

The effect of using vipr exercises on some physical variables and numerical level of javelin throw competition for Female students

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Introduction.

Sports' training is a great element in the preparation and development the physical abilities in order to reach the athlete the highest physical level to achieve sports achievement.

Scientific research has become one of the most important requirements for the development of our modern society in order to reach the highest levels in all fields, especially in sports.

Track and field competitions are a collection of individual races which includes relay races performed by team members; track and Field competitions are characterized by variety in events such as speed, long distances and throwing competitions also Physical requirements vary according to the nature of each competition. (2:3)

The javelin Throw competition is one of the track and field competitions that require special physical abilities and, as well as relies heavily on muscle capacity. This forces the athlete to depend on all the potential forces he has to maintain the dynamic path during the performance and Preparing muscles and producing maximum explosive power during throwing to achieve the best numerical achievement. (1: 7)

Recently, there have been many methods of training that lead to develop elements of physical fitness through the use of modern sports tools that help to develop various physical abilities, like **Vipr** tool, It is one of the modern training tools that help to develop the muscles of the arms and legs by adding weight with movement and this fits with the requirements of the javelin throw competition.

It also agreed with the results of **Naglaa Behairy (2003)**, which indicated that the development of the distinctive speed of the legs and arms has a positive and effective effect in the development of the numerical level of javelin athletes. (9:6)

Also the study of **Hussein Omar (2005)** indicated that specific quality exercises affect the teaching of javelin throwing and improving the numerical level of the javelin throwing competition. (2:4)

Alsayed Abdel Maksoud (1997) indicated that the levels of achievement in many activities are determined by the level of power and speed. (25: 2)

Vipr exercises are based on the use of the principle of movement with the use of load or weight or without weight, this method of training based on the integration of resistance and patterns of full body movement that means body workout as a unit.(10)

This type of exercise gives the biology of movement required, and is distributed muscle working on all Different body parts that help to stimulating process of muscle tissue remodeling.(11)

Vipr exercise offers a new concept in physical fitness and sports adaptation, which reduces the gap between movement and strength training. This type of exercise combines the full movement of the body with load, which enhances the athletic performance.

According to **Michael Dalcourt Michol. (2016)** findings, the creator of **Vipr** exercise, that human anthropology supports the integration of functional movement exercises with the use of external weight like using the Viper tool in the current training protocols to develop and improve physical fitness.(10)

As we move dynamically using all parts of the body in the training programs, adding weight (load) to the movement gives the body a double benefit and works to develop functional movements leading to better movement, and the development of strength and fitness at the same time. (9)

When performing exercises that integrate movement with lifting weight, the entire body moves in those exercises, which helping the athletes to achieve the movement and energy requirements.

Derek, et al. (2016) notes that modified and complex movement exercises which using movement with lifting weight effectively affect on muscles, Tendons, nerves and other body systems.(12:1)

Also the study of body movement and adaptations shows exercise performance by moving an external weight that improves balance, agility, and dynamic strength to reach physical goals such as improving performance at all levels of sport. (10)

Vipr exercises have been developed in particular by the need to integrate training with motion by adding weight into traditional training protocols in a safe and effective manner.

Panjabi white. (2001) mentioned that the performance of motion exercises with external weight helps to create motor and mechanical change to build strong and flexible bodies to perform in a positive way. (10:7)

As **Derek, et al. (2016)** points to the importance of **Vipr** exercises organize the transitional movement and coordinate all joints of the body in the motor chain, by moving the whole body, reinforcing the basic principles of biomechanics. And the integration of multi-joint movements is the biomechanical method to

move all parts of the body without focusing on a particular part, but rather the distribution of muscle work to all parts of the body.(12:1)

From the previous clarification, the researcher sees the importance of looking forward to every update in the field of physical abilities development and testing the possibility of its application.

Research Aim.

This research aims to improve some physical variables and numerical level of javelin Female Athletes.

Research hypotheses:

- 1- There are statistically significant differences between the pre and post measurements on some physical variables and javelin numerical level of control group.
- 2- There are statistically significant differences between the pre and post measurements on some physical variables and javelin numerical level of experimental group.
- 3- There are statistically significant differences between the control and experimental group on some physical variables and javelin numerical level on favor of experimental group.

Research terms:

ViPR tool:

ViPR tool is equipment that helps to add movement and strength training to the total body exercise which provide loaded movement training patterns that will increase functional mobility and agility while also improving multi-directional stability, strength and power.



Search procedures:

Research approach:

The experimental approach used two groups control and experimental group with the pre and post measurement standard design.

Research community:

The research community includes female physical education students 2nd stage university year 2017/2018.

Research Sample:

The subjects for this experiment (n=27) female student divided to (2) groups, control group (n=10), experimental group (n=10), and (7) students for the sample survey.

