

Effect of Use of the Total Resistance Exercises of the Body Using the Suspend Device (TRX) on some Special Physical Abilities and Digital Level of Disc Throwing Competitors

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The exercises of total resistance of the body using the attachment device (TRX) are considered from the innovations in the field of sports training, and these exercises work on the development of strength in various types, especially the strength of speed (muscular strength) and strength bearing. The balance is also considered a major target of the exercises of total resistance of the body using (TRX) device. These exercises also work on the development of flexibility of different body joints. (30)

Charlie Fong et al. (2015) have stated that total body resistance exercises are based on body weight to gain muscle gains quickly by focusing on physical exertion without equipment. The total body resistance exercises are divided into 4 groups (balance exercises - squat exercises - push exercises - back exercises). TRX device is very carefully designed to suit the various exercises that are performed, while it has handles for the exercises that need reposing by arms and ties for foot that need reposing by foot. (28: 3).

Due to that the disk throwing Competitors need to join muscular sets of the arms and shoulder belt, set of muscles of trunk and back, muscles set of legs or all, according to the technical classification of the disc throwing competition to produce maximum strength as quickly as possible during the performance of the shot, which achieved by the exercises of resistance using (TRX) exercises as an effective mean in improving different types of physical abilities.

Through the researcher's work of theoretical readings and a survey of reference studies and scientific research (1) (4) (5) (11) (14) (16)(17)(18)(20), she has found that there is no study on TRX exercisers to improve Physical capacity and digital level of disc throwing Competitors except this study.

It has been shown a lack of research and studies used in this area, despite its importance in the development of physical and digital capabilities of various sports activities in general and the competition of disc throwing in particular, as confirmed by many studies (2) (6) (9) (13) (19) (25) (26) (28) (29) which led the researcher to conduct this study to find out the effect of using the TRX exercises on special physical capabilities and digital level of disc throwing Competitors.

Research Objective:

The research aims to improve the level of some special physical abilities and the digital level of disc throwing Competitors by using the total resistance

exercises of the body using TRX tool.

Research hypotheses:

-There are statistically significant differences between the averages of the pre measurement and the post measurement in some special physical abilities of the disc throwing Competitors (the research sample) in favor of the averages of the post measurements.

-There are statistically significant differences between the averages of the pre measurement and the post measurement in the digital level of the disc throwing Competitors (the research sample) in favor of the averages of the post measurements.

Research procedures:

Research Methodology:

The researcher has used the experimental method on one experimental group using the pre and post measurements due to its suitability and the nature of the research.

Research community:

The research community includes Competitors of Assiut branch of Athletics, a primary class of 12 Competitors registered in the Egyptian Athletics Association, Assiut Branch.

The research sample :The sample was selected in a deliberate manner from the Competitors of the Egyptian Athletics Association, Assiut Branch. The sample consisted of (7) Competitors as a basic sample, (5) Competitors as a survey sample.

Data collection tools:

- Resameter for measurement of height and weight (cm - kg) Measurement Tape
- Stop Watch
- Medical Balls
- Wooden chairs
- discs with legal weights
- discs with different weights
- dynamometer
- tablets
- High jump walls
- cones

Forms:

-Data collection form for the basic variables, special physical abilities and digital level of the sample members in question.

The researcher has conducted the measurements of homogeneity in order to find the torsion coefficient for the members of the basic research sample before the start of the proposed training program in order to indicate the homogeneity of the sample members to ensure moderation in the research variables, which may affect the results of the research-Table (1) - and the homogeneous variables that the researcher found are as follows:

1-Age - length - weight - the training age.

2-Special physical abilities

3-Digital level, which was the coefficients of torsion as shown in Table(1).

-Expert consultation form to determine the physical abilities of the disc throwing competition.

-Expert consultation form on the relative importance of physical tests appropriate to the physical abilities of the disc throwing competition.

-Proposed training program

Time distribution of the proposed training program:

The proposed training program is designed according to the scientific basis, the reference survey and the opinions of the experts, where the program included the following topics:

Determination of the time period of the training program:

The duration of the training program was set at eight weeks (two months). This period was divided into two phases as follows:

First stage (general preparation): (3) weeks.-

-The second phase (special and main preparation): (5) weeks.

Determining the number of training units during the training program:

1-The number of training units was determined by (3) units during the training week for the sample in question. Therefore, the number of training units during the program is 24 training units.

: Determining the time of training units

Time of training unit= 90 minutes.-

-Divided as follows (10 minutes for warming up - 75 minutes as a main part - 5 minutes for conclusion).

Total time for general program = $8 \times 3 \times 90 = 2160$ minutes.-

-Time of the main part only in the program without warm-up and conclusion= $8 \times 3 \times 75 = 1800$ minutes.

Total resistance time of the body = 720 minutes.-

-The total resistance exercises of the body are applied within the training unit in the main part.

-Percentage of total resistance exercises of the body 40% = 720 minutes of the program time without warm-up and conclusion.

-General physical preparation time = 360 minutes at 20% of program time without warm-up and conclusion.

-The time of special physical and skillful preparation = 720 minutes at 40% of the program time without warm-up and conclusion.

