

The effect of exercises according to the target time of the equation (Touchdown) on partial distances, skillful performance and achievement in 400 meters hurdles' advanced runners

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Abstract

The goal of sports training is the number of athletes to achieve the best achievement in efficiency specialist through exercises that apply training programs in accordance with the methods and methods of sports training and by energy systems, and is the effectiveness of the enemy (400 m hurdles), one of the events that require highly trained and the most important requirements are high performance The ideal is to pass the barriers (skill performance) and the enemy from the starting line to the first barrier and the enemy between the barriers with a smooth flow and an ideal distribution of effort and what this distribution requires of high physical capabilities that are compatible with the physical, physiological and skill abilities and capabilities of the runners during training or competition and the enemy from the tenth barrier to the finish line, to achieve the best achievement of the enemy effectively, so headed researcher Wen to develop this Almngara TThrough the use of exercises according to the target time to equate (Touchdown), And to identify the impact of the partial distances and skillful performance and achievement of a hostile (400 m hurdles) applicants, as well as to identify the advantage of these exercises for exercises adopted by trainers in the development of the variables under study and the completion of the effectiveness ran (400 m hurdles), and the researcher used the One experimental approach in a manner the experimental and control groups Almtkavitin chose sample his research m from the clubs of Karbala in a way comprehensive inventory was the most important research procedures determine partial distances and determine the measurement of research variables, and used statistical methods parametric arithmetic mean, standard deviation and the law of Levin and the law (T(For symmetric and independent samples of equal number to find differences between the pre and post tests and between the posttests between the experimental and control groups) and among the most important conclusions, the exercises contributed according to the target time to equation Touchdown(In developing the variables under study and giving runners the ideal distribution of physical effort exerted, whether in competition or training, and thus improving achievement, and the preference of these exercises over the exercises used by trainers, and the most important recommendations are the adoption of exercises according to the target time to equalize) Touchdown In the development of the variables under study and the achievement of running (400 meters hurdles) and the need to

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pay attention to it by the trainers and those concerned with the specialty, and to emphasize the skillful aspect of overcoming barriers, and to apply these exercises to other activities and to different groups.

Keywords:*exercises, target time, Touchdown, partial distances, skillful performance, achievement, 400 meters hurdles, advanced runners*

Introduction

The 400m hurdles is one of the athletics activities that are characterized by high speed, strength and excitement, and their performance depends on some biomechanical capabilities and high technical performance and on the energy production of the anaerobic system, which requires high training to bring about the ideal adaptation of the functional devices to withstand the high voltage during the race to maintain the frequency speed High mobility through the ideal distribution of effort between the partial distances of the ten barriers to achieve the best time to travel the distance, so the trainers must work with their runners during the training process, provided that the counting and crossing the barriers is in a standardized manner compatible with their physical and functional potential, and this means that they are cut The distances between the ten hurdles are within time limits appropriate to the capabilities of the runners and ensure that they complete the total distance, especially the third or the last quarter of it, with high efficiency, that is, the fatigue that appears clearly in this distance and gradually increases to reach its highest peak at the end of the race, and this can only be achieved through Work with runners according to the target times to cut the distances between the checkpoints as well as the distance from the starting cushions to the barrier The first and the distance from the barrier X until the finish line (**Resan, 2002**), and this allows the aggressive ideal distribution of the effort to overcome the Alassaob data they face during training or competition, and this certainly requires good planning by the trainers and the determination and good old feast before them and by hostile, that Skillful performance is one of the most important requirements for the effectiveness of (400 m) hurdles, which requires the runner to have the process of crossing the barriers accurately and perfectly to ensure that the runner does not lose time so that the athletic achievement is not affected, and this cannot be achieved if there is random cutting distances between the barriers Because this will generate fatigue that hinders performance in general, especially the technique over the barrier (crossing barriers), so it requires the runner to run according to the time that matches his ability and capabilities to avoid or overcome these matters, and to improve the time of partial distances for this activity (improve speed the enemy) and maintain at these speeds, especially in (the four hurdles last) because of the appearance of fatigue will improve the effectiveness of this achievement, and this means that the training has achieved the desired goals, and that by applying the principle of distance me The barriers are within the time limits of the ability of the runners, and this certainly leads us to improve what we want to achieve, which is the achievement (**Qasim, 2000**), and from here the importance of research in preparing exercises according to the target time for the equation (Touchdown) And the impact of her on the partial distances and performance skill (technique barriers) and the achievement of a hostile 400 - meter hurdles .

