

Some of the kinematic variables and their relationship to the accuracy of the dimensional rear blow with the badminton for players ages (13-15)

¹Dr. Raid Mhawes Zighair; ²Dr. Wissam Salah Abdul Hussein

¹University of Baghdad/ Iraqraid.m@cope.uobaghdad.edu.iq

² University of Kerbala. Iraq/ wesam.s@uokerbala.edu.iq

Abstract

Through the presence of the researcher that in the field of badminton as well as through observation for most young players found and that there is weakness in the precision strike dimensional background they need a high degree of focus and direction of the feather in the farthest place is to the area back to the stadium rival, and this causes To not achieving positive results due to poor investment of the kinematic variables, which is one of the factors that help in the success of the performance of this skill.

Keywords: kinematics variables, posterior dimensional stroke, feather

Introduction

Researchers interested in since the beginning of the last century studying human movements in general, and on the basis of the general principles his movement and in accordance with the natural law specialists began in the field of physical education study types of movements, forms and forces that cause them. Biomechanics is one of the sciences that contributed to the scientific progress of motor performance in particular and sports in general, and that the main content of this science in the field of physical education includes the study of the causes of movement, i.e., it is concerned with studying the internal and external forces that cause movement, as most recent scientific studies have emphasized the importance of analysis. Kinetic, which depends on discovering weaknesses and strengths and trying to find the reasons for that given the negative and positive influences that affect the movement in light of the associated physical capabilities and anthropomorphic characteristics, taking into account the goal to be achieved from the movement. And to contribute to achieving the best kinetic performance in the individual twine games. The badminton of individual games recently entered the country so specialists seek to publish and distribute their base and perhaps the most important characteristic of badminton skills plane that rapid movements (agile) from the front to the back and vice versa and from side to side and these skills that abound in the game require the capabilities of High mobility so that we can perform its

functions efficiently, especially when performing the dropped strikes, whether by jumping or from the pivot . It also requires great capabilities in the accuracy of hitting the shuttlecock to the most accurate places where it is difficult to respond by the opponent.

Research importance: The analysis and study of relationships and factors of mechanical influence in the strike accuracy front in badminton helps in the arrival of the player to skill performance optimization so knowing like these relationships important things to interest them and focus on them in the study of skills in Wafi for the purpose of optimal development, hence the importance of Search.

Research problem: Through the presence of the researcher that in the game of badminton as well as through the observation of any of that there is a weakness in the accuracy of a blow - dimensional background as you need a high degree of focus and direction of the feather in a place far beyond what is in the area back to the stadium rival, and this causes not to achieve the results of positive Because of the poor investment of the kinematic variables, which is considered one of the factors that help in the success of the hit, and that scoring points or not achieving them in the game of badminton may lead to a change in the outcome of the match, so every player must be fully prepared to exploit every stroke available to him during the match . And that achieving an advanced level in the accuracy of the frontal dimensional strike depends on the application of the correct biomechanical foundations, which can be detected through knowledge of the relationship between some variables affecting the improvement of skill performance in general and the accuracy of the strike in particular. Hence, the research problem arose, as the researcher considered that studying this problem is to contribute to developing scientific solutions by analyzing the skill of the stroke of background dimensions, kinematically analyzing and knowing the most important variables that may contribute to raising the level of achievement of those skills, especially when they are related to the accuracy of performance to show the optimal performance in terms of The mechanism of movement, and the success of its accuracy.

Aim of the research: To identify some of the variables of kinematics and its relationship to accurately strike a to keep the rear badminton players Reconstruction (13-15)

Research postulations: There is a significant correlation between the precision of the front-dimensional strike and some kinematic variables.

Research fields:

The human field: Player's training center in Babel province.

Spatial domain: Babil Governorate - Al Mahaweel Sports Club Hall.

Domain Temporal: the period from 3 / 2 / 20 20 to 20 / 2 / 20 20 for sale .

