

Special exercises by a training device and its impact on some bio-mechanical variables And on ran the 400m Hurdles under 20 Years' old

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Abstract

The nature of the conditions of the body through the outdistancing greatly affect the time pass each hurdles that comes through the training objectives through continuous training and use of the latest ways and means and the introduction of modern equipment and tools as a means of modern training assistance to develop the player, one of these devices is the use of interference in the training process, directly during the performance and lasers, which gives an indication of the path of the activist body during penetration for which gives a direct indicator of the rise of the center of gravity of the body over the barrier and the interrelation of these variables with the status of the body from the corners of 2012 during penetration as well as the time passed and affect the mechanical variables of the distance between the hurdles. So the use of the given is an indication of the values of some variables of distances between the hurdles are considered complementary to the laser devices used over the hurdles. Use of these devices to facilitate the task of training, as well as contributing to the identification of the strengths and weaknesses in performance for falling on the real problem that hinders the progress of players level and, in particular, in the events of the high speed technique, high-consensus which must be made according to certain dynamic routes based on bio-mechanics is correct, since the use of such tools and equipment will contribute to raising the level of the player in order to achieve the best. So hardware are very important in giving direct indicators on the status of the mechanically player during cross the hurdle. Since the arc in the barriers in the rank has its own privacy in performance and knowledge of the values of the variables of the distance between the first and second hurdles of the time and speed affect the mechanical variables of the time step outdistancing outdistancing and instant messaging efforts to push before passing in turn affect the time of completion of the kidney, where the researchers found a test of achievement of the laser device and cameras to find bio-mechanical physical variables, where the results of the development of each of the variables made a step with the variables of the distance between the two hurdles that already at the time of the total delivery.

Keywords: Special exercises, training device, bio-mechanical variables, 400m Hurdles.

Introduction

Ran speed barriers requires continuous exchange between the step of crossing the barrier performance, high speed and interdependence and true to this step with the stage, followed by the usual jogging steps without affecting the speed

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performance with or without a decrease in speed, This performance is affected by means of modern technical training or special exercises accurately and direct help to improve the technical performance of each of the leading man and man coverage step that could influence the physical abilities through exercises aimed at the development of muscular strength and thus affect the possibilities of hostility in passing mechanics. *(Sareeh, 2010)* It leads the physical abilities of speed and force plays a crucial role in achieving remarkable achievement in the races ran the barriers, especially ran 400 m hurdles required by performance in this contest of integration in the building Physical and psychological hostility to work "Preceding" mean? In order to maintain the ideal ratio of the length of the hesitation step in the distances between the hurdles and along the stages of this race, as well as the proportionality of these steps with the step of the hurdle, which must be performed in line with the rest of the steps, including believes not diminished speed or increase the length of the steps more than natural, as well as the length of the hesitation step workers affected by a factor of fatigue with continued effort within the race distance, especially in the last stages of it if we know that the 400m hurdles is a short races - a relatively long-term, which requires the athlete should make the maximum speed on the long distance work despite the inevitably fatigue that accompanied the progress of the distance which effect negatively on all of length Step impulses, which negatively affects the rate of speed and then in the achievement. *(Haneen, 2014)* Therefore, the nature of the conditions of the body through the outdistancing greatly affect the time pass each barrier that comes through the training objectives through continuous training and use of the latest ways and means and the introduction of modern equipment and tools as a means of modern training assistance to develop the player, one of these devices is the use of interference in the training process, directly during the performance and lasers, which gives an indication of the path of the activist body during penetration for which gives a direct indicator of the rise of the center of gravity of the body over the hurdle and the interrelation of these variables with the status of the body from the corners of 2012 during penetration as well as the time passed and affect the mechanical variables of the distance between the hurdles. *(Haneen, 2014)*, so the use of give an indication of the values of some variables of distances between the hurdles are considered complementary to the laser devices used over the hurdle. Use of these devices to facilitate the task of training, as well as contributing to the identification of the strengths and weaknesses in performance for falling on the real problem that hinders the progress of players level and, in particular, in the events of the high speed technique, high-consensus which must be made according to certain dynamic routes based on bio-mechanics is correct, since the use of such tools and equipment will contribute to raising the level of the player in order to achieve the best. So hardware are very important in giving direct indicators on the status of the mechanically player during cross the hurdle. The training in accordance with the correct scientific bases are supposed to be followed by all the trainers, especially trainers for athletics, this training work may be limited influence in the progress level did not invent the modern methods and theories based on other sciences in the development and improvement of various physical abilities related to developing sporting achievements, especially in athletics, including the 400 meters hurdles .and see hanin kassem *(Haneen, 2014)* focus on what is owned by the hostility of the autonomous region and reflected in the ability of these forces in the delivery of distance ran continues to be closer to its capacity owned by. On contrary *(Sareeh, 2010)* depends on the Law of the capacity, the mechanical theory has nothing to do with the kinetic energy of the distance training courses completed the chairman and The internal force to achieve the best achievement in these distances .

