

Methodological alternative to increase explosive strength in weightlifters

Alternativa metodológica para incrementar la fuerza explosiva en las pesistas

Yodenni Fuentes-Baró¹, Fernando Puente-Gamboa²

¹***Univ. Physical Culture Faculty. EPEF Guantánamo. Cuba.***

²***Dr.Sc. Titular Professor . Physical Culture Faculty. Guantánamo University. Cuba.***

Email:

yodenni.fuentes@nauta.com.cu

fernandopg@cug.co.cu

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ABSTRACT

A methodological alternative is proposed to increase the explosive force in the weightlifters of category 13-14 of EIDE of Guantánamo. Techniques and methods such as document review, bibliographic analysis, surveys and interviews, among others, were used. The alternative will contribute to the development of this capacity in weightlifters through plyometric exercises, in addition to serving as a methodological tool for sports coaches.

RESUMEN

Se propone una alternativa metodológica para incrementar la fuerza explosiva en las pesistas de la categoría 13-14 de EIDE de Guantánamo. Se emplearon técnicas y métodos como revisión de documentos, análisis bibliográficos, encuestas y entrevistas, entre otros. La alternativa contribuirá al desarrollo de esta capacidad en las pesistas mediante ejercicios pliométricos, además de que servirá como herramienta metodológica para los entrenadores del deporte.

Keywords

Alternative; Plyometric exercises; Weights; Methodological tool.

Palabras clave

Alternativa; Ejercicios pliométricos; Pesas; Herramienta metodológica.

INTRODUCTION

The importance of the research lies in the application of a methodological alternative based on the effects of plyometric exercises in weightlifting training, intended for the 13-14 female category of Guantánamo, so that, once the stage of general physical preparation, allows athletes to successfully go through the other stages of preparation, and for athletes to reach the fundamental competition in optimal conditions. In addition, with the application of plyometric exercises, athletes and coaches will have new tools to successfully face the long and complex process of athlete preparation.

Several researchers have made reference to the use of plyometric exercises in sports training, such as: Ortiz (1999), Veskhoshannsky (1999 and 2002), Bosco (2000), Fatourus (2000), Bompa (2000). Cometti (2002), Pearl (2003), Donald Chu and García (2005), Weineck (2005), Flanagan, Eamanni, Comyns, Thomas, (2014) and under the theoretical foundations related to plyometric exercises issued by these authors we will give validation to our research.

For the development of this research, weight lifting was chosen, since it is a sport in which different types of efforts are made such as speed, strength, as well as accelerations in the pulls and impulses, all these movements. They play an important role in the performance of weightlifters, therefore, it is reasonable that their training should include this type of efforts to achieve better sporting achievements. Taking into account the line of research, we realized through factual observations in competitions, marking, class visits and the review of training plans and with the application of empirical methods, interviews and surveys, a series of insufficiencies were detected that ruined the following problematic situation in the aforementioned sport limitations.

Limited guidelines in the comprehensive athlete preparation program and regulatory documents to increase explosive strength in weightlifters in category 13-14 of the Guantánamo EIDE. Lack of procedures and methods to increase explosive force in weightlifters in category 13-14 of the Guantánamo EIDE.

These insufficiencies reflect the existence of a research emergence that allowed the author of this work to determine the following scientific problem: ¿How to increase the explosive force in the weightlifters of category 13-14 of the Guantánamo EIDE?

To solve the research problem, the following objective is proposed: Develop a methodological alternative to increase explosive force in weightlifters in category 13-14 of EIDE of Guantánamo. The study population was made up of 6 Weightlifting practitioners, belonging to the 13-14 female category of the EIDE of Guantánamo, which represented 100%, plus 10 Weightlifting coaches from the Guantánamo province, 3 distributed managers in: Provincial Methodologist, Municipal Methodologist

and the Head of the Provincial Technical Commission of Guantánamo and 1 sports specialists. Below the results of the application of the observation.