Research problem : Through the modest experience of the researcher yen noticed that there is a decrease in the level of achievement, and when compared with recent results, as was the figure (52.23 sec) and the Iraqi figure record (49.95 tha) with global levels and index the world (46.78 tha) we find that the P thinner great including this

shows the decline or decline in the level of sports and this requires research and investigate the reasons for this decline, he noted researcher w Wen that runners Yum Tikon high potential of speed for your event, but endurance they do not achieve achievement desired of them one who fits with these possibilities, and if what a brother Zna into consideration the quality of the technique barriers before them, as well as humiliation as indicate most of the scientific sources that the difference time between the enemy (400 m freestyle) and (400 m hurdles) for the hostile barriers are (2.5 sec - 4.5 sec) and sell d research and investigation and conduct interviews with some runners and coaches about personal figures for these runners to the effectiveness of (400 m freestyle) Make sure that the researcher yen that the time between the difference of the two events will be at the lowest level which is (4.5 sec) and even in some more often than that, and through the watch runners training Show that they do not observe the process of cutting the distances between the barriers according to their achievement of personal and their abilities physical ensure their perfect performance to cut off traffic, of the total in terms of distances between pressing barriers and time pass (ie, random enemy and not to legalize cutting the distance that harbingers clearly appear in the third or last quarter of the race where we see that the time of this distance and technique over the barriers is illogical and does not meet the ambition to achieve good achievements for the rehabilitation of Aadaiana foreign competition), ie there is no practical target to cut total distance or their parts if divided into certain distances are regulated or scientific, and this is certainly my counting a big problem lost the great effort of the runners in the exercises as well as it is a significant obstacle of preventing the achievement of counting Aiaan achievements fit in with its possibilities of good, so headed researcher Wen this to study the problem and Tove j t field and scientific information increases the knowledge of coaches, athletes and service to our country dear.

Research aim: The numbers of exercises according to the target time for the equation (Touchdown), Learn about the effect of exercises according to the target time of the equation (Touchdown) At the distances of the partial and skillful performance and achievement of a hostile 400 - meter hurdles, to identify the advantage effect between the exercise (control group and experimental) at the distances of the partial and skillful performance and achievement of a hostile 400 - meter hurdles.

Research hypotheses : that exercises according to the target time equation (Touchdown) A positive effect in the distances of the partial and skillful performance and achievement of a hostile 400 - meter hurdles, the advantage of the experimental group for the control in effect at the distances of the partial and skillful performance and achievement of a hostile 400 - meter hurdles.

Research limits

Human field :Aadaao 400 hurdles applicants in the province of Karbala clubs holy sports season 20 19 – 2020.
Temporal field: Length of 8 / 2 / 2020 until 21 / 5 /2020. Spatial field: Golf Training Center of the Central Federation of Athletics In Karbala Governorate.

Methodology

Research Method: The researcher used the one experimental approach to design the experimental and control groups Almtkavitin for suitability to the nature of the problem and research objectives and assumptions.

Community & research sample:Select the research community from hostile clubs governor of Karbala to the category of applicants for the effectiveness of the enemy (400 m hurdles) totaling (10 runners), and chose the

researcher Wen sample examined in a manner limited to comprehensive and up (100%), and then they divided the sample randomly simple to the two groups (control group and experimental), and each group of five hostile were made homogenization process research sample using the law of statistical personnel (Levine) in measurements (height, weight, age time, life training) because of their influence on the research variables, and proved that the sample of individuals Research is homogeneous in these variables, as the level of significance of Levin's test was respectively (230, 151, 595, 519)It is greater than the level of significance)05 Which indicates the homogeneity of the individuals of the research sample.

Means and instruments and tools used in the research: the researcher used Wen methods and devices of the following tools: observation, test and measurement, personal interview, calculator electronic hand - type (SHARP), Computer type (Pentium 4)Korean origin, like a mira video imaging with a velocity of 500 p / s type) Casio(Korean made, 3-type manual stopwatches(Kislo 610) Chinese origin, weighing device (of Korean origin), legal track for athletics, various tools (legal barriers, red and white flags, starting blocks, firing pistol).

