as a complex sport, which requires the development of all the motor qualities. We chose to research the development of motor quality, coxo-femoral mobility because it is an essential quality for any Takwondo practitioner. "Mobility is the ability of man to make the most of the anatomical potential of locomotion in a particular joint or in the whole of the joints of the body, materialized by performing movements with great amplitude" [1]. Is considered the most important, helping to prevent accidents, fluidize movements, hiting the opponent in the head which means greater chances of winning the match, so to increase the performance. We can mention the fact that "low flexibility creates many disadvantages, namely: it prolongs the period of learning and perfecting the motor actions, it favors accidents, it reduces the indices of development of the conditional capacities (cm), it reduces the efficiency in performing the movements, it decreases the quality of the execution (D. Harrem N. Ozolin)" [8]. “The elasticity of the connective tissues is dependent on the general endocrine-vegetative state of the organism. Therefore, the child is thinner than the adult, the girls are more supple than the boys, and the blacks are more supple than the whites" [4].

Having been an observer in Taekwondo competitions in the country and beyond, I found that the real problem in this sport is coxo-femoral mobility. Many athletes of all categories: children, cadets, juniors and even some seniors, have this problem, which I hope will be solved with the present experiment.

We believe that the best and newest way to improve co-femoral mobility is to introduce a Tae-Bo program at the beginning of Taekwondo training, because there is a close connection between the two. In both Taekwondo and Tae Bo "We will propose that instead of 5 sets of kicks, we can do one more, or instead of 8 repetitions per series, we can do 10" [6], In both disciplines, we always aim to be better than yesterday.

## 2. Objectives

The objective of this research is to improve coxo-femoral mobility by introducing the Tae Bo program at the beginning of each Taekwondo training. "Mobility is a quality that can be improved by training" [2].

## 3. Materials and Methods

The present research consists of the implementation of 20 minutes of Tae Bo at the beginning of Taekwondo training, three times a week for 14 weeks. To demonstrate that the present research will have the desired results, we rely on two tests to examine coxo-femoral mobility. The research will be carried out on a control group and an experimental group. At the beginning of the 14 weeks, before introducing the Tae Bo program into the Taekwondo workouts, detailed measurements were made to demonstrate the evolution of the athletes at the end of these weeks.

The experimental and control group comprises 58 subjects born between 2009-2010. The experiment started on September 16, 2019 with the initial testing and ended 3 months later, that is, on December 20, 2019. The evaluation included two tests, one aimed at assessing coxo-femoral mobility and the short test

being specific to the Taekwondo discipline.

**Test 1:** "Stretching the hands from the seated position" [9] with the legs extended, the soles glued to the wide side of the bench, the tips of the fingers resting on the edge of the marked surface.

**Mode of action**: the flexion of the trunk without prior advancement on the thighs, with the arms and legs extended forward, pushing the linear on the marked surface, without losing the finger-linear contact, now maintaining the flexed position for 2 seconds, interval in which the result is read. The test will be performed twice, with the best result being noted.

Fig. 1. *Action Test 1*

**Test 2:** The originality of this test is given by the calculation of the "G" index calculated by the maximum height at which the athlete can perform the dollyo chagi blow (taekwondo-specific procedure).

**Mode of action**: while the athlete is in guard position, with his back foot, he executes the dollyo chagi blow. To record the data, we use a device that measures the height, which can also be used successfully to record the values of the dollyo chagi blow. The test will be performed twice, with the best result being noted.

Fig. 2. *Action Test 2*

Next we have the work schedule after which the 58 subjects work

*Abbreviation chart* Table 1

| | |
|---|---|
| | Inițial testing |
| | Taekwondo workout |
| | Final testing |
| T.I.G.C. | Inițial testing group control |
| T.I.G.E. | Inițial testing experimental group |
| T.F.G.C. | Final testing control group |
| T.F.G.E. | Final testing experimental group |

*Work schedule* Table 2

| SEPTEMBER | | | | | | |
|---|---|---|---|---|---|---|
| M | T | W | T | F | S | S |
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | | | | | | |
| **OCTOBER** | | | | | | |
| M | T | W | T | F | S | S |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | | | |

| NOVEMBER | | | | | | |
|---|---|---|---|---|---|---|
| M | T | W | T | F | S | S |
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | |
| **DECEMBER** | | | | | | |
| M | T | W | T | F | S | S |
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | | | | | | |

According to the table below, it can be observed that both the control and the experimental groups underwent initial testing prior to the implementation of the Tae Bo program, to demonstrate the development of coxo-femoral mobility at the end of the 14 weeks of training.

