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Comparison of Certain Specific Physical Abilities Between Discus Throwing and Shot Put for Elite Advanced Athletes.

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Abstract

The study aimed to compare in some of the special physical abilities the explosive force - the maximum force - the force characteristic of speed) between the discus throwing and weight pushing activities of elite players in the category of applicants. The researchers used the descriptive approach in the comparative study method, represented in the research curve that reached (10) athletes by (5) weight pushing players and (5) discus throwing players. Special physical ability tests were applied to the research sample. If the results show that there are significant differences in the explosive strength tests of the arms between the effectiveness of discus throwing and weight pushing, there are significant differences between both effects in the variables studied (the strength test characteristic of the speed of the arms - the maximum strength test of the arms)because the two events are throwing sports, and the researchers recommended not to conduct similar research to study the relationship or comparison between the effectiveness of discus throwing and weight pushing, being(effective) describing among the throwing activities

Keywords: physical abilities, discus throwing and weight pushing.

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Introducing

Sport is one of the most beautiful areas in which peoples are interested. 'Achievement of sport is a supreme national value carried by heroes as an important type of discrimination in developed societies and they are proud of it for generations to come. This achievement was not a result of chance or a stroke of luck, as it is said, but rather was achieved through the joint efforts of the strenuous and great sponsor and the supportive trainer and athlete in light of the rapid scientific development at various levels, whether as training courses or assistive devices. 'In recent years, athletics and its various events have witnessed a great and tremendous development. The difference in achievement is almost a fraction of a second or some centimeters. Various sciences have contributed to the achievement of these world records, which sometimes reach the unexpected digital achievement.

Sports training based on sound scientific standards and foundations had the upper hand in changing the vocabulary of the prepared and planned training curricula, whether short, medium or long-term planning and document On the basis of the nature of the competition and the number of training peaks during the training year, which may be mono-double or multi-peaks in a physically integrated, functional, skilled and planned preparation, and to a large psychological interaction that deals with the expected and unexpected situations, whether in the preparation stages of the competitions of all the above, indicate that the effectiveness of throwing the javelin and pushing the weight is one of the interesting sporting events that depend on achieving the furthest distance to throw according to a skillful serial technique for the shooter entitled the precise skill mastery of the parts that contribute to the body, whether limbs or muscles, and what it requires of very large throwing power, in which physical and motor abilities contribute significantly and influentially to achieving the furthest distance to throw. The circle in which the shooter moves, which diameter is seven feet(2.135m/cm) and the presence of the arresting plate measures(10cm) represents additional determinants/burdens the shooter in addition to the development and acquisition of physical and motor abilities according to privacy Effectiveness' The stage of pushing the weight and leaving the hand of the pitcher is one of the most important stages that the pitcher passes, which is either high and as far away as possible and the same throwing stage has important parts (force mode - basic acceleration – arm movement). In the effectiveness of throwing the discus, the rules of throwing the iron ball itself and the discus throwing circle diameter (2.5m/cm) and the world number of men (74.80m/cm) are applied. In order for the discus player to get the longest possible distance, the discus must be launched at the maximum possible speed and at a certain angle and rotate around the same cycle and a half and throw with an arm with lateral movement and fly the discus in the air. 'These and other requirements are precise peculiarities in the performance of throwing and pushing the discus and weight. They constitute a great training burden for practicing athletes. They must bear large training volumes for the purpose of developing the physical capabilities of performing each event in order to increase the number of centimeters of the tool to achieve achievement. Both events need strength in throwing by the tools used for the purpose of achieving the discus throwing performance requirements, including the pre-throwing stage - the privation stage and the actual basing of drawing on the discus. Then the stage of rotation depends on the specificity of each shooter, so the end of the throwing or the so-called pivot stage

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is followed by the stage of disposal and leaving the discus at the beginning of the start of the discus. The last stage is represented by the way in which the shooter is balanced and organized. 'These kinetic positions require the players of the exercises to perform the muscles of the arms and shoulders, the weight or the discus, to get rid of here. The importance of the research in the comparison is some physical and kinetic abilities, sports discus throwing and throwing the weight of the research sample represented by the elite players of the category of applicants.

