

An Analytical Study Of Some Bio Kinematics Properties In The Flight Phase And Hitting The Ball And Temporal Field Of Movement When Performing The Smash Skill For Center (3) & (4) In Volleyball

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Abstract

For every skillful performance for overwhelming beating despite the similarity of performance as skill, there are decisive details that distinguish performance depending on the center and the type of overwhelming beating, meaning that there are advantages and characteristics for each center in the performance of overwhelming beating, meaning that the presence of physical differences between the two centers (3) and (4) is very possible. The player (3) must be with different specifications and anthropological specifications to some extent, but the form of the skill performance in terms of appearance is not clearly different and what is distinguished in each performance according to the center is not determined by the type of preparation only, but also in the center and the requirements of performance in this center, as we find it difficult. The player (3) must perform the overwhelming beating from the (4) position in a perfect manner, and vice versa also means that the skill performance of the overwhelming beating, although the skill itself is that the performance pattern differs in some particles, and the approach may be the most clear. 3) For what is in the center (4), and the short approach step is also clear, although what distinguishes the players of this length is usually to add and find the repulsion to the opposite player, which is usually characterized by the same specifications and which must be seized if it is important this study. It is difficult for other differences to be clear in the important part of this skill, which is flying and hitting the ball that is a quick habit that cannot be followed with the naked eye in a way that enables us to understand the characteristics of this stage.

Keywords: in volleyball Bio kinematics Properties; Temporal field of Movement.

I -I Introduction and Importance of Research:

For information, multiple stops in all life stations, and he has a distinctive pause in sports, so what we currently see from the achievements and levels that were not previously reached the sports field and all of this is the achievements of science and researchers in the sports field and the mechanic is a clear presence in all sports activities, including volleyball, which led to the advancement of the performance. The skill to a very high level. Knowing accurate details of the skill

performance had a great role, especially in the skill of overwhelming beating and the different performance centers on the network. He has high skills in the attack and the overwhelming beating skill requires a compound of tension, balance, agency and the speed of movement with the correct performance mechanics to achieve its purpose (Sandorfi: 1996). And that every skill performance of overwhelming beating despite the similarity of performance as skill, but there are decisive details that distinguish performance according to the center and the type of overwhelming beating, meaning that there are advantages and

characteristics for each center in the performance of overwhelming beating, meaning that the presence of physical differences between the two centers (3) and (4) is very possible. The fact that the player (3) must be with different specifications and anthropological specifications to some extent, but the form of the skill performance in terms of appearance is not clearly different and what is distinguished in each performance according to the center is not determined by the type of preparation only, but also in the center and performance requirements in this center as we find from It is difficult for a player (3) to perform overwhelming beating from the (4) position in a perfect manner, and vice versa also means that the skill performance of the overwhelming beating, although the skill itself, but the performance pattern varies in some particles, and the approach may be the most clear. The approach is clear in the attack from the center (3) About what is in the center (4), and the short approach step is also clear, although what distinguishes the players of this length is usually to add and I can repel to the opposite player, which is usually characterized by the same specifications and which must be seized if it is important to conduct Such a study. It is difficult for other differences to be clear in the important part of this skill, which is flying and hitting the ball that is a quick habit that cannot be followed by the naked eye in a way that enables us to understand the characteristics of this stage in the two centers mentioned. We also note that the kinetic field between the two centers is different as well and each center Some of them are a specific characteristic, and this leaves the issue without putting information within the framework of teachers and trainers who build emerging players, which must be this building according to valid scientific foundations, and that the lack of accurate knowledge of the characteristics or features of each center in this important part of the skill is not one of the correct things, perhaps it may be This topic is because the comparison may not be feasible in the performance of the overwhelming beating between two different centers and an overwhelming beating of two different heights of the preparation, and this leaves the matter vague to the players if this information is not available, especially since we are in the era of the great development

through which many information that has made was revealed The world is better and from the foregoing, the problem is clear from not highlighting these two cases directly and extracting the Bio kinematics characteristics that characterize the performance of overwhelming beating in the centers (3) And (4) is almost a problem as we mentioned earlier.