DEVELOPMENT

Protocol to the classes in a general way and then for the different indicators evaluated, they provided the following information (Annex No. 3, 4 and 5)

- In general we can observe that in the 6 weightlifters who were applied the pre-experiment in the observation of the classes, of them, 0 (0%) are evaluated as very bad, 2 (33.3%) as bad, 3 (50%) as average and 1 (16.6%) good. • In the first indicator that refers to the speed of executions
- In the first indicator that refers to the speed of the executions according to the conception of the snatch and the clean and jerk, 0 (16.6%) is evaluated as very bad, 0 (0%) as bad, 3 (50%) as regular, 2 (33.3%) good and 0(0%) very good.
- In the second, regarding the speed of the executions, the moment of the pull is evaluated 1(16.6%) as very bad, 2(33.3%) as bad, 2(33.3%) as fair, 1(16.6%) as good and 0 very good
- Third that deals with the speed of the executions at the moment of the slip. obtains an evaluation of 2 (33.3%) of very bad, 0 (0%) of bad, 4 (66.6%) of average, 0 (0%) of good, 0 (0%) of very good. The fourth meter that addresses the speed of executions at the time of the halos and the slip is evaluated 2 (33.3%) as very bad, 1 (16.6%) as bad, 2 (33.3%) as fair, 1 (16.6%) good 0 very good.
- Fifth indicator that talks about Speed of executions at the time of the (YERK), is left with an evaluation of 0 (0%) of very bad, 1 (16.6%) of bad, 4 (66.6%) of regular, 1 (16.6%) good 0 very good.
- In the sixth, which refers to the correct lift (snatch and clean and jerk) in the trajectory of the lever at the right moment, it obtains an evaluation of 1 (16.6%) for very bad, 0 (0%) for bad, 2 (33.3%) of regular, 2 (33.3%) of good 0 of very good.
- In the seventh point that addresses the application of explosive force (halon), at the appropriate time, 0 (0%) is evaluated as very bad, 0 as bad, 4 (66.6%) as fair, 1 (16.6%) good or very good. • The eighth addresses the application of explosive force (slide), at the appropriate time, and was evaluated 1 (16.6%) as very bad, 3 (50%) as bad, 2 (33.3%) as fair, 0 (0%) good 0 very good.

The last indicator that speaks of the application of explosive force (yerk), at the appropriate time, is evaluated 1(16.6%) as very bad, 2(33.3%) as bad, 1(16.6%) as fair, 2(33.3%) as bad, 1(16.6%) as fair, 33.3%) good and in addition, a physical pedagogical test was applied□0(0%) very good.

To the weightlifters, in order to determine the deficiencies in the physical preparation where we will then offer the results obtained in a general way and by indicators.

Physical test.

Test Objectives: Determine the explosive strength in the execution of the classic snatch exercise. Number of observers: 2 Total time and frequency of observations: first week of training Type of observation: field and structured. Aspects to observe: explosive force. 1. Survey execution time. With 70% of the maximum result. Evaluation scale: If it presents less than 249 hundredths of a second B If it presents 250-299 hundredths of a second R If it presents more than 300 hundredths of a second M.

Diagnostic result of the Physical Pedagogical Test.

Deficiencies to be detected in the movement	1	2	3	4	5	6	E.G
Slow movement in the take-off of the lever (phase 1.)		X			X	X	R
Slow movement in the adjustment (phase 2)		X	X		X		R
Slow movement in the pull (phase 3)		X		X	X	X	MM
Slow movement in the slide (phase 4)		X	X	X	X	X	MM
Slow movement in the end of recovery (phase 5)	X			x		X	R
Slow movement in the clean and jerk		X		X	X	X	M
Slow movement in the movements	X		X		X		R
Total deficiencies	2	5	3	5	6	5	
Final evaluation	B	M	R	M	M	M	M

In general, we can observe that of the 6 weightlifters who underwent the physical test, 4 of them are evaluated as bad (66.6%), 1 as fair (16.6%) and 1 as good (16.6%). After analyzing the results of the diagnosis of the weightlifters, it is confirmed that there are major deficiencies. For this reason, it is important to apply new ways or alternatives to carry out this process, which is why it is important to highlight that the methodological alternative goes through three fundamental stages with its set of actions to promote interdisciplinary execution, diagnosis and characterization, relationships, which are:

- Diagnosis and characterization.
- Execution.
- Control and evaluation.

These stages have a dialectical and interdependent relationship, comply with the principles of systematicity and system, assuming the alternative structure of Valle (2007), which states: an alternative can be considered a methodology, but it differs from it, because it contrasts with other previous possible solutions to the problem analyzed, having a specific character, that is, it is not systematically presented in practice, so it does not reach a certain degree of generality.