Research procedures

Determining partial distances :from the principle cover every distance event, the researcher Wen identified five partial distances from the total distance for the purpose of study, limit d t Palate :

- The first partial distance: from the starting line to the first barrier.
- The second partial distance: the distance of three barriers (2, 3, 4).
- The third partial distance: the distance of three barriers (5, 6, 7).
- Fourth partial distance: the distance of three barriers (8, 9, 10).
- The fifth partial distance: from the tenth checkpoint until the finish line.

Determining the measurement of the search variables :The search variables will be measured through videotaping of an enemy achievement test (400m barriers), where the five partial distances will be measured, and the skill performance will be measured through the evaluation of three specialized experts and achievement

Characterization of the tests

Sprint test (400m hurdles)

The purpose of the test :measuring the five partial distances, measuring skill performance, measuring achievement

Exam requirements :a legal track for athletics, a camera (3), three experts to evaluate the performance, 6 timing hours, a trigger, a number of 6 timers, a recorder, a firing pistol, 6 start rests, special forms for recording measurements.

Description of the test :The test begins with each tester (runner) taking his place after hearing the word Take your place by the referee by sitting behind the starting line and according to the field set for him. The runner kneels on the knee of his hind leg so that the toes of this foot are placed along the heel of the front leg of the foot. {That is, the front and backrest are placed close to each other. When the divorced man hears the word “preparation”, the runner raises his hip high so that his height is slightly higher than the height of the shoulders and the knees are slightly bent, while the center of gravity of the runner is tilted slightly forward towards the arms, and the arms So they are straight and the elbows are locked, so the tester remains in this position until the permission to start (the launch gun) is heard, at which time the runner will start at the maximum possible speed.

Recording :The times are calculated for the five distances specified by videography, measuring the skill performance through the evaluation of three experts specialized in extracting the arithmetic mean of their scores, the achievement of a sprint distance (400 meters hurdles) to the nearest 1/100 part of a second.

Tribal tests :conducted researcher Wen tribal tests for members of the sample's (10 runners), so as to install the degree tests and to identify the level of runners, tests were conducted on (Saturday) corresponding to (15/2/2020) at time (3) pm on Stadium Walsh door sports in the holy city of Karbala, and conducted researcher Wen parity between the control and experimental groups using statistical parametric law (TL) Two independent samples with the results of measurements and pre-tests for variables (partial distance, first, second, third, fourth, and fifth, skill performance, achievement), and the results were confirmed by parity of the two groups, and the levels of significance were respectively (442, 386, 976, 884, 717, 740, 615) It is smaller than the level of significance) 05 Which indicates parity for the two research groups.

The main test :Exercises were prepared according to the target time for the equation of (Touchdown) Drawer t within the training program for the development of variables research w (under study) for the experimental group, was carried out at the stage of only special counter has not d of (10 weeks) and the start of the day (Saturday) corresponding to (22/2/2020) and the number of training modules (three training modules) per week and in the days (Saturday, Monday, Wednesday) and the total number of training modules (30 training units) ranged Azemanha between (30 d - 53 d) The researcher used Wen training mode pulsation high intensity and repetitive and it ended its application on Wednesday, corresponding to (29/4/2020).

Posteriori tests : After the completion of the implementation of the program vocabulary training conducted tests, the researchers posteriori the day (Monday) corresponding to (4/5/2020) for the two sets of research, and at the same time, place and steps tribal variables (under study) as much as possible.

Statistical methods :hired a researcher Wen statistical packages system spss Using statistical parameters the arithmetic mean, standard deviation, Levine test and (T) For symmetric and independent samples.

Results

This research included presenting, analyzing and discussing the results through collecting data, organizing them, classifying them in explanatory tables, and then processing them statistically to reach the final results to achieve the objectives and assumptions of the research.