Basic experience and pre and post measurements in question:

-Conducting pre-measurements for the sample members in question in all basic variables, special physical abilities and digital level from 6/10/2018 to

8/10/2018.

-Implementation of the proposed training program on the sample in question from 11/10/2018 to 5/12/2018.

-Conducting the post measurements for the sample members in question in all basic variables, special physical abilities and digital level.

Presentation and Discussing of the Results:

A. Presentation of results:

The percentage of improvement between the pre and post measurements in the level of physical performance and the digital level of Competitors of disc throwing for the sample members in question.

Table (8) shows that the percentage of improvement of the physical tests (in question) where the percentage of improvement in the test of high jump of stability (2%) for the benefit of post-measurement, and the improvement percentage in the test of strength muscles (3%), while running test for 15 s, the improvement percentage was (20%), while the improvement percentage in the digital circles test was (7%) in favor of the post measurement, The improvement percentage in the test of bending the trunk to the front from standing was (24%) for the benefit of post measurement, and the improvement percentage in the test of standing by the leg (longitudinal) on the crossbar was (30%) for the benefit of post measurement, while the improvement percentage in the sloping prostration test from standing for 15 seconds was (16%), and in the attachment test of arms flexion, the improvement percentage was (20%). The results of Table (10) show that the improvement percentage between the pre-measurement and the post measurement for the research sample in favor post measurement in the digital level was (7%).

B - Discussion of the Results:

The researcher has attributed this to the practice of the research sample members of the proposed training program which included the total resistance exercises of body (TRX) using the TRX training tool, which led to the improvement of the special physical abilities.

This is consistent with the results of "Dalia Radwan Labib" `s study (2014) (6), which confirmed that the use of the TRX tool led to improve the muscular strength and flexibility.

It is also consistent with the results of "Maryam Mustafa Mohammed" ` study (2015), 19 which confirmed that the use of the suspended training device TRX led to the improve the elements of physical fitness, which represented in the muscular strength of the arms and legs.

The results of the study also agreed with the results of the study of "Samah Mohammed Abdul Muti" (2016) (9), which indicated that the suspend

exercises using TRX have led to the improvement of the skillful and physical abilities of the swimmers.

The results also agreed with the results of the study of "Nesma Mohamed Farraj" (2016) (22), which indicated that the training program using the total resistance exercises of the body TRX led to a clear and noticeable improvement in levels of balance and muscular capacity of legs, abdominal muscles and flexibility of the trunk and pelvis.

The results also agreed with the results of the study of "Lucas Salama" (2011)(26), which confirmed that the total resistance exercises of the body TRX led to improve the physical and skillful abilities of the Competitors of ice hockey.

They also agreed with the results of the study of Sukkfein Singh (2015), 29 which indicated that TRX exercises led to improve the fitness elements represented in strength, flexibility, ability, balance and agility.

This is in line with what Martin Tuma (2014), "Jordi Richard Gonzalez" (2012), 25 "Martin Hagnović" (2010) (24)) have stated that TRX exercises help to develop strength, flexibility, balance and stability as required in stadiums and in life in general.

Angus gaedtke et al (2015) (23) also have pointed out that TRX exercises are form of functional training that works to energize basic muscles and improve ability, flexibility and balance. The researcher has explained the obvious improvement in the results of special physical abilities to the fact that the total resistance exercises of the body (TRX), which contained the training program contain a various set of exercises, which shows the linkage and integration of the previous elements.

Bastoise Ahmed (1997) has referred to the importance of the skillful preparation for the level of pushing and throwing, which is not less than the physical preparation, but surpassing it in order to upgrade the digital level. We mean by the skillful preparation, teaching the method of performance and develop it, which appears through the optimum performance of the technique.

Peter Cheyna believes that the most important factor in the progress of the recent throwing competitions is the interest of coaches in improving the technique of these competitions and the consequent achievement of the best digital level. (3: 418)

In this regard, Abdel Rahman Zaher (2001), Adel Abdul Basir (1998), Nabila Abdel Rahman and others (1986), Zaki Darwish (1994) have referred that the primary aim of the disc throwing competition is to achieve the best digital level by throwing as farther as possible without violating the rules of competitions, and to achieve this there must be two basic factors which are high level in the way of technical performance, and high physical capabilities.

Through (7, 8, 9,10) tables, it has been shown the improvement of the special physical abilities and the digital level for Competitors of disc throwing due to training on the training program using total resistance exercises of the body TRX using the suspended training device (TRX), thus the first hypothesis had been achieved.

Conclusions:

- The total resistance exercises of the body TRX has improved some of the special physical abilities of the Competitors of the disc throwing
- The total resistance exercises of the body TRX has improved the digital level of the Competitors of the disc throwing.

Recommendations

- Using the proposed training program using the total resistance exercises of the body (TRX) in the training process in field competitions.
- Taking into account the graduation in training of total resistance exercises (TRX) from (easy- hard).
- The need for paying attention to dynamic balancing exercises using TRX for its significant contribution in improving the special physical abilities and digital level of the disc throwing Competitors.

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