Table (1)
Mean \pm SD and skewness for recherché variables (age, height, weight, speed, power, agility, strength, balance)

(N=27)

Variables	measuring unit	Mean	SD	skewness
Age	years	19.20	0.45	2.24
Height	Cm	162.8	2.59	1.23
Weight	kg	59.4	1.95	0.07
30 m speed	Sec	6.9	0.2	1.33
Medicine ball throw (3 kg)	M	10.25	2.25	1.23
T Drill test	Sec	12.67	2.55	2.44
Standing Stork Test	Sec	15.10	3.20	1.06
Leg strength test (Dynamometer)	kg	36.25	4.15	2.05
Bench Press Test	kg	15.50	3.12	0.08

Table 1 shows: observed in Age, height, weight, speed, power, agility, strength, balance), ranging between (0.07 - 2.44) (\pm 3) indicating that the sample combined represents a moderate society in these variables.

Material and Methods:

Measurements tools:

- Restameer /for measuring length (cm).
- Medical balance/ to measure the weight of the nearest half a kilogram
- Dynamometer
- Stopwatch/ for nearest (1 / 100^s).
- Tape measure/ (cm).
- vipr tool/ 4-7 kg.
- Medicine ball.
- Cones.
- weights

Research Tests:

1- Physical variables Tests.

- 30 m speed
- Medicine ball throw (3 kg)
- T Drill test
- Standing Stork Test

- Leg strength test (Dynamometer)
- Bench Press Test

2- Numerical level of javelin throwing Measurements.

Suggested exercises:

1- Aim of exercises.

- Improve physical variables and numerical level of javelin throw.

2- Foundations of the development of training:

- Attention to warm up and prepare the body for training.
- Suitable exercises using vipr tool for the research sample.
- Giving consideration of individual differences between students.
- Progressive of exercises from easier to harder and from simple to complex.
- Variety of exercise inside the training units.

3- Exercises protocol :

- Experiment Duration (6) weeks.
- Number of units (18) units (3) units per week.
- The time required to apply the exercises (20) minutes vipr exercise.
- Training unit time (80-120) minutes divided as follows:
 - Warm up (15m).
 - Specific event workout (60 m) divided into:
 - ☒ Technic to teach and improve the javelin throw performance.
 - ☒ Vipr Exercises for the development of legs, arms movements.
 - The Cool-down (10s).

Research procedure:

Survey Study:

The Survey study includes (7) students from the research community and outside the experimental research sample from 20-23/2/2018 to achieve the following objectives.

- 1- Identify the suitability of vipr exercise for students.
- 2 - Identify the selection of tests in terms of the order and time of application of each test commensurate with the students.

Pre measurement:

The measurements were applied from 26; 27/2/2018 the measurements and tests included the following variables: (Height - Weight - 30 m speed - Medicine ball throw (3 kg) - T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test).

Research implementation:

The research experiment was implemented at faculty of physical education for girls, from 1/3/2018 to 15/4/2018 for (6 weeks), (18) units, (3) days per week.

Post measurement:

Post-measurements for all research variables were applied from 17, 18/4/2018.

Statistical analysis

All statistical analyses calculated by the SPSS statistical program. The results reported as means and standard deviations (SD).

- Arithmetic Mean.
- Standard Deviation .
- Skewness.
- Median.
- Paired Samples T-Test
- Percentage of improvement rates.

Results.

Table (2)
Significance of differences between the pre and post measurement of physical variables and numerical level of javelin throw of control group.
(N=10)

Variables	measuring unit	Before		After		(T) value	Sig	Rate of change
		mean	SD	mean	SD			
30 m speed	sec	6.9	0.2	6.01	0.03	1.05	NS	12.89%
Medicine ball throw (3 kg)	M	10.85	2.25	15.00	1.10	3.66	S	38.24%
T Drill test	sec	12.75	0.55	13.85	0.25	1.03	NS	8.62%
Standing Stork Test	sec	15.10	3.20	16.10	0.15	0.85	NS	6.62%
Leg strength test (Dynamometer)	kg	36.25	1.15	37.07	1.25	1.02	NS	2.26%
Bench Press Test	kg	15.50	1.12	16.53	1.50	0.99	NS	6.64%
numerical level of javelin throw	M	8.85	2.20	10.25	1.10	1.13	NS	15.81%

(T) Value of T is the table at a significant level (0.05) = 1.812

Table (2) shows: non-Significant Difference between the pre and post measurements in (30 m speed - T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw . and there is Significant Difference between the pre and post measurements in (Medicine ball throw (3 kg).