Literature review

1. The concept of biomechanics

Biomechanics is concerned with the scientific aspects related to determining movement and developing it according to the laws and physical variables of the force affecting the movement, and here it does not mean only studying live movements and finding appropriate solutions for the kinetic action as well, giving the correct and intended form of movement and developing the technique of movements and not just giving the correct model and optimal performance to implement movements in their form better, and they also determine the range of motion and the correct method and appropriate force required to carry out the action and kinetic balance, The study of the human body's motion in the

mathematical field is not done from the mechanical aspect related to mechanical laws only, and this is what the term explains mechanic And it should also study the organic aspect that has a direct impact on the movement, and here is what the term explains BIO (Saltette, 1999) . Biomechanics provides us with accurate information that is considered the best important means in achieving the goal of the movement, as Hossam El Din says, “Each skill has a goal that the player seeks to achieve, and this goal constitutes the basis by which we can classify skills in general. The goal (Talha, 1993). It also deals with biomechanics in research and analysis in the smallest and simplest forms of movement from living nature and reaches through scientific research to the foundations on which the more complex images of these movements are based with their clarification (Raisan, 1992)

2. The concept of kinematic analysis

The word analysis " logical means by which the conduct under which dealt with the phenomenon of the subject of the study is divided into parts or key elements , Qassem Hassan, and Iman Shaker indicates the Z that the kinetic analysis " science looks at the performance and seeks a Li study movement parts and components to get into the intricacies in pursuit of technique best he is one of the means of accurate knowledge of the course in order to improve and develop, ie the analysis of what is the only way we have reached knowledge and help workers in the sports field on the discovery of minutes errors (Kassem , 1995) , the kinetic analysis is one of the basic pillars to evaluate the level of performance through which we can Helping coaches the success of their training approach in achieving the required level in addition to identifying places of weakness in performance and working to overcome them to raise the level of players and participate in tournaments at a good technical level and with better work. This is because the kinetic analysis is one of the most recent scales in evaluation and guidance (Wajih , 2000) Wajih Mahjoub points out that kinetic analysis through experience leads us in reaching an accurate and correct outcome in revealing what accompanies a change in movement in order to reach a result related to, rather, an achievement Mathematical methods that are based on the description of movement and the analysis of all factors (physical, mechanical and anatomical) related to movement performance in a way that ensures their use in solving problems related to but performance.

Research Methodology

The term curriculum refers to "methods and procedures or portal that is used in the search to collect and access data from which to results or interpretations or explanations regarding the research topic so the researcher has used the descriptive study of relations in a manner Relational

The research samples: That the researcher collects his data and information either from the original community as a whole or his sample representing this community. His research sample included (8) players in the badminton training center in Babel province, in order to obtain perfect characteristics and advantages.

Research variables and how to extract them: Researcher prepared the form, indicating a questionnaire in which the variables that could have a precision strike relationship, was distributed form to the experts and specialists to see on their views and take according to the percentage specified for the test, and in the light of what came in the selection of experts has been selected the following variables:

The wrist joint angle: It is the angle between the palm and the forearm and is measured from the inside.

The elbow joint angle: It is the angle between the upper arm and the forearm, measured from the side .

The hip joint angle: It is the angle between the thigh and the torso, measured from the side .

The angle of the knee joint: It is the angle between the thigh bones and the leg, and it is imaged from the side and measured from the outside.

All these variants are depicted from the right.

Presentation and analysis of the results of the search variables

Table No. (1)

It shows the arithmetic mean and standard deviation of performance variables

T	Variables	Arithmetic mean	standard deviation
1	The angle of the wrist joint	14 2, 1 4	2, 6 1
2	Elbow joint angle	1 56, 8 5	3, 13
3	The angle of the hip joint	1 5 8, 33	7, 64
4	Right angle knee joint during contact	16 5,23	6, 93

Presentation of the results of the correlation between the research variables with each other

Table No. (2)

The correlation between variables kinematics shows the skill of a blow - dimensional front and accuracy of the blow

T	Variables	Tabular value	The computed value	indication
1	The angle of the wrist joint	0, 66	0.7 9	Moral
3	Elbow joint angle	0, 66	0. 8 6	Moral
4	The angle of the hip joint	0, 66	0. 4 1	random
5	Right knee flexion angle during contact	0, 66	0.8 1	Moral

Discuss the results of the relationship between the research variables in the study and the accuracy variables