The studies that dealt with the subject of research,)Ghanem ،Faisal و ،Ahmed(2017 ، which aimed to identify the values of some biomechanical variables for the stages of weight throwing, while identifying some errors in the mechanical performance of the stages of weight throwing, with the development of proposed corrective exercises, some extinguishing the mechanical performance of the stages of weight throwing. The researcher used the descriptive approach of the research sample and his sample represented the players of the Iraqi national team to throw weight. As for the (Jasim & Naji, 2019) study, the study aimed to find special strength exercises in the development of working muscles in the stages of throwing and final throwing of the discus. The purpose of the research is to identify the impact of these exercises on some variables in the motor path of the working muscles in the throwing and final throwing of the discus for the players of the national team 'If the research sample reaches (7) of the players of the national team for youth, the experimental approach was used to design the two equivalent experimental groups), while the study of (Yahya Ghadban Bargam'2018) as the proposed program positively affected all Of the strength of the working muscles, as these muscles contribute mainly to the performance of the main section at the moment of the start of the disk, and in a study, it (Ali B. A., 2014) was mentioned that the exercises according to the torque with different resistances according to the increase of these resistances by training on a scientific basis as well as according to the speed of skills led to an improvement in the ability of the muscles of the arm and shoulders explosive and that the development of the explosive ability is clear when comparing the results of the experimental group with the results of the control, in a study (Amer Fakher Shafaki 'Walid Jalil Ibrahim' Raja Abdul Karim Hamid '2019), each of which stated that the use of exercises (weights - body weight) contributed to the development of the components of fitness for shooting final The achievement of the effectiveness of throwing the discus. As for (height'2010), it was mentioned that increasing the rotational energy of the arm aimed at the discus has a positive impact on the speed of starting the discus and then achieving a better completion distance. The difference and the research was to prepare special force exercises and identify their impact on the variables of the kinetic path of the muscles working in the throwing mode and the final throwing of the discus for the players of the national youth team.

Materials and Method

The two researchers used the descriptive approach in the method of (comparative study) in order to suit the research objectives, and the research community included (12) players representing the two events , and then deliberately selecting the research sample, which are (10)players who make up (83.33%) and by (5)players pushing the weight and(5)players throwing the discus in order to confirm some of the important points represented in the validity of the tests and their precedence when performing the efficiency of the assistant team and the time allocated

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for each test and the suitability of the place and its conduct, for the purpose of obtaining accurate and reliable results, the scientific research report confirms the conduct of the exploratory experiment, which is defined as "practical training for the researcher to stand by himself on the negatives that meet him during the test to avoid". The researchers also used a number of information collection methods, including Arabic and foreign sources, observation and tests, and the use of the following tests:

Table (1). Physical measurement

Physical capacities	UOM	Honesty	Stability	Objectivism
Explosive force	Meters	91	O	0.85
Full throttle.	kg	0.78	0.88	0.95
Power Characteristic of Speed	w	0.67	0.98	0.78

Tests used in the study Appendix (1)

For the purpose of confirming the validity of the tests, the two researchers found the scientific basis for the tests. The validity represents (the validity of the content) by distributing the questionnaire to determine the physical abilities (Appendix1) and their tests to the experts (Appendix2).The validity of the content is “a measure of the extent to which the tests represent the aspects of the measured aspect of their research and logically analyze the test materials and elements to determine the functions and aspects and attribute each of them to the entire test." (Bahi, 1999) As for the stability, it was done by using the test and returning it. ‘Objectivity was also found, which means the clarity of the instructions for applying the test and calculating grades (Bahi ‘1999)Table (1) The coefficients of validity, stability and objectivity tests the physical and motor abilities of the players of the disc and weight.

Table (2). Coefficient of torsion and normal distribution of the research sample

Variables	UOM	Hours	W	Mediator	Modulus of torsion
Age	Year	7000.	2.28279	9000	713
Weight	kg	107	7.79530	107	.743
Length	cm	9000	6.12917	7000.	034.
Training Age	Year	9000	10050	10050	.238

* The value of the torsion coefficient is within the limits of + -1 for the variables of Table 1, so the data is within the normal limits

The two researchers also found the torsion coefficient and the normal distribution of the value of the research Table (2) and the researchers' list after those procedures; the tests representing special physical abilities (Appendix 3) apply separately for each discus throwing players. The

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weight was pushed on Monday, 29-4-2024. The researchers used statistical means through the statistical bag (spss) and the use of relevant statistical laws (mean) and standard deviation 'torsion coefficient and tests of interrelated samples). The time research procedures were determined from (29/4/2014-12/5/2024)

Results

The researchers presented the results in the form of a table and as follows:

Table (3)

Results of the Special Tests for Physical Abilities, Including Mean Values, Standard Deviation, Differences between Means, Standard Error of Differences, Value of (t), and Significance Level (sig) for the Two Groups under Study.

Two groups under consideration

Tests Special Physical Abilities	UOM	SPG	0-	W	Calculated o	Sig	Significance
Explosive force	meter	counterbalance	7.89	24	6 766 047	.000	Legal
		Disk	8.76	.20			
Power Characteristic of Speed	kg	counterbalance	16.8	1.48	1.540	.162	immaterial
		Disk	15.2	1.78			
Full throttle.	w	counterbalance	130	7.90	.060	073	immaterial
		Disk	141	8.94			

Below the significance level (0.05) and the degree of freedom (5+5-2 =8) Table score (2.31)

Discussion

Through the statistical analysis of the results shown in the above table, we note through a comparison in the results of the two groups in the explosive strength test of the arms that there are significant differences in favor of the disc players due to the quality of the exercises used by the disc players in the training units. It is noteworthy (Jasim & Naji, Special Strength Training to Develop the Working Muscles During the Shot Preparation and Final Throw Phases, and Its Effect on Discus Throwing Performance for Youth., 2019)that the moving strength training contributes to the development of most types of strength. This is confirmed by current research findings.