Methodology

The experimental approach was used per sample design of tribal test sample was selected research conference of the elite players with converged in effective levels of 400 m hurdles without 20 years of 2019 numbered (6) players from out of (7) players, and they represent (86%) of the originally selected society intentional manner.

The training apparatus to determine the speed and time variables and accelerate the distances between the hurdles (*Intisar, 2019*)

Search Tests

1- **Running two barriers in the first arc:** the barriers on the way up (91cm) just the first arc (45 m) from the beginning line and the distance between the first and second hurdle (35 m) line and the end of the test (20 m) of the second arc existence device on the first and second hurdles and the presence of cameras (1) on the first hurdle and camera (2) on the second hurdle and after (5m) and at altitudes (1m) and perpendicular to the two hurdles so that the last step before the barrier the first step after the barrier is fully does the player sitting after the launch signal starts the player is passing the first hurdle and then II ends with time yesterday the lead man of the Earth.

2- The test of achievement ran 400m hurdles.

Calculate the bio-mechanical variables barrier 2-1:

1- Variables of the time between the first and second hurdle speed of the device.

2- variables of the time of the first and second passing hurdle force instant messaging before the penetration of the hurdle of the first and second video photography to two cameras referring kinesthetic Analysis Program (kinovea)

The test was conducted and tribal on Thursday at 10 a.m. golf athletics Ministry of Youth and Sports has been the application of training modules on (2/2/2019) and ended on (1/4/2019) the application of (4) training modules during the week for (8) weeks reality (32) training units and within days (Saturday, Monday, Wednesday, and Thursday) in the preparation period and confirms Abul-ela, "Most of the changes resulting from the training usually occurs within 6-8 weeks" (*Abul-Ela, 1996*) , was a time of each module (15-20) minutes since the sections of the module is the main and final preparatory section researcher intervened to part of the main section during the training unit of the sample were carried out during the training period using the iterative method of training. The training curriculum for the sample private effectively 400m hurdles for youth according to special exercises and training proposed and used to develop a variety of physical capabilities of the player performance commensurate with the capabilities of the research sample, where the time between the first barrier and the second hurdle players incentive to increase the speed between the two hurdles for the purpose of reducing the time distance between the two hurdles in each repetition of know the result after each repetition was set aside for players and exciting element has been the dimensional test on the date of 3/4/2019 with the same tribal test conditions. The use of SPSS was statistical package.

Results

1- results of the variables of the first and second barrier

Table (1)

Calculation shows the standard deviations of the first and second barrier variables

variables	Tribal Test		Dimensional Test	
	Q	+_p	Q	+_p
first hurdle force instant messaging/Net	1176.3573	3.9167	1196.9246	3.2689

time of the first passing hurdle (tha)	0.9766	0.0042	0.9233	0.0055
Instant force hurdle ii (net)	1191.9246	3.6841	1215.7080	7.7731
time ii passing hurdle (tha)	0.9250	0.0056	0.8850	0.0067

Table (2)

Demonstrate the value of the differences and value of t calculated real significant and the first and second barrier variables

variables	P	P e	T calculated	Sig	Significance
first hurdle force instant messaging (net)	20.5673	2.2390	9.186	0.000	significant
time of the first passing hurdle (tha)	0.05333	0.0066	8,000	0.000	significant
Instant force hurdle ii (net)	23.7833	4.6647	5.098	0.004	significant
time ii passing hurdle (tha)	0.0400	0.0036	10.954	0.000	significant

2- results of the variables of the distance between the second and first barriers achievement

Table (3)

The calculation shows the standard deviations of the distance between the first and second barriers

variables	Tribal Test		Dimensional Test	
	Q	+_p	Q	+_p
Time (tha)	4.4833	0.1038	4.4250	0.0821
Speed m /tha	8.2933	0.2175	8.7783	0.1462

Table (4)

Demonstrate the value of the differences and value of t calculated and significant variables real distance between the first and second barrier

variables	P	P e	T calculated	Sig	Significance
Time (tha)	0.05833	0.01249	4.669	0.005	Significant
Speed m /tha	0.48500	0.08102	5.986	0.002	Significant

3- results of the physical test and achievement

Table (5)

The calculation shows the standard deviations of physical testing and achievement

variables	Tribal Test		Dimensional Test	
	Q	+_p	Q	+_p
Two hurdles in the arc I ran (tha)	10.0265	0.2195	10.198	0.2039
achievement (tha)	52.086	0.5113	51.955	0.4916

The agenda (6)

Demonstrate the value of the differences and value of t calculated real significant and physical testing and achievement

variables	P	P e	T calculated	Sig	Significance
Two hurdles in the arc I ran/tha	0.06667	0.0117	5.680	0.002	Significant

Achievement/tha	0.13167	0.0174	0.567	0.001	Significant
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Conclusions