From through the presentation and analysis of the results of the link between the search and accuracy variables skill blow to the dimensions as shown in Table (2) is clear to us that the correlation between the variable angle of flexion right knee during contact with the precision variable was related to link moral is a positive attribute researcher why the flexure knee during the contact leads to an increase of time to perform the hit - dimensional front and that time proportional directly proportional to the accuracy and this is in line with what was confirmed by (Jawad ,1998) " where it is stated that the purpose of bending the knee joint when the beating is getting bigger speed racket and body during The performance of the movement and this is done through the bends occurring in the joints of the body that affect the achievement, including the knee joint and that these bends in the knees are nothing but the action force of the striking player that occurs as a result of the pressure of the body on the fulcrum and generates an opposite reaction to the top. The increase in the tilt of the trunk leads to the investment of force Generated by the chest, shoulder, and upper back muscles group during throwing, a full investment in the direction of force, and that

the body's forward rotation around the longitudinal axis is important and leads to the speed of movement of the upper part and the transmission of speed. The correlation between the elbow angle variable and the precision variable was directly significant, and the researcher attributes the reason for this to the fact that the correct movement of the striking arm must be exploited, i.e., the elbow joint's angle enlarged to obtain a low angular velocity according to the law of angular velocity that is inversely proportional to the radius and to reduce. The angular velocity leads to an increase in time and that time is directly proportional to accuracy, and thus the player's accuracy increases, and this is what Finch and Alfred confirmed (Finch, 2001). That the correct goal of making the right players position angle attachment is to exploit the proper movement of the arm of the striking through the joints of the angle of the arm to get a good dynamic speed of a time commensurate with the speed in order to speed to be a good corner must be there flexion in the elbow joint.

Results

3. There are four important variables that contributed to the accuracy of the frontal drop in the badminton, which are (wrist joint angle, elbow joint angle, hip joint angle, knee joint angle)
4. Some of the kinematic variables are related in a significant way to the accuracy of the front drop of the feather, which are represented by the following variables (angle of flexion of the right knee joint during contact, angle of wrist joint, angle of elbow joint).
5. Some of the kinematic variables are randomly related to the accuracy of the frontal projection of the feather, which is represented by the following variables (angle of flexion of the right knee before contact, angle of the hip joint).

Conclusions & Recommendations

1. Increase the bending and extension of the knees in the preparatory stage and the hitting stage, provided that it corresponds to the processes of extension and bending on the one hand and the technical performance stages of the skill of the front dropped blow with the flying shuttlecock on the other hand.
2. Emphasize the importance of arm movement during the training units, especially the elbow joint angle and wrist joint angle, as these two angles are directly related to accuracy.
3. Trainers must be familiar with the basics and rules of biomechanics and kinematic analysis in addition to other sciences in order for them to have the correct training according to the scientific foundations and correct information.
4. The kinematic transmission process has an important role in activating the movement and outputting it in the correct way after following the kinematic sequence in transferring the movement in a smooth, error-free manner from the lower part to the upper part, ending with the wrist joint.
5. The necessity to conduct similar studies on the same sample to extract the variables that were not taken by the researcher and which did not appear due to the lack of an imaging machine suitable for speed.

References

1. Ali Salloum Jawad, 1998, Some Types of Service Hitting and Their Relationship with Ball Speed, Master Thesis, University of Baghdad, College of Physical Education.
2. Ali Salloum Jawad, 2004, tests, measurements and statistics in the mathematical field, Al-Taif Press, Baghdad
3. Amin Khouly, 2001, Racket Games Series, Dar Al-Fikr for Printing and Publishing, Cairo, 1st Edition
4. Finch from Alfred, 2001, Thriving for Speed and Accuracy Landing State University, USA.
Internet
5. Hudhaifah Ibrahim Al Harbi, 2004, related to some of the variables Elkinmetekih accurately overwhelming blow paintbrush plane, Master Thesis published, Qadisiyah University, Faculty of Physical Education.
6. Qasim Hassan, Iman Shaker, 1995, Research Methods in Kinetic Analysis, 1st Edition, Amman, Arab Thought House.
7. Risan Khuraibet Majeed, 1998, Encyclopedia of Measurements and Tests in Physical Education and Sports, C1, Basra University, Dar Al Kutub for Printing and Publishing.
8. Samir Musallat Al-Hashimi, 1999, Biomechanics, Baghdad, Dar Al-Hikma for printing and publishing
9. Talha Hossam El-Din, 1993, Biomechanics, Theoretical and Applied Foundations, Cairo, Arab Thought House
10. Wissam Salah, 2013, The Flying Feather between Practice and Competition, Jordan, Radwan House for Printing and Publishing.