In the first stage, a diagnosis is carried out to determine or know the real state of the learning needs of the human and material resources that will intervene in this process to increase the development of explosive force for the 13-14 female category in Lifting.

Among the main actions of the first stage are:

- Dumbbells. of instruments for the application of the comprehensive diagnosis that responds to the proposed objectives. (Date: September 2022. Responsible: researcher).
- Application and tabulation of comprehensive diagnosis, such as surveys, interviews, class observations and technical tests. (Date: October 2022 Responsible: researcher).
- Train the human resources that will intervene in this process based on the different forms of methodological work. (Responsible: researcher).

This stage is the starting point for the implementation of the methodological alternative, in which the results of the pedagogical diagnosis of the real state of in the object will be obtained to give continuity to the other stage.

The second stage it will be operated as follows:

- Organize a methodological meeting at the school level to explain the characteristics of the work to be carried out by the different subsystems and achieve greater specificity of the tasks to be assumed. (Second week of October 2022). Responsible: researcher.
- Plan the different subsystems or organizational levels of the methodological work based on the tasks to increase the development of explosive strength in the female weightlifters of the 13-14 category of the Guantánamo EIDE (Third week of September 2022. Responsible: managers and researcher).
- Planning of plyometric exercises with their variants similar to the movements of classic weightlifting exercises to increase the development of explosive strength in weightlifters of the female 13-14 category of the EIDE of Guantánamo. (Fourth week of September 2022. Responsible: researcher).

Proposed exercises:

It is necessary that before applying the alternative method, athletes spend a period of one week adapting to the new exercises with practical exercises, to avoid injuries and prepare the joints of the feet, these exercises could be jumps similar to the of exercise number 1.

Exercise N°1.

Exercises for the lower body.

Exercise N°1 Name: Jumps on the same spot.

Objective: provide a stimulus to develop the cushioning phase of the lower limbs. Method of execution: starting from the initial position (standing, legs parallel to the width of the hips). A semi-flexion of the knees is carried out coordinated with an extension of the arms downwards for the previous push, a

coordinated extension of the knees, trunk and feet is quickly carried out, together with the elevation of the arms in front of the body with the aim of take off from the surface of the ground, successively achieving the jumps on the same place.

Variation: as a variant of the exercise, at the moment of the fall, the athletes must rest their feet in a jerk position, similar to the clean and jerk from the chest and from that same position take off again.

Methodological indication: It is important that the teacher begins with a detailed demonstration of the exercise as such, paying close attention to the moment in which the athletes make contact with the ground, correcting that the most important thing about the exercise is that the contact time with the surface from the ground should be as soon as possible. The bending of the knees cannot exceed 45 degrees, the exercise is performed cyclically and the arms must remain in the momentum phase for as little time as possible.

Exercise N°2.

Name: Multiple jumps and jumps.

Objective to achieve high explosiveness in the extension of the lower limbs. Form of execution starting from the initial position, (standing, legs parallel to the width of the hips). A semi-flexion of the knees is carried out coordinated with an extension of the arms downwards for the previous push, a coordinated extension of the knees, trunk and feet is quickly carried out, together with the elevation of the arms in front of the body with the aim of detach themselves from the surface of the ground trying to exceed the height of the fence, successively achieving multiple jumps and jumps.

Variation: as a variant of the exercise, at the moment of the fall, the athletes must rest their feet in a jerk position, similar to the clean and jerk from the chest and from that same position take off again.

At the time of flight, the elbows must always be upwards above the hands and forearms.

Methodological indication: the teacher should begin with a detailed demonstration of the exercise as such, paying close attention to the moment in which the athletes make contact with the ground, correcting that the most important thing about the exercise is that the time of contact with the surface of the ground It should be as soon as possible.

The bending of the knees cannot exceed 45 degrees, the exercise is performed cyclically and the arms must remain in the momentum phase for as little time as possible. The height of the fence will be determined taking into account the real possibilities of the athletes.

Exercise N°3.

Name: High plinths.

Objective: Fall from a height and rebound as soon as possible, thus achieving rapid extension of the knees.