Table 3

*Centralizing table initial testing*

| | TEST 1 | | TEST 2 | |
|---|---|---|---|---|
| Subject | T.I.G.C | T.I.G.E | T.I.G.C | T.I.G.E |
| 1 | **7** | **6** | **4** | **5** |
| 2 | **11** | **10** | **8** | **8** |
| 3 | **-1** | **0** | **2** | **2** |
| 4 | **0** | **3** | **2** | **4** |
| 5 | **10** | **8** | **6** | **7** |
| 6 | **8** | **10** | **4** | **10** |
| 7 | **-3** | **6** | **-1** | **3** |
| 8 | **7** | **1** | **7** | **4** |
| 9 | **10** | **9** | **8** | **6** |
| 10 | **6** | **6** | **4** | **7** |
| 11 | **2** | **3** | **2** | **4** |
| 12 | **-3** | **4** | **-1** | **2** |
| 13 | **8** | **6** | **6** | **3** |
| 14 | **5** | **6** | **4** | **4** |
| 15 | **6** | **4** | **5** | **2** |
| 16 | **9** | **7** | **6** | **5** |
| 17 | **6** | **7** | **2** | **3** |
| 18 | **3** | **-1** | **0** | **2** |
| 19 | **3** | **6** | **2** | **4** |
| 20 | **-3** | **7** | **-1** | **1** |
| 21 | **2** | **4** | **4** | **6** |
| 22 | **16** | **8** | **11** | **6** |
| 23 | **8** | **9** | **6** | **4** |
| 24 | **6** | **8** | **5** | **4** |
| 25 | **7** | **8** | **2** | **3** |
| 26 | **9** | **6** | **6** | **7** |
| 27 | **10** | **4** | **4** | **2** |
| 28 | | **7** | | **5** |
| 29 | | **2** | | **-1** |
| 30 | | **2** | | **-2** |
| 31 | | **9** | | **1** |
| Average | **5,51** | **5,64** | **3,96** | **3,90** |

## 4. Results

The dynamics of the evolution of the performances of the subjects under investigation is presented in table 2. From the analysis of the data we can conclude that the majority of the subjects registered an improvement of the indices of coxo-femoral mobility.

Table 4

*Centralizing table final testing*

| | TEST 1 | | TEST 2 | |
|---|---|---|---|---|
| Subject | T.F.G.C | T.F.G.E | T.F.G.C | T.F.G.E |
| 1 | **8** | **10** | **5** | **9** |
| 2 | **11** | **14** | **9** | **12** |
| 3 | **1** | **4** | **2** | **6** |
| 4 | **2** | **6** | **3** | **6** |
| 5 | **10** | **12** | **6** | **11** |
| 6 | **7** | **16** | **5** | **15** |
| 7 | **2** | **8** | **2** | **8** |
| 8 | **6** | **8** | **7** | **9** |
| 9 | **13** | **12** | **6** | **10** |

| | TEST 1 | | TEST 2 | |
|---|---|---|---|---|
| Subject | T.F.G.C | T.F.G.E | T.F.G.C | T.F.G.E |
| 10 | **8** | **6** | **6** | **9** |
| 11 | **2** | **5** | **4** | **6** |
| 12 | **0** | **7** | **2** | **2** |
| 13 | **10** | **10** | **7** | **8** |
| 14 | **6** | **9** | **4** | **8** |
| 15 | **8** | **13** | **6** | **6** |
| 16 | **8** | **9** | **7** | **6** |
| 17 | **9** | **10** | **4** | **6** |
| 18 | **0** | **7** | **3** | **8** |
| 19 | **6** | **14** | **4** | **9** |
| 20 | **-5** | **16** | **1** | **7** |
| 21 | **6** | **9** | **6** | **10** |
| 22 | **18** | **11** | **11** | **9** |
| 23 | **10** | **11** | **8** | **7** |
| 24 | **7** | **12** | **6** | **6** |
| 25 | **11** | **15** | **3** | **7** |
| 26 | **13** | **10** | **7** | **8** |
| 27 | **16** | **10** | **4** | **9** |
| 28 | | **9** | | **10** |
| 29 | | **6** | | **4** |
| 30 | | **6** | | **2** |
| 31 | | **12** | | **4** |
| Average | **7,14** | **9,90** | **5,11** | **7,64** |

Regarding the test 1, characterized by mobility at the level of the coxo-femoral joint in the control group, it is found that at the initial testing a performance of 5.51 cm was obtained, and at the final test an index of 7.14 cm. thus registering a progress of 1.63 cm.

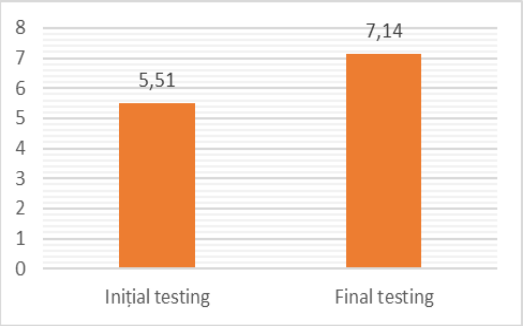


Fig. 3. *Graphic interpretation final and initial testing test 1 - control group*

Regarding the experimental group, the initial test indicates a performance of 5.64 cm. while the final test recorded a performance of 9.9 cm. indicating a progress of 4.26 cm.