1. Presenting and analyzing the results of the pre and posttests of the study variables for the control group

Table (1) Shows alos values i arithmetic mean, standard deviation and the mean differences and standard deviation of the differences and (T) Calculated and moral level and significance of statistics for hid Ra T.

tribal and dimensionality variables search for group control

Variables	T he pr et	P os t te et		P	P. P	Values Calculate	Level of	Indicatio n type	
	s	P	s						P
The first partial distance	6.0280	15849	5.9320	21324	09600	11,263	852	.442	Immoral

The second partial distance	13.1620	.30532	12.9540	.40470	20,800	21027	989	379	Immoral
The third partial distance	14.1440	47522	14.1360	33351	.00800	16972	0447	965	Immoral
The fourth partial distance	14.7460	34588	14.7080	.44690	03800	.19140	199	852	Immoral
The fifth partial distance	5.8800	29606	5.9500	29428	-.07000	22568	-.310	.772	Immoral
Skillful performance	6.5000	39528	6.7500	50,000	-.25000	07906	-3.162	.034	moral
XD	54.0000	.96954	53.6800	96540	.32000	08000	4.000	016	moral

2. Presentation and analysis of the results of the pre and post tests of the study variables for the experimental group

Table (2) shows the values of the mean, standard deviation, mean of variances, standard deviation of variances, and (T) Calculated and moral level of statistical significance of hid Ra T. tribal and dimensionality of research variables experimental group

Variables	The pretest		Post test		P	P. P	ValuesT Calculate d	Level of moral e	Indication typ e
	s	P	s	P					
The first partial distance	6.0280	15849	6.4820	10330	-.45400	05784	-7.849	.001	moral
The second partial distance	13.1620	.30532	12.1900	19092	97200	10744	9.047	.001	moral
The third partial distance	14.1440	47522	13.0680	20753	1.07600	13859	7.764	.001	moral
The fourth partial distance	14.7460	34588	14.3900	.22271	35600	06392	5.569	.005	moral
The fifth partial distance	5.8800	29606	5.7100	09301	17000	.14160	1.201	296	moral
Skillful performanc	6.4000	.51841	8.0500	48088	-1.6500	06124	-26.944	.000	moral

e					0				
XD	54.000	.9695	51.840	81731	2.1600	11662	18,522	.000	moral
	0	4	0		0				

Table (1) and (2) show the statistical indicators of the results of the pre and post tests for the research variables that members of the control and experimental groups underwent, as the results showed that there are significant differences between the two tests and in favor of the post tests for the variables of skill performance and achievement of the control group and for all variables for the experimental group and this is what Significance levels indicated by the use of statistical law (TFor the correlated samples, as they were less than the level of significance (0,05), which indicates the presence of significant differences between the two tests, as for the partial distance variables for the control group, no significant differences were found.

3. Discussing the results of the pre and post tests for the study variables for the control and experimental groups.

Through the presentation and analysis of the results obtained by the researcher yen in the table (1) for the control group it illustrated the absence of differences in moral variables partial distance first, second, third, fourth and fifth, attributed the researcher Wen reason for that not to handle the model and ideal for cutting these distances are compatible with the portability and the possibility of hostile Physicality, that is, the training process that the members of this group underwent did not take into account the process of cutting the partial distances under study by the ideal distribution of the effort exerted by the runners and in line with their digital level, as well as the emergence of the fatigue factor, which is a major obstacle to improving performance, As for the variable performance skills (technique barriers), the results that showed there are significant between the pre and posttests in favor of the dimensional differences, it attributed the researcher Wen reason for this development that continue the training process of sports by runners on a regular basis, and this training exercise included several exercises Skillful performance, i.e. barrier-crossing exercises, and the many repetitions of these exercises will certainly generate a process of improving the performance of overcoming barriers (physical performance) Larry), and this was confirmed by (Muhammad, 1984) to "The sports organizer training leads to increase the work of the functional and special appliances devices nervous and muscular, is shown directly in the muscle 's ability to produce power with increased speed of contraction and muscular watercourses decision, and this the whole is in the service performance skills of hostility ", either for variable achievement results that showed there were significant differences between the pre and post tests in favor of the post, and attribute researcher Wen this cause evolution to the emergence of a simple evolution did not live up to the moral in partial distances that were displayed in the table (1) Which represent the technical, physical and skill stages of the activity, and if these non-significant differences are collected, they have achieved a complete time that leads to a difference in the digital level of each runner and may rise to the moral and this is what happened to the achievement variable, in addition to the skill performance variable that The results showed that there are significant differences, and we are all aware that this variable has a significant positive effect on the process of improving achievement and this is what contributed to improving this variable, in addition to that, the continuation of the organized sports training process Will inevitably lead to the improvement of variables, including the achievement, and this is what he referred to (Adel, 2009) to "The group exercises or efforts physical