The two researchers agree with the idea that general force exercises contribute to the development of explosive force, but in the test, the strength distinguished by speed, the results

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indicated that there are no significant differences between (throwing the discus and pushing the weight), because the calculated value (T) is greater than the table value under the level of significance greater than (0.05) players of both events.

In a study of explosive force, it was shown that there is a statistically significant correlation in the explosive force of the effectiveness of throwing the discus and pushing the weight. The researcher attributes the reason for the emergence of this relationship to the fact that the effectiveness of throwing the discus and pushing the weight depends mainly on the explosive force of the muscles of the arms in terms of training loads, tension and volumes in their training. Ali Sadiq)Sadiq(2016 ، says about Raysan Kharibat that explosive force exercises improve the ability of the athlete to activate the number of fast contracting muscle fibers at the same time and as soon as possible, as these Effective is the one-time implementation of the performance, called explosive power or explosive force (Salam & Dhaha, 2023), as well as the use of force in the shortest time to produce movement. The two researchers use the exercises for each of the three shooting events in order to increase the development of this important and necessary physical trait and thus develop it in an optimal manner. Shorouk Mahdi agrees that the use of special exercises leads to the development of the explosive power of the two men (Easa et al., 2022), as it is associated with various sports skills, and Shaimaa believes that there is a direct relationship between explosive power and skills (Kadhim, 2024) , as well as it is inherent to the speed trait to achieve optimal achievement As it is the ability to give strength at maximum speed, the researcher attributes to the use of exercises that are practiced by discus throwing players and pushing the weight led to these non-significant results. The researcher also sees the reason for the development in the effectiveness of discus throwing and pushing the weight due to the exercises used by players that are effective in developing the strength characteristic of the speed of the muscles of the arms through the results obtained, through the gradient in the exercises performance movements to serve the motor activity and the goal of using muscle groups involved in discus throwing and pushing the weight Force characterized by speed as "the ability of the neuromuscular system to produce rapid force, which requires the degree of compatibility in integrating the attribute of strength and the attribute of speed into one component")Ahmed و Naser(1993 ، and the results showed that there are no significant differences between the two groups throwing the disk and pushing the weight, which amounted to (0.073) because the two activities depend greatly on the maximum force and body mass, and this is what players are constantly trained to do. The two groups are characterized by a good ability of maximum force and there are no differences , the maximum force is one of the most important physical qualities and necessary types of sports activities if it requires the athlete to exert The maximum strength it has against external resistance and due to what the sport needs to throw the discus and push the weight of the maximum force well to all the muscles of the arms and torso "" the maximum strength that the muscle or group can produce through the process of contraction" (Hussein, 1998)

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Conclusions

In light of the results, the researchers reached the following conclusions:

1. It is clear from the research results that the discus throwing group is better than the weight pushing group in the explosive strength test of the arms, and this is due to the training system followed by the discus players.
2. The connection was made to the lack of significant differences between the discus throwers and the pushing of the weight in the test of the strength characteristic of the speed of the arms and the maximum strength of the arms

Recommendations

1. The researcher recommends not conducting similar research to study the comparison and the relationship between the effectiveness of discus throwing and pushing the weight of special physical variables as there are no statistically significant differences, if any, which are rare because they are classified as throwing activities.
2. The two researchers recommend conducting research on the directions of experimental variables on the same research sample.
3. The researchers recommend the use of modern devices based on electronic scales to measure variables.

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Appendix (1)

Questionnaire to indicate the validity of physical tests and movement at throwing events

Dear Sir, Mr.

Greetings...

The two researchers conducted a study of the tagged research:

(A study comparing the special physical abilities between the two discus throwing activities and pushing the weight of elite players to the advanced category) in determining the special physical abilities and nominating their tests for the current study

Thank you for your cooperation

Expert name
Academic title:
Major
Place of Work
Date
Signature:

Researchers

Physical and Motor Abilities Selection Form

		Repair	It does not fit
Physical capacities	Explosive force		
	Full throttle.		
	Power Characteristic of Speed		

Comments

Adding physical abilities and other motor skills according to the expert's opinion:

1.
2.
3.
4.
5.

Sr	Special Physical Aptitude Test	repair	It does not fit
1	**Explosive Strength Test of the Arms**		
2	**Speed Characteristic Strength Test**		
3	**Maximum Arm Strength Test**		

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Appendix (2)

Showing the names of experts in arbitration
Names of the experts

Sr	Name of the Expert	Scientific title and name	Jurisdiction and Place of Work
1-	Abd al-Nabi	Prof. Dr.	Physical Education and Sports Sciences/ University of Baghdad/Square and Square - Injuries
2.	Entisar	Prof. Dr.	Physical Education and Sports Sciences/ University of Baghdad/Square and Square - Biomechanics
3.	Haider	Prof. Dr.	Physical Education and Sports Sciences/ University of Baghdad/Square and Field - Training
4-	Ismail Alani	Prof. Dr.	Physical Education and Sports Sciences/ University of Baghdad/Square and Field - Disabled
5.	MAZIN HUSSAIN	Lecturer	Physical Education and Sports Sciences/ University of Baghdad/Square and Square

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