Note that there is a moral difference in force or suggestions for changing the dimensional test, that change came as a result of the exercise given the players and the changing conditions of the body which he added the proposed device on their performance, since the fall of the High center of gravity of the body over the hurdle and high center of gravity of the body before and after the barrier has led to an increase in the force generated as a result of increased horizontal force vehicle during penetration there is no doubt that the force in these movements is divided into vertical and horizontal vehicles and the increase here was, on the one hand, horizontal mounted at the expense of the slight decrease in the vehicle and helicopter, as well as the researchers attribute the emergence of moral differences in results of bio-mechanics bound variables on the first and second time and distance traveled between the first and second hurdles and speed to effectively exercise used scientifically associated with control lengths. Hesitation steps especially that running between both hurdles on the curve is the first of the 400m hurdles race this section similar mechanical objective The objective of the 200m and 400m freestyle but the main difference appears in the Arts (technique) jogging of the relative increase of the length of the steps in the effectiveness ran (400m hurdles) in order to achieve mobility and advancement of passing inaccuracy moment the hurdle without a decrease in speed and privacy in an attempt to reach the maximum speed at the end of the first quarter of the race distance and then maintain this speed as much as possible for as long as is possible, this corresponds to the terms of the jogging in the curve in the activity ran (200 and 400meters (*Qutaiba, 2012*) The reason why this development tools that have been used especially in payment exercises and resistance inflicted The Player before the barrier to the use of private means of assistance in exercises performance wrist strap legs are of importance in the development of pay momentarily before the barrier and the mechanism for its investment to serve the most important step is to gather the technical performance (*Sareeh, 2017*) and the increased presence of laser devices defenses during lab imposes on the player according to this performance, prompting the player to increase the efficiency and performance through the show greater force during the upgrade and passing according to the desired height by the device, which affects the time passed and the conditions of the body affects the distance between bio-mechanical variables hurdles. Therefore, the change of force levels at the moment of upgrading is the main cause of changing the status of the body and the quantity of the movement and momentum through the good performance of the compatible with the correct angles and conditions of the body, so the defenses momentary force training for the integration of the performance pay moment outdistancing produced by muscle aggregates during the performance in an attempt to give the body the amount of movement or momentum of the ideal player can push his body front quickly and try to keep the high amount of momentum and augmented in the steps that followed and coherence of the movement and the conditions of the body during this stage. As well as the note of moral differences in favor of the dimensional test through the emergence of a significant improvement in the difference between the median variant values time of crossing the barrier between tribal tests as a result of the application of the special conference exercises with the help of the proposed device, which helped players to adjust the distance between the center of gravity of their target (a point of the hip) and gate to fit and achieving the ideal, which is the least hinder the time possible and this is what appeared when calculating the median values for a variable time of crossing the barrier of tribal conference through exams has passed the figures that emerged from the analysis of the performance of these changes activist have led to improved performance, especially that the effectiveness of the hurdles is essentially dependent on the distances the least time possible and to reduce the time required to pass the barrier is certainly an indicator of improvement in the performance of the player and thus improve digital level achieved, in order to access the

speed at the moment the player must traverse the good organization and the best timing for a man raise us properly, according to the activist route to reach the time of the perfect the enemy of barriers (*Qassem, 2000*) and the application of all the characteristics of time during the movement without stopping and without any sharp breaks in the kinetic routes blocks centers parts of the body and the body itself, so that the special training that help in the development of the work of the muscles working in the run lead to improved the speed of their steps and thus speed including at least 0.6 seconds or more (*Dintman, 1998*) therefore logical to develop a time hurdle step, especially when the use of ropes and rubber bullets as the repetition of the jogging exercises and passing the existence of the sling resistances enhance the time duration of the contraction, the muscle contraction as soon as possible The real course of the movement can be Chinese-uzbek gives high and this limits the time of performance when outdistancing (*Taleb, 2003*). Here, I mean, that enmity toward working in this stage to achieve the positive acceleration known increasing speed (positive) after the departure during the first arc of the race distance through the increase in the frequency and length of the step down to the point of entry of the maximum speed which vary in length from the hostility to time. This is a funeral emphasized the training of members of the sample and improved technical levels that have been associated with the development of the indicators and their bio-mechanical. It could be access to accelerate good as what has been run properly by adjusting the first and second steps and punish the movement of arms and further the efforts of the hostility of the strength and speed of muscle contractions frequency depends to accelerate the amount of force produced by the player from the muscle contraction (*Sareeh, 2010*) and the amount of acceleration in the race (400 meters hurdles) depends on the length of the first steps of the method of its performance in terms of length, the length of the hesitation step the upper limit of the speed of running after cutting (50-55 meters) (*Awais, 2000*)

This means that there is a development in the speed of the sample Search This is consistent with his recollection Mohammad Reza Ibrahim (the development of running speed hurdles is one of the most important elements that must be given special attention by the trainers of the hurdles) (*Mohamed, 1992*), as well as confirms Khairat, Ibrahim (that the use of appropriate training is more effective in achieving the objective Training Program (*Khairat, 1996*)).

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