

THE EFFECT OF THE BIOMECHANICAL ANALYSIS TO INCREASE SPEED ACCORDANCE WITH THE CENTRIFUGAL FORCE OF THE DIFFERENT AREAS OF THE COMPLETION OF THE ENEMY OF THE 200M CURVE

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Abstract

Researcher noted that most of the players are ignoring the increasing speed according to the centrifugal force of the different areas of the curve because of the lack of values that are available are abridged in one area knowing that the radii vary depending on the areas resulting in the intensity of inclination of the curve, which vary from area to another, which is affected by the value of the centrifugal force which obliges the player to change body position mechanically (Milan) to remove the effect of centrifugal force, so sought researcher to provide information about those values and thus contribute even a little to improve the level of achievement for any field of study aimed to identify the biomechanical of the increasing speed values of the variables according to centrifugal force at the different areas curve 200 meters as well as the effect of biomechanical variables to the increasing speed and power repellant when the different areas 200 curve Mitrokd values researcher used descriptive manner relational relations and comparison to solve the problem purely as researcher identified the research community who are the players in the team Qadisiyah University of the effectiveness of 200 m for the academic year 2014 who got the best achievements totaling (4) players, has been trying to give each player on each field (8,6,4,2) according to different areas ran 200 m curve for all members of the sample so that the total number of attempts (16) attempt, was to identify some of the variables that represent the sample and the sample specifications normally distributed the study found there is a direct effect of the increasing speed of the variables in the maximum impact of the centrifugal force in the stage ran the effectiveness of the 200-meter curve.

There fluctuation in speed between increases and decreases in the areas identified by the researcher for each stage of the maximum effect of centrifugal force that ran the curve for all runners.

KEYWORDS: Biomechanical analysis. Increasing speed. Centrifugal force. The enemy of 200 m.

1. INTRODUCTION

The science of biomechanics of modern science that influenced the scientific progress of the human motor performance, which specialized sports movement and motor performance, which has had a significant impact on the progress of modern indices.

The Games track and field of the most important sports which translates reflect an objective manner the progress of nations as characterized by objectively evaluating human achievement as achievements translate into digital levels represented Bozmna and distances through the mechanical properties, and to achieve it is not only through physical and skill training, but the development of motor abilities and developed for Using biomechanical analysis of these events effectiveness ran the (200 m) that have privacy because the sports in which the first section runs in the form of a curve and the other half on a straight shape and the variables that occur during the running of the curve on the body of hostility play a major role in the achievement through the mechanical status of the body hostility during ran the curve where the areas of sprinting vary as a result of differing radii areas which result in mechanical effects affect the hostility different areas.

The importance of research to identify the biomechanical effect of the increasing speed values of the variables according to the centrifugal force affected in different areas ran arch enemy of the effectiveness of the curve of 200 m.

Research problem:

The goal of the basic hostility to obtain transition speed better while this speed is affected curvature curve and this curvature varies from area to another depending on the radii areas, the researcher after studying the previous literature sources and references (letters and theses) as well as conducting personal interviews to specialists noted researcher that most of the players are ignoring the increasing speed according to the centrifugal force of the different areas of the curve because of the lack of values that are available are abridged in one area knowing that the radii vary depending on the areas resulting in the intensity of inclination of the curve, which vary from area to another, which is affected by the value of the centrifugal force, which obliges the player to change body position mechanically (Milan) to remove the effect of centrifugal force, so the researcher sought to provide information about those values and thus to contribute even a little to improve the level of achievement in any field.

Research Aim:

1. Biomechanical of the increasing speed values of the variables according to the centrifugal force at the different areas of 200 meters curve.
2. Following biomechanical variables to the increasing speed and centrifugal force at the different areas of 200 meters curve values.

2. MATERIAL AND METHODS

The researcher used descriptive manner relational relations and comparison to solve the problem purely.

Society and the research sample

Researcher select community purely illusion players elected Qadisiyah University of the effectiveness of 200 m for the academic year 2014 who got the best achievements totaling (4) players, was given a bid for each player on each field (8,6,4,2) according to different areas ran curve of 200 m for all members of the sample so that the total number of attempts (16) attempt, was to identify some of the variables that represent the sample specifications and the sample is normally distributed.