used in training units lead to the events of adaptations or functional change in the organs and members of the internal body to achieve a high level of sporting achievement level", this confirms the evolution of the group members of the control in the variables of performance skill my achievement, but for the experimental group was there significant between the two tests for all variables, differences, and these differences in favor of posteriori tests except variable first partial distance Vq d differences were tested tribal, If what we discussed in the variable the first distance from the starting line until the barrier first, the reason is mentioned in the discussion of the differences between the pre and posttests of the control group, a random and non - observance of rationing to suit the potential physical and functional hostile to this distance, either for variables partial distance second of the third, fourth, fifth and performance skill to pass barrier and achievement Viazzo researcher Wen reason so the appearance of differences to exercise prepared by the researcher, which was built on the s Ideally distances Ta and rationing according to the target time of B by equation (Touchdown), As well as continuous and continuous training by the runners and discipline to perform exercises properly took into account the researcher Wen in this exercise possibilities or individual capabilities of hostile both by the level of slavery May its (achievement), as well as the number of iterations and comfort idealism and diversity of distances from Luxor to the longest Which is of great importance and has a high specificity in training, and this is what (Al-Basati, 1998) confirmed that "training is a series of repetitions and periods of exercise between each iteration and the last intervals for rest and the intervals are extended according to the achievement of development." (Jamal, 2012) indicates that " Research has shown that the nervous-muscular system responds better when it is excited in a variable manner all the time, and the nervous - muscular system needs to be surprised in order to be forced by adaptation, and this means performing different consciousness of exercises for a few days and changing the number of repetitions, stresses and exercises from other days., and this is achieved in the training of the experimental group through exercises that prepared the training program.

4. Presentation and analysis of the post-test results of the study variables for the control and experimental groups and discussing them.

Table (3) shows the mean values, the standard deviation, and (T) Calculated and moral level of statistical significance of hid Ra v dimensionality of research variables control and experimental groups

Variables	the group	s	P	ValuesT Calculated	Level of morale	Indication type
The first partial distance	Control	5.8100	.16733	-7.641	.000	moral
	Experimental	6.4820	10330			
The second partial distance	Control	12.7220	.30687	3.291	011	moral
	Experimental	12.1900	19092			
The third partial distance	Control	13.8900	.25593	5.578	.001	moral
	Experimental	13.0680	20753			
The fourth partial distance	Control	14.9720	32851	3.279	011	moral
	Experimental	14.3900	.22271			

The fifth partial distance	Control	6.0060	14011	3.936	004	moral
	Experimental	5.7100	09301			
Skillful performance	Control	6.7500	50,000	-4.190	003	moral
	Experimental	8.0500	48088			
XD	Control	53.4000	98234	2.730	026	moral
	Experimental	51.8400	81731			

Table (3) shows the statistical indicators of the results of the post-tests between the control and experimental groups for the research variables, as the results showed the presence of significant differences between the two groups and in favor of the experimental group, and this is what the levels of significance indicated through the use of the statistical law (T) For the independent samples, as all the variables had less than the level of significance (0,05), which indicates the existence of significant differences between the two groups, except for the first partial distance variable, so the preference for the control group was.