The aim of the study The Objective of the Study

-Learn about the Bio kinematics characteristics in the Flight Phase and hit the ball and the temporal field of movement when performing the skill of the smash of center(3) and (4) in volleyball

Methods and structure of the study

Researchers used the descriptive approach in the survey style, and the research sample consisted of (8) players representing the Iraqi national volleyball team for the year 2020-2021 (4) players who were struck from the (4) center. In some important variables, it was found that the value of the mathematical medium and the standard deviation of the total length of the body of the players (4) reached (195.275 - 1.304) cm and with a difference of difference (0.667), while the mathematical medium and the standard deviation of the mass (0.911-87.35) kg and with a difference of difference (1.04) Also, the mathematical medium and the standard deviation of age (25-1.414) reached a difference of (5.65), while the mathematical medium and the standard deviation of the length of the two who hit the center from the center (3) reached (2.280-198.0) and a difference of difference (1.151), while the mathematical milieu reached And the standard deviation of the mass (1.144-89.05) kg and with a difference of difference (1.284), as well as the arithmetic medium and the standard deviation of age (0.816-26.00) years and with a difference of difference of (3.128) as statistical treatment was conducted in order to ensure equal groups, given that the general view is Until the players of the (3) center in length, this may affect the results in table (1)

Table (1) It shows the values of the computational circles of some variables and parity between the two custody players

(4)- (3)he study, which is explained in

	N	Mean	Std. Deviation	t	Sig. (2-tailed)
length	4	1.9528E2	1.30480	-2.074-	0.083
	4	1.9800E2	2.28035		
Wight	4	87.3500	.91104	-2.324-	0.59
	4	89.0500	1.14455		
Age	4	25.0000	1.41421	-1.225-	0.267
	4	26.0000	.81650		

The researchers used Arab and foreign resources and references, Casio Ex-FH20 9.1 MP Digital 20x 1000 FPS, Dell (Cor i7) and a triple carrier used 120 FPS speed as the camera is variable speed and can control its speed and legal aircraft balls and the sample has been photographed In the Olympic Committee Representative Hall, the camera was placed at a horizontal distance (8.35 m) measuring from the vertical Muscat of the camera to the player's standing and a height of (1.30 m) measuring from the lens center to the surface of the earth and after filming the sample. 3 attempts were filmed for each player from the center (4) The number of attempts in this center was 12 attempts, as well as the players (3), i.e. with a total of 12 attempts, and attempts were analyzed in both cases, and in order to obtain the values of the Bio kinematics variables, the researchers used the Dart fish Team Pro 5.5. The decree of the hip and parallel joint with the land with the font from the hip is up to the hip point at the maximum point for the body's flight, while the flying speed was measured by calculating the distance it is traveling m The mass focused and after flying to the same point in its maximum height, as the horizontal distance between

the center of the mass and the network was measured the moment the ball was hit by calculating the distance between the center of the mass and the network. The hip point and the line connected from the hip point to the attached point. Also, the angle of the hip was measured by calculating the corner between the line drawn from the hip point and the parallel to the land and the line drawn from the hip point to the shoulder point. The height of the mass center was measured at the moment of the beating by calculating the distance from the ground To the point of the hip joint, as well as the height of the ball center at the moment of the beating, which is the vertical distance from the ground, to the center of the ball the moment the ball was hit. With the ground after the landing phase.

The statistical program (SPSS) was used, version 22, and it was extracted 1- Accounts 2- Standard deviations 3- Test of the associated samples.

RESULTS: From Table (2) it turns out that the results obtained and which have been statistically addressed

Table (2) shows the values of mathematical circles, normative deviations, (T) values and differences

Bio kinematics variables	Play center	N	Mean	Std. Deviation	Std. Error Mean	t	d/f	Sig. (2-tailed)
flight angle player	Center 3	12	52.9083	1.77941	.51367	6.060	22	.000
	Center 4	12	48.7083	1.61158	.46522			

speed starting player	Center 3	12	2.8450	.25854	.07464	-5.730-	22	.000
	Center 4	12	3.3192	.12376	.03573			
The horizontal distance between the center of the mass and the net is the moment the ball hit	Center 3	12	.5783	.04783	.01381	-7.929-	22	.000
	Center 4	12	.7242	.04209	.01215			
angle of hip at the moment the ball hit	Center 3	12	169.5667	1.14918	.33174	1.204	22	.241
	Center 4	12	168.4375	3.03862	.87718			
angle shoulder the moment of ball hit	Center 3	12	163.6625	3.24959	.93808	-12.112-	22	.000
	Center 4	12	150.2258	2.05151	.59222			
Height of the mass center at the moment of ball hit	Center 3	12	1.8442	.03579	.01033	2.395	22	
	Center 4	12	1.8092	.03579	.01033			.026
The height of ball center the moment of hit	Center 3	12	3.3100	.07932	.02290	3.601	22	.002
	Center 4	12	3.2000	.07006	.02023			
The spatial field of movement	Center 3	12	3.4800	0.3240	0.0340	4.812	22	.000
	Center 4	12	4.6200	0.4100	0.0610			