Table 1: represents specifications research sample

Variables	unit of measurement	Average	S.D	Mediator	Torsion modulus
The length of the trunk	Cm	63.03	4.312	62	-0.27
The length of a man	Cm	105.32	7.53	103	-0.53
Bloc	K gm	73.28	3.52	71	0.42
Overall length	Cm	186.75	11.47	184	-0.31
Age training	Year	4.5	0.96	4	0.43
Chronological age	Year	22.64	2.71	21	0.68
XD	seonde	23.53	3.42	22.25	0.72

The run test (200m) completion (Baydaa Razak Jawad,2007)

Main experience:

The researcher conducting the experiment on the main (10/04/2014), by installing cameras where each player was given one attempt at each of the four areas of sites, namely, (2,4,6,8), was calculated completion of 200 full time and ran a time curve.

3. RESULTS AND DISCUSSION

Showing results bio mechanical variables affecting the increasing speed values by area ran curve of 200 m and achievement and analysis and discussion

Table 2: shows the computational community values and standard deviations for the variables biomechanical for increasing speed according to the centrifugal force.

Areas ran effectiveness of 200 m								Biomech anical variables	t	Perform ance stages
Field (2)		Field (4)		Field (6)		Field (8)				
average	S.D	Average	S.D	average	S.D	average	S.D			
187.43	0.290	2.08	2.539	203.09	0.147	200.75	0.0722	Average stride length (m / number(1	Increasing speed
4.314	0.3556	4.32	0.411	4.523	0.325	4.414	0.3380	Step frequency rate (number / s(2	
135.28	8.887	128.75	9.781	129.18	5.626	131.2	13.186	Detailed hip angle for maximum impact moment (degrees(3	
48.74	8.866	47.9375	7.701	50.187	9.022	47.5	10.080	The maximum extension of the shoulder joint right moment maximum impact (degrees(4	
0.27	0.0144	0.18	0.0111	0.165	0.006	0.146	0.0078	Under the angle of inclination (degrees) for maximum impact moment	5	
122.34	10.627	116.95	8.239	113.46	12.39	105.36	16.135	Centrifugal force (Net) the moment of maximum impact	6	
14.47	3.112	11.625	5.492	10.04	2.031	7.25	1.25	Milan player angle (degrees) for maximum impact moment	7	
0.28	0.337	0.122	0.0107	0.131	0.014	0.1658	0.0083	Flight time for the moment of maximum impact (s(8	
12.54	0.398	12.395	0.804	12.088	0.324	12.182	0.7019	Curve distance time (seconds(9	Ran the curve
8.27	0.273	8.053	0.227	8.0127	0.247	7.940	0.228	Sinusoidal speed (m / s(10	
23.47	0.7095	24.27	0.681	23.25	0.798	23.21	0.7377	Achievement (Tha(11	

The player take mechanic put different to reduce the effect of centrifugal force and noted that the kinetic term point of hip larger than the kinetic term point of the shoulder or drafted again that the point is driven hip point is greater than the distance driven by the shoulder point and be appropriate to achieve the required speed and hip represents a center of a circle going around joints of the body, which makes us expect that the path to the circumference of the circle will be small and coincides with the event had a significant transition in the shoulder path, and ranged values under the angle of inclination due to increased player of the amounts of speed because the speed is proportional to the light angle of inclination and inversely proportional to the radius of the sphere and to accelerate the player played down from the corner to maintain the speed, the centrifugal force different values between the field

and the last was the biggest force the expulsion of sustained hostility in the second field, followed by other areas and then took a centrifugal force to rise to up to a maximum in the second domain, and then gradually decreased in other areas, which confirms that the runner has the ability the synergy because (because whenever the radius of the Palace area leads to an increase in the attractive force or centrifugal) (Hussein Mardan Omar 0.100: 2011), and the highest value for the angle Milan player in the second field and why the smaller radius increased the influence of the force repellents on the player who shall player to take a mechanic put appropriate, a tilt of the inside to maintain the speed and achieve the feat, we find that the forces acting on the body movement during a straight movement are almost parallel to compare the influence of external forces continually on track ring he must strike a balance between action strength (of centrifugal force) reaction (of degree inclination), and the best speed of a runner on the curve and different reason that these areas is under the influence of centrifugal force and thus the player resist this force rods inside are considerably less so the amounts of distance and time that are necessary to maintain the speed as the speed is an important factor of trying to factors limiting the hands of the main level in racing various athletics, especially the effectiveness of 200 m, which have significant relationship with the power that be at the first two forms issued by the body and the second external force (centrifugal force) in running the curve depends produce the first force that depends on the speed and strength of contraction and is characterized by the rapid run two special characteristics Mechanicals main stride length and frequency and is associated with many of the mechanical conditions to perform a step flight time and frequency steps.