Method of execution: starting from the initial position (standing with legs parallel and on top of a box or a height similar to or greater than 30 cm), drop and then jump again to the height of the box. Variant: as a variant of the exercise, at the moment of landing, the athletes must place their feet in a jerk position, similar to the clean and jerk from the chest, and take off again from that same position. At the time of flight, the elbows must always be upwards above the hands and forearms.

Methodological indication: the teacher should begin with a detailed demonstration of the exercise as such, paying close attention to the moment in which the athletes make contact with the ground, correcting that the most important thing about the exercise is that the time of contact with the surface of the ground It should be as soon as possible. You should never jump instead of stepping from the height of the plinth, as this increases the height and intensifies the stress of landing. The weight of the athlete's body and gravity to force against the ground.

Exercise N°4.

Name: Single-leg front jumps

Objective: Apply the maximum demand for explosive force during the extension of the lower limbs.

Form of execution: Starting from the initial position (standing with the support of only one foot), from this position a semi-flexion of the knee is performed and the segments of the lower limbs are quickly extended in coordination, seeking separation from the surface of the ground and moving to the forehead. The exercise is repeated cyclically to achieve single-leg front jumps.

Variation: At the time of flight the elbows must always be upwards above the hands and forearms. Jumps can also be done alternating legs.

Methodological indication: the teacher should begin with a detailed demonstration of the exercise as such, paying close attention to the moment in which the athletes make contact with the ground, correcting that the most important thing about the exercise is that the time of contact with the surface of the ground It should be as soon as possible. The trips should not be very long but high.

Exercise N°5.

Name: Jumps on the metacarpals.

Objective: develop maximum tension of the metacarpal joint.

Method of execution: starting from the initial position (standing, legs parallel to the width of the hips). A minimum flexion of the knees is carried out, coordinated with an extension of the arms downwards for the previous push, a coordinated extension of the knees, trunk and feet is quickly carried out, together with the elevation of the arms in front of the body with the objective of taking off from the surface of the ground trying to exceed the height of the low fence, successively achieving the jumps on the metacarpals.

Variation: At the moment of flight, the elbows must always be upwards above the hands and forearms. Jumps can also be done alternating legs and in all directions.

Methodological indication: The teacher should begin with a detailed demonstration of the exercise as such, paying close attention to the moment in which the athletes make contact with the ground, correcting that the most important thing about the exercise is that the time of contact with the surface of the ground It should be as soon as possible. The knees should not make maximum efforts, since you should try to practically jump with your feet.

Beginning of the different training meetings, such as: (Responsible: researcher).

- Methodological activity on the conceptualization of the different concepts and philosophy of Weight Lifting. (First week of October 2022. Responsible: researcher).
- Methodological activities on how the development of explosive strength works in the weightlifters of the female category 13-14 of the EIDE of Guantánamo. (First week of October 2022. Responsible: researcher).
- Methodological activities on how the process of developing explosive strength in the female weightlifters of the 13-14 category of the Guantánamo EIDE will be carried out. Through plyometric exercises. (Second week of October 2022. Responsible: researcher).
- Practical methodological classes on how the process of developing explosive strength will be carried out, in the female weightlifters of the 13-14 category of the EIDE of Guantánamo, through variants of plyometric exercises similar to the movements of the classic Lifting exercises. of Weights. 4 classes of this type will be taught (Second and third week of October 2022. Responsible: researcher).

Already in the third stage, the following actions are proposed:

- Establish indicators to evaluate the applied alternative. (Research specialists and managers). (First week of January 2023. Responsible: researcher).
- Carry out controls on the classes, to control and evaluate the effectiveness of the plyometric exercises similar to the movements of the classic Weight Lifting exercises, intended for the 13-14 female category of the EIDE of Guantánamo. (Directors. Monthly).

- Design methodological preparations to provide feedback and correct detected insufficiencies. (According to plan, month of February 2023. Professors and researcher).
- These actions must be focused with the purpose of increasing the development of explosive force in the weightlifters of category 13-14 of the EIDE of Guantánamo, applying them with dynamism, creativity and with a flexible nature to systematic updating.

CONCLUSIONS

With the application of this methodological alternative, it will be possible to achieve an improvement in the result of the preparation of explosive strength through the effects of plyometric exercises in weight lifting training, intended for the 13-14 female category of Guantánamo.

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