From table , it turns out that there is a difference in the values of the Bio kinematics variables that were

studied. To infer the characteristics of the Bio kinematics center, as we find that the starting angle

in Center 3, and for the players of this center was greater than it is in the 4th center, and this indicates that the rise is usually greater in Center 3, which led to the achievement of a larger flight angle and the sources confirm that there is a relationship A correlation between the angle of the rise and the angle of flight and that this relationship is direct (Hajim Shani & others: 9), as the need for the vertical vehicle is greater in such a center and this is a characteristic that must be available in the performance of overwhelming beating from this center and does not mean that the decrease in this corner values In Center 4 it is not appropriate, but the performance requirements in this center are different to some It also appeared that the speed of the flight varies between these two positions and the performance of the players in the (3) position, as the approach movement in the (3) position is usually shorter than it is in the 4th center, which is characterized by the length of approaching, as it ranges (2-4) m while decreasing In the center (3), therefore there is a loss of the speed of approaching the shortness of the field of acceleration in the 3rd position, so it usually requires that the 3th player to be tall be in a manner commensurate with the short distance of the approach that causes a reduction in the height of flying if it is not at the required level, that The speed of approaching is an important factor as the angle of promotion is an impact on the speed of flying. In all of the cases, the speed of flying is decreased due to the process of braking and the change of direction (Abd al-Baqi expressed 2010: 4-8), meaning that the speed of approaching is important in providing the body speed in flying, but the 3-year-old players are trying As far as possible, whoever takes a greater approach with the availability of the appropriate length and adapting the player to the performance of the movement in a lower kinetic field, so we find that the angle of the player's flight in this position was greater and it is known that the approaching stage is important in applying force when the rise, as the main purpose of which is to overcome the shortcomings Self -movement at the beginning of the movement, which facilitates the process of ending The flying and the benefit from the strengths of the force during the next stage, especially the last step (Abdel Baqi & Hamza Fadel 2020: 250), and that the speed of flying is subject to the principle of vectors, and here the horizontal vehicle is less than what it is in the overwhelming multiplication from the 4th center, which is usually larger. It was also found that the

horizontal distance between the center of the mass and the network the moment the ball was beaten was less in the center of 3, and the reason for this is the palace of the movement of the movement to approach and rise closer to the vertical, which means a characteristic of the players of this center in the ability to avoid touching the network and approaching a suitable speed for that in a manner that ensures good performance without events A mistake on the network and therefore the flying angle was greater for a suitable skill performance, but this position causes difficulty in performing from this center, especially by the presence of a repulsion player from the 3th team for the opposing team that tries to close the network and the football movement that is close to the network, which makes the hunger player close Also, the blocking player usually tries to introduce the arms towards the attack of the attacking team to prevent the direction of the ball, but this situation is less in the center of 4 if there is a better field in guidance due to the relatively distance of the player from the network and form (1) explains the values of this variable

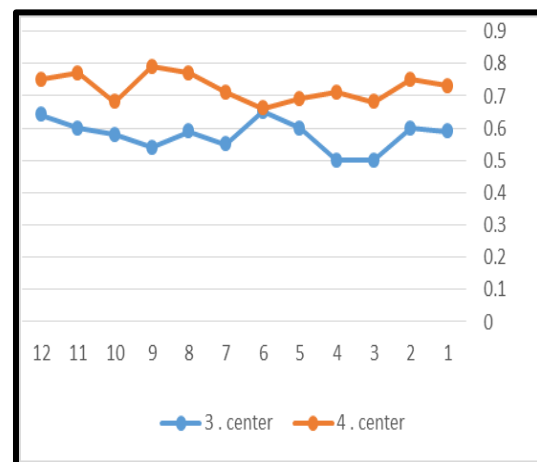


Figure (1) clarifies the values of the horizontal distance variable between the center of the mass and the net, the moment of hit in the center (4) and (3)