Table 3: present the results of the differences in the biomechanical variables to the areas of effectiveness ran the 200-meter curve values

t	Variables	Source of variation	Sum of squares	Degree of freedom	Average squares	f	Sig
1	Average length of step	Among the areas	141.02	3	47.008	7.079	.000
		Within areas	398.423	60	6.640		
		Total	539.447	63			
2	Step frequency rate	Among the areas	0.448	3	0.149	1.175	0.334
		Within areas	7.747	60	0.129		
		Total	8.196	63			
3	Detailed angle hip moment maximum impact	Among the areas	517.422	3	172.474	1.701	0.176
		Within areas	6083.188	60	101.386		
		Total	6600.609	63			
4	The maximum extension of the shoulder joint right moment maximum impact	Among the areas	113.547	3	37.849	.442	0.724
		Within areas	5135.313	60	85.589		
		Total	5248.859	63			
5	Under the angle of inclination of the moment the maximum impact	Among the areas	.011	3	.004	29.767	.000
		Within areas	.008	60	.000		
		Total	.019	63			
6	Orbital inclination player the moment the maximum impact	Among the areas	730.400	3	243.467	20.045	.000
		Within areas	728.763	60	12.146		
		Total	1459.164	63			
7	Step away for a moment the maximum impact	Among the areas	4326.925	3	1442.30	.606	.614
		Within areas	142769.9	60	2379.49		
		Total	147096.8	63			
8	Centrifugal force moment maximum impact	Among the areas	1661.851	3	553.950	3.494	.021
		Within areas	9511.237	60	158.521		
		Total	11173.08	63			
9	Curve distance time	Among the areas	3.220	3	1.073	2.867	.044
		Within areas	22.463	60	.374		
		Total	25.684	63			
10	Flight time for the moment of maximum impact	Among the areas	.326	3	.109	3.553	.020
		Within areas	1.834	60	.031		
		Total	2.160	63			
11	Speed sinusoidal	Among the areas	.114	3	.038	.595	.621
		Within areas	3.846	60	.064		
		Total	3.960	63			
12		Among the areas	8.374	3	2.791	5.813	.001
		Within areas	28.813	60	.480		
		Total	37.187	63			

Notes that the frequency steps rate in those areas was a random value attributable researcher so that the technique of performance of a runner in the first three fields begin the gradual increase in stride length and frequency to reach the regular maximum speed in which the length and frequency step almost invariably either increase the step frequency in the area rate the

second because of the effect of centrifugal force which leads to decision-player mode mechanic has led to increased step frequency rate and thus reduce the speed, either hip angle in the fields is random and researcher attributes this to the approximate symmetry in aviation, building and the gradual increase in the length and frequency step time either lack of detailed angle hip in the first field, because the angle made by a man hostility were not optimal because of the mechanical status of the player who influenced him centrifugal force and continuous training on this area and confirms (Qassim Hassan and faith Shaker) that (the movement of the two men spoke in front level, as well as the arms that prevent hip and rotation next leg movement must be accompanied bend the knee, (to shorten the length of the resistance arm, which means the economy in voltage) (Qassim Hassan Hussein Wyman Shaker 2000 (100-96, hostility kept symmetric at a rate of speed in all areas either collecting speed in the fourth area was due to the mechanical status of the player, which led to a lack of length and step frequency, one of the main factors affecting the speed.

LSD moral differences in the variables bio mechanical fields ran the effectiveness of the 200-meter and analyzed and discussed the curve values:

Table 4: differences in moral LSD biomechanical variables to the areas of effectiveness ran the 200-meter curve values