Discussion

Through the presentation and analysis of the results obtained by the researcher it is clear there are significant differences between the two sets of search results posteriori tests for the variables under study for the benefit of the experimental group attribute researcher Wen this reason preference to exercise the stomach according to the target time of B by equation (Touchdown(In the training program that was prepared in a standardized manner and according to the completion of each runner, taking into account the components of the athletic training load, the nature of performing these standardized exercises according to the target time is according to the formula)TouchdownIt enabled the runners to cut the partial distances studied in this research in line with the physical potential and ability of the runners and their digital achievements for this competition, and if we know that the event (400 hurdles) is one of the difficult activities in its special requirements in terms of high physical effort that requires the runner to possess a capacity great strength and endurance and not lose speed along the race distance as well as performance skills and the requisite agility and flexibility of him to pass barriers ideally, these exercises that sector d t within the training program for aggressive given them these gains, and their advantage the ideal distribution of physical effort of each runner to cut The distance between the hurdles, which enabled them to cover the total distance at a single pace for the entire race distance, and this was confirmed by (**Raysan, 2002**) that "the 400m / h race is one of the most enjoyable track races, but it is difficult to perform, which combines running speed and conservatism. On the average speed during the race stages, including the technical performance to overcome the barrier and maintain the balance, which requires a high degree of compatibility, flexibility, agility, strength, endurance, and the absence of loss of power Godly moment exceeded the barrier which is difficult for the rider to compensate in addition to the special rhythm Palmtsabakan during the stages of a different race ", this Altmarena T was awarded a too aggressive high degree of nervous compatibility muscular and maintain this compatibility along the total distance, and this helped to keep the amounts high of the power produced by the runners and their performance at high speeds over the total distance, and this has contributed to maintaining the step length and frequency when the distance between the barriers and the distance from the barrier X until the finish line, and this is what he referred to (**Qasim, 2000**), " Hurdle runners have special requirements such as ability and speed, which are

two basic characteristics of obstacle runners, increased flexibility in the pelvic joint, the ability to pass the barrier with both feet, neuromuscular compatibility, the ability to balance in overcoming obstacles, a good sense of steps and the ability to distribute effort along the race distance and finally confidence. With self, perseverance and ambition to win, he adds that the exerted physical effort will bring about functional changes, which include neuromuscular adaptation to the working muscles and arrange. The possibility of improving the rate of speed during the actual racing distance, " The application of high amounts of force on the ground and its bounce at high speeds and the maintenance of this application greatly and effectively contributed to providing the enemy runners with a number of equal steps between the hurdles, whether at the beginning of the distance (the first hurdles) Or the end of the distance (the last hurdles) and this means cutting the distances between the hurdles at roughly equal times and this is evidence of the ideal distribution of the exerted effort and the good ability to maintain the high speeds that runners gained at the start of the race, and this is what led to the treatment of improving the defect mentioned in the research problem, which is Reducing the time lag between the achievement of the activity of (400 meters free and barriers) for the runners, and this is what the exercises that were applied to the experimental group, which were the cause of the emergence of the moral differences, or for the first partial distance variable were the differences for the control group, and the reason for that is due to what was mentioned in the discussion of differences between the tests kisses me and dimensionality, a random and non - observance of rationing to suit the potential physical and Aloziv Yeh to hostile to this distance, Wei Ri researcher Wen said these exercises that have been prepared under the training of the aggressive program that enabled them from the enemy from the starting line until the first barrier and the enemy between the barriers and the enemy of the last barrier to the finish line Bozman fit s Darathm physical and functional and enabled charges of performance skills to pass the barriers perfectly, to continue. In the process of training in this manner and the many repetitions of these exercises, the runners have gained adaptations to this performance and these times, and therefore working in competition or training on a single pace to cut these distances will generate an ideal distribution of physical effort and this works to not show signs of fatigue early and to maintain the length and frequency of steps to cut distances. Between the barriers and the lack of hesitation before passing the checkpoints, and this is what achieved the moral differences between it and the control group, which was in its favor.

Results

- The exercise prepared by the researcher Wen had a significant impact in improving traffic, a t partial between the barriers, which were almost on one pace and contributed to the improved performance skills to pass the barriers and the completion of the effectiveness of the enemy 400 meter hurdles.
- The exercise prepared by the researcher Wen contributed to the Acquisition Alaada #NAME work according Amkanya charges of physical and digital level for them as well as the distribution of the ideal physical effort enshrined were judged, whether in competition or training.

Recommendations

- The researcher recommends Wen trainers based on exercises prepared in accordance with the target time, according to the equation (TouchdownTo cut the distances between the barriers in the 400m hurdles competition.
- Recommends researcher Wen study the preparation of exercises prepared in accordance with the target time for other competitions for different age groups.
- The need to pay attention to the skillful performance of the 400-meter hurdles competition because of its impact on athletic achievement .

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