As for the hip corner variable at the moment of the beating, there was no moral difference, and this is clear from also appeared that there is a difference and a difference in the values of the variable of the shoulder corner, the moment of hitting the ball, and that each center has a characteristic that differs from what it is in the other position, if the requirement of performance in the beating from the 3th position

requires hitting the ball in a greater height, because the closeness of the ball from the network requires that it move away from the walls of the blocking and this can only be through the high rise. However, the performance from this center is somewhat difficult because of the presence of a close player in the position of 3 of the network for the opposing team, and that obtaining this height requires the player to provide the striking arm in a way more than it is in the center of 4, so we find that the opportunity to hit the ball at an angle of separation, that is, directing the ball to the areas closest to the network or the attack area for the opposing team is greater for the humiliation, the corner of the shoulder is bigger and the wrist plays a big role in directing the ball than it is in the center of 4 as the preference for the striker's departure from the 4th center provided to the player from the overwhelming multiplication, while moving the arm with a larger range, as well as a suitable distance to perform the appropriate movement of the arm. It is worth noting that the movement of the arm affects the increase in the speed of the ball and made it more difficult when defense (Marek Pawel Plawin SKI: 2008) The movement of the arm from the shoulder for a good angle means that it moves quickly better angle if time is preserved to shorten it properly and indicates (Wagner H, Tilp M, Von: Duvillard SPV, Mueller E2009 :) The corner speed is an important factor in achieving a very strong overwhelming structure and mention (Talha Hossam El Din: 1993) is the speed The angle of the arm is one of the most important factors that increases the speed of the linear palm, as the linear speed in rotational movement is proportional to the speed that is directly proportional to There is also a difference in the variable of the height of the bloc center in the (3) center, due to the privacy of the center, which requires the highest view of the presence of high seeds in the competing team from this center, as well as the player's proximity to the semi -semi -arms that determines the full arm, which requires a higher rise in order to be a field Movement for the arm is bigger. It is worth noting that the height of the body relies heavily on the explosive strength that the athlete has, and the force that dominates the Earth is an important factor in obtaining a better height and indicates (Samozino P, Edouard P, Sangnier S, Brighelli M, GIMENEZ P, Morin J-B : 2013) that what the lower limbs are doing and that the vertical force has a great impact in obtaining the height of jumping .It also appeared that

there is a difference in the height of the ball at the moment of the beating, due to the aforementioned reasons in the variable of the height of the body mass center. Despite this height, the player is in position 3 usually uses the beating near the network as much as possible, and this is what drives the players to try to obtain a great height, especially since Center (3) area is usually closed that blocks the possibility of beating towards the center (6) or the change in a central direction (1) or (5), as the angle is overeating, and therefore a greater height must be obtained that allows the direction of the cautery in an area between the 4 and 5 Center On the right side of the player or in the 2 and 1 centers, i.e. close to the front of the front of the defending team, and this means providing a greater hit point while the beating from the center of the 4 -angle of multiplication is better towards the 5th center in the square of the opposing team due to the presence of the repulsion in the center of the 2nd team for the existing team. This provides a better field for distant beating. Figure (2) shows the values of the variables of the height of the center of the mass at the moment of the beating and the height of the center of the ball at the moment of the hit.

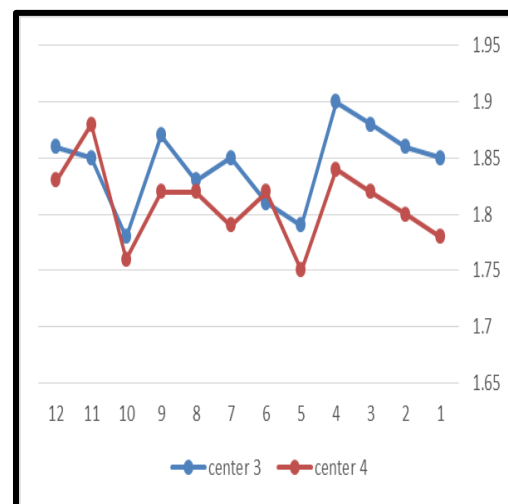


Figure (2)

The values of the maximum height of the mass center show the moment of hit for the players (4) and (3)

It was also found that there is another important characteristic of the overwhelming beating in the (3) center, which is that the kinetic field is always short,

because the attacker from position 3 has duties to repel the direct rapid attack from the opposing team and its movement to repel the attack from the centers (4) and (2) He moves close to the network so that the time is not lost, so it is usually close to the network more than the attacked player from the (4) center, and this is not what gives him a great field of approaching, and therefore the field of overwhelming beating movement in this center is low, but we sometimes find that The striking of this center moves only two steps in order to perform the skill of smash hit , contrary to what is happening in the (4) center.

CONCLUSIONS:

- 1- It was found that each center has a biomechanics characteristics that distinguish it according to the type of attack.
- 2- The most important characteristic of the smash hit from the (3) center is the increase in more, whether for the ball or the ball, which requires a height of the attack from the (4) center according to the requirements of the center and the player's proximity to the net.
- 3- The movement of the attack from Center (3) is usually less, but it follows the requirements of the attack from this center.

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