t	Variables	fields		Averages	Averages teams	The standard error	Significance
1	Average length of step	1	3	1.7925-2.71464	-.92215-	.91107	.000
		1	5	1.7925 -2.03096	-.23846-	.91107	.794
		1	7	1.7925 -2.00753	-.21504-	.91107	.814
		3	5	2.71464 -2.0309	.68368	.91107	.001
		3	7	2.71464 -2.0075	.70711	.91107	.000
		5	7	2.0309 -2.00753	.02343	.91107	.980
2	Under the angle of inclination of the moment the maximum impact	1	3	0.176875 -0.18	-.00313-	.00396	.433
		1	5	0.17687 -0.1656	.01125*	.00396	.006
		1	7	0.1768 -0.14625	.03062*	.00396	.000
		3	5	0.18 -0.16562	.01438*	.00396	.001
		3	7	0.18 -0.14625	.03375*	.00396	.000
		5	7	0.1656 -0.14625	-.01938-	.00396	.000
3	Orbital inclination 4player the moment the maximum impact	1	7	15.75 -7.99375	7.75625*	.77962	.000
		1	3	15.75 -9	6.75000*	.77962	.000
		1	7	15.75 -7.25	8.50000*	.77962	.000
		3	5	7.99375 -9	-1.00625-	.77962	.001
		3	7	7.99375 -7.25	0.74375	.77962	.000
		5	7	9 -7.25	1.75000	.77962	.028
4	Centrifugal force moment maximum impact	1	3	116.95 -118.579	1.62122	4.45141	.717
		1	5	116.95 -113.465	5.11356	4.45141	.255
		1	7	116.95 -105.367	13.21203*	4.45141	.004
		3	5	118.57 -113.465	-3.49233-	4.45141	.436
		3	7	118.57 -105.367	11.59080	4.45141	.012
		5	7	113.465 -105.36	-8.09847-	4.45141	.074
5	Curve distance time	1	3	12.6721 -12.395	.27699	.21633	.205
		1	5	12.088 -2.67217	.58348*	.21633	.009
		1	7	-12.6721 12.182	.48976*	.21633	.027
		3	5	12.395 -12.0886	.30649	.21633	.162
		3	7	12.395 -12.1824	.21278	.21633	.329
		5	7	12.088 -12.1824	-.09372-	.21633	.666
6	Flight time for the moment of maximum impact	1	3	0.3004 -0.12243	.17800*	.06182	.006
		1	5	0.3004 -0.13156	.16888*	.06182	.008
		1	7	0.3004 -0.16581	.13463*	.06182	.033
		3	5	0.12243 -0.1315	-.00912-	.06182	.883
		3	7	0.12243 -0.1658	-.04337-	.06182	.486
		5	7	0.1315 -0.16581	-.03425-	.06182	.582

Differences between light inclination angle in the fields is a moral attribute researcher these differences to the effect of centrifugal force and the different radii areas and if we know that the inverse relationship between centrifugal and radius of force where the greater half of the diameter of the area say the effect of centrifugal force on the player so you must know the inclination angle must be athletic body lay in order to avoid the effect of centrifugal force, either the highest moral value of the difference between the angle Milan player in the fields attribute the researcher this difference that the centrifugal force affected areas at different rates Animosity is heading with the centrifugal force, which calls for the body's need to modes first take put biomechanical suitable for angle Milan to the inside to overcome the effect of centrifugal force and the second to reduce speed who shall player to take the

first situation is the inclination of the inside and firmly bloc able to maintain the speed, either differences in the areas of strength repellents are moral attributes researcher that the different stages of the enemy of the curve as the runner moves the speed of incremental to top speed and because the speed of basic terms in the equation of power repellent, so the reason for the change centrifugal force values be due to a change in the radius of the curve speed meaning that centrifugal force values differed differences calculation between distance and other researcher believes that the weak capacity of hostility in the gradient in speed due to poor ability to issue appropriate force and distribution amounts (distribution of intensity) at various distances of the curve, and through the width of the table data (4) and analysis show that the differences in the time values reached by the hostility is a moral reason for this surge in speed rate hostility that reached out to the maximum impact of the stronger centrifugal stage, in which times are equally cut distances, which could be up to accelerate them to zero and depends on the ability of hostility and its ability to carry speed and said the effect of centrifugal force him and after the radius of the sphere in the curve so the hostility time remains identical, the differences between the flight step time is a moral reason for this is that the flight time step is influenced by the speed and distance of the curve as well as after the radius of these areas led to you said the impact of expelling them power and thus Say airline step time and attribute the researcher the reason for this change to the near radius area in the curve leading to be the effect of centrifugal force on the big player because the relationship reverse them, which led to an increase in the flight step time, either the differences between achievement is moral and came as best achievement and this shows that the achievement of value is the one type of change because after half Qatar field on the curve leading to the lack of effect of centrifugal force and the length and frequency step and speed either achievement was a different value and the reason for this is that the achievement is affected by forcibly expelling situation mechanical player as well as speed, distance and angle of inclination and the rate of length and frequency step.

4. CONCLUSION

1. There is a direct effect of the increasing speed of the variables in the maximum impact of the centrifugal force in the stage ran the effectiveness of the 200-meter curve.
2. There is a fluctuation in speed between increases and decreases in the areas identified by the researcher for each stage of the maximum effect of centrifugal force that ran the curve for all runners.
3. The fundamental difference in biomechanical variables between the areas of maximum phase effect of centrifugal force at the stage ran the curve variables.
4. any biomechanical change in any stage of the effectiveness of the 200-meter clearly affects the subsequent phase due to the stability of the determinants of performance, whether it is linked to the rules of the game on the one hand, or in terms of the exploitation of biomechanical laws, on the other hand.

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