Table (3)
Significance of differences between the pre and post measurement of physical variables and numerical level of javelin throw of experimental group). (N=10)

Variables	measuring unit	Before		After		(T) value	Sig	Rate of change
		mean	SD	mean	SD			
30 m speed	sec	7.01	0.2	5.43	0.50	2.89	S	22.53%
Medicine ball throw (3 kg)	m	10.95	2.25	16.05	1.35	3.45	S	46.57%
T Drill test	sec	12.88	0.55	9.85	0.50	4.66	S	23.52%
Standing Stork Test	sec	15.66	1.20	25.63	0.15	2.98	S	63.66%
Leg strength test (Dynamometer)	kg	36.75	1.15	45.07	0.04	3.45	S	22.63%
Bench Press Test	kg	15.75	1.12	20.53	0.20	4.20	S	30.34%
numerical level of javelin throw	m	8.75	2.20	15.10	0.10	3.69	S	72.57%

(T) value of T is the table at a significant level (0.05) = 1.812

Table (3) shows: Significant Difference between the pre and post measurements of experimental group on (30 m speed - Medicine ball throw (3 kg)- T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw in favor of the post measurements.

Table (4)
Significance of differences between the control and experimental group on physical variables and numerical level of javelin throw (N=20)

Variables	measuring unit	control		experimental		(T) value	Sig
		mean	SD	mean	SD		
30 m speed	sec	6.01	0.03	5.43	0.50	3.58	S
Medicine ball throw (3 kg)	M	15.00	1.10	16.05	1.35	4.98	S
T Drill test	sec	13.85	0.25	9.85	0.50	2.99	S
Standing Stork Test	sec	16.10	0.15	25.63	0.15	3.46	S
Leg strength test (Dynamometer)	kg	37.07	1.25	45.07	0.04	5.85	S
Bench Press Test	kg	16.53	1.50	20.53	0.20	3.59	S
numerical level of javelin throw	M	11.25	1.10	15.10	0.10	4.68	S

(T) Value of T is the table at a significant level (0.05) = 1.725

Table (4) shows: Significant Difference between control and experimental group on (30 m speed - Medicine ball throw (3 kg)- T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw in favor of the experimental group.

Discussion:

Table (2) shows: non-Significant Difference between the pre and post measurements in (30 m speed - T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw . and there is Significant Difference between the pre and post measurements in (Medicine ball throw (3 kg).

The researcher attributed these results to the followers of the control group to the traditional method of teaching and training students for the javelin throwing competition As for the improvement in the test of Medicine ball throw (3 kg) test the researcher believes that as a result of repeated javelin throwing, this led to the development of the explosive power of throwing arm.

Table (3) shows: Significant Difference between the pre and post measurements of experimental group on (30 m speed - Medicine ball throw (3 kg)- T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw in favor of the post measurements.

The researcher attributed these results to the use of the tool Viپر, which is one of the modern training tools that help to develop the muscles of the arms and legs by adding weight with movement and this fits with the requirements of the javelin throw competition.

These results are consistent with the results of **Naglaa Behairy (2003) (6)**, which indicated that the development of the distinctive speed of the legs and arms has a positive and effective effect in the development of the numerical level of javelin athletes.

Also the study of **Hussein Omar (2005) (3)** indicated that specific quality exercises affect the teaching of javelin throwing and improving the numerical level of the javelin throwing competition.

Table (4) shows: Significant Difference between control and experimental group on (30 m speed - T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw in favor of the experimental group.

The researcher attributes these results to the digital level of the students using Viپر exercises in the same motor path of the skill performance of the javelin throwing competition, which positively affected

These results are consistent with **Elsayed Abdel Maksoud (1997) (2)** indicated that the levels of achievement in many activities are determined by the level of power and speed.

Also this type of exercise gives the biology of movement required, and is distributed muscle working on all Different body parts that help to stimulating process of muscle tissue remodeling.

And according to **Michael Dalcourt Michol. (2016)(11)** Findings, the creator

of **Vipr** exercise, that human anthropology supports the integration of functional movement exercises with the use of external weight like using the Viper tool in the current training protocols to develop and improve physical fitness.

Derek, et al. (2016)(1) notes that modified and complex movement exercises with using movement with lifting weight effectively effect on muscles, Tendons, nerves and other body systems.

Panjabi white. (2001) mentioned that the performance of motion exercises with external weight helps to create motor and mechanical change to build strong and flexible bodies to perform in a positive way. (16:7)

Thus, the search hypothesis has been proved "There are improvement on some physical variables and numerical level of javelin throw competition for Female students.

Conclusion:

- 1- There is non-Significant** Difference between the pre and post measurements of control group on (30 m speed - T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw. and there is Significant Difference between the pre and post measurements in (Medicine ball throw (3 kg)).
- 2- There is Significant** Difference between the pre and post measurements of experimental group on (30 m speed - Medicine ball throw (3 kg)- T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw in favor of the post measurements.
- 3- Significant** Difference between control and experimental group on (30 m speed - Medicine ball throw (3 kg)- T Drill test - Standing Stork Test - Leg strength test (Dynamometer) - Bench Press Test - numerical level of javelin throw in favor of the experimental group.

Recommendations:

- 1- Using the vipr exercise tool to improve the numerical level of female students on javelin throw.
- 2- Conducting such a study on different track and field events.
- 3- Conducting such a study on other kinds of samples.

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