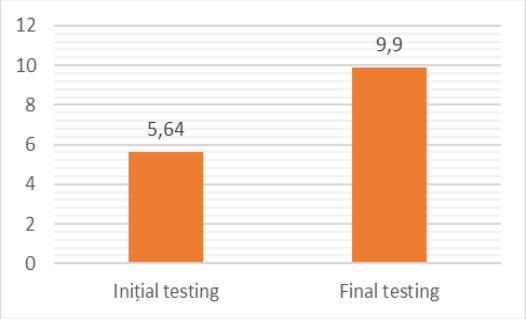


Fig. 4. *Graphic interpretation final and initial testing test 1 - experimental group*

We find that, regarding test 2 of the control group, the initial test indicates an increase of 3.96 cm. and the final test an increase of 5.11 cm. thus having a progress of 1.5 cm.

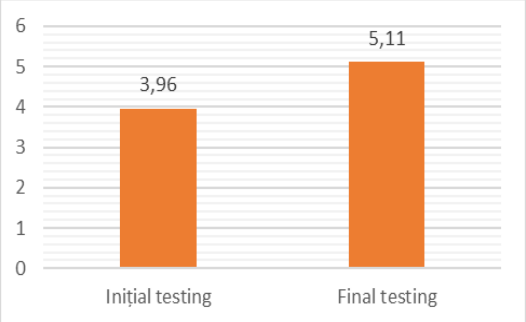


Fig. 5. *Graphic interpretation final and initial testing test 2 - control group*

Regarding the graph 4, the experimental group at the initial testing registers an evolution of 3.90 cm and at the final testing it registers an evolution of 7.64 cm. thus indicating a progress of 3.74 cm.

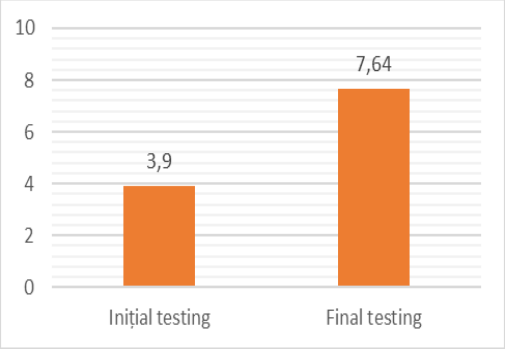


Fig. 6. *Graphic interpretation final and initial testing test 2 - experimental group*

After interpreting the data we conclude that the process registered with the experimental group following the implementation of the operational model, in conjunction with the results obtained in the control group, demonstrates the efficiency of the means of action.

## 5. Conclusions

Following the completion of the research I reached the following conclusions and practical-methodical recommendations:

- the introduction of the Tae Bo program at the beginning of the Taekwondo training has proved necessary for the development of coxo-femoral mobility;
- In the Taekwondo discipline, the motor quality, mobility is a determining factor of the ability to correctly execute the specific procedures;

## Recommendations

- using of the "G" index as a test tool for coxo-femoral mobility;
- Introducing the Tae Bo program at the beginning of Taekwondo training in all sports clubs in the country as it has proven to be beneficial;

## References

1. Balint, L.: *Teoria Educației Fizice și Sportului (Theory of physical education and sport)*. Brașov. Editura Universității Transilvania, 2003, p. 168.
2. Bucur, N.: *Karate.* București. Editura Stadion, 1972, p. 103.
3. Dimciu, L.: *Taekwondo*. București. Garell Publishing House, 1996, p. 12.
4. Păunescu, C.: *Acțiuni eficiente în competițiile de Taekwondo WTF (Effective actions in the competitions of Taekwondo W.T.F*). București. Editura PRINTECH, 2012, p. 38.
5. Păunescu, C.: *Curs de bază Taekwondo (Taekwondo Basic Course).* București. Editura PRINTECH, 2011, p. 13.
6. Sakizlian, M.: *Fundamente teoretice în predarea Tae Bo (Theoretical fundaments of Tae Bo teaching).* București. Editura Universității, 2011, p. 15.
7. Sakizlian, M.: *Tae Bo în lecția de educație fizică din învățământul universitar (Tae Bo in the physical education lesson from university education)*. București. Editura Universității, 2011, p. 9.
8. Săvescu, I.: *Educație fizică și sportivă școlară (Physical and sports school education)*. Craiova. Editura Aius PrintEd, 2007, p. 107.
9. Scurt, C.: *Condiția fizică-indicator al calității vieții (Physical condition-indicator of quality of life)*. Brașov. Editura Universității Transilvania, Brașov, 2012, p. 43.
10. http://www.sariaclub.ro/ro/tae-bo. Accessed: 15-04-2020.