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The percentage of the contribution of human knives to the stage of advancement and advancement and its relationship to the achievement of the high jump for young women

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ABSTRACT

The importance of the research lies in a descriptive study of the proportion of the contribution of human knives to the stage of advancement and upgrading and its relationship to the achievement of the high jump, most sports in the country still suffer from some obstacles that hinder their march, especially athletics events, especially the effectiveness of the high jump, the researcher noted through his follow-up to the competitions that the results of scientific research, especially in the field of kinetic analysis of research samples, are summarized in the presentation of variables and their statistical results related to the results of correlations between variables and the final product For performance so they do not have sufficient information about the values and ratios of the contribution of human joints affecting the effectiveness and through study and quantitative analysis can extract the characteristics of some variables affecting the jump for the effectiveness of the high jump until the preparation of a successful appropriate and address what is wrong when performing in order to raise the level of achievement in less time and effort and with appropriate achievement, the researcher saw a descriptive study of the proportion of the contribution of human knives to the stage of advancement and upgrading and its relationship to the achievement of the high jump, the research aims to: Identify the values of human knives for the stage of advancement and advancement in the high jump, as well as identify the relationship of human joint kinematic values for the stage of advancement and advancement in the high jump and achievement and identify the percentage of the contribution of human knives to the stage of advancement and advancement in the high jump, The researcher used the descriptive approach in the manner of correlational relations, for its suitability in this study, which is the most appropriate to the nature of the problem found by the researcher, and the research community was determined The community and the research sample included the Iraqi national athletics team player for the junior category (resonance Ahmed) in the effectiveness of the high jump and was chosen in a deliberate way and constitutes a percentage (100%) of the research community, and exploratory experiments and achievement test were conducted and the data were processed statistically .

1- Definition of research

1-1 Introduction and importance of research

The effectiveness of the high jump of the events that have undergone many changes in the mechanism of motor performance and that the development of performance in the high jump led to the improvement of achievement and was directly related to the change of the technique of the jump as well as the method used in this development with its application of the kinematic aspects associated with the requirements of the motor performance of the high jump as the nature of motor skills according to their kinematic characteristics of axes and levels are largely determined by the characteristics of the special physical qualities, despite all these factors that contributed to The evolution of high jump records.

The study and analysis of the stages of motor performance to identify and strengthen the strengths, avoid weaknesses and their causes, and modify the course of performance in light of being guided by the ideal kinematic factors for the performance of the competition is one of the most important steps to reach the higher levels in the high jump competition.

One of the most important duties of the stage of advancement and advancement is that the player obtains the highest height of the center of gravity of the body when starting and this is achieved through strong and rapid push with the rise man with the important role of the free man and arms as they make a strong movement up in accordance with a strong stretch movement from the wrist joint of the foot, knee and thigh of the promotion man.

Kinetic performance is subject to scientific studies and applications in many aspects of sports science, including kinetic analysis, which studies all types of movement and its causes to determine the pros and cons and how to develop training and educational programs depending on the variables extracted during motor performance, for example, the angles and joints of movement as well as the achievement of speed contribute to the success or failure of performance and stands by these variables horizontal and vertical compounds are the cause of the production of the kinetic system, including the forces of the earth's reaction and contribute as a kinematic variable in determining the characteristics of The curve of forces is the time needed by good motor performance and that the appropriate correct compatibility that occurs between the variability in the variables Kinematic and Kentik is the best way to succeed performance, and the importance of research lies in a descriptive study of the proportion of the contribution of knives of human joints to the stage of advancement and upgrading and its relationship to the achievement of the high jump.

1-2 Search problem

Most sports in the country still suffer from some obstacles that hinder their career, especially athletics events, especially the effectiveness of the high jump, the researcher noted through his follow-up to the competitions that the results of scientific research, especially in the field of kinetic analysis of research samples, are summarized in the presentation of variables and their statistical results related to the results of correlation relations between variables and the final product of performance, so they do not have sufficient information about the values and ratios of the contribution of human jointsAffecting the effectiveness and through study and quantitative analysis can extract the characteristics of some variables affecting the jump to the effectiveness of the high jump until the preparation of a successful appropriate and address what is wrong when performing in order to raise the level of achievement in less time and effort and with appropriate achievement , the researcher saw a descriptive study of the proportion of the contribution of the kinematics of human joints to the stage of advancement and upgrading and its relationship to the achievement of the high jump.

1.3 Research objectives

1- Identify the values of human knives for the stage of advancement and advancement in the high jump for young women.
2- Identify the relationship of the values of human knives for the stage of advancement and advancement in the high jump and achievement of young women.
3- Identify the percentage of the contribution of human knives to the stage of advancement and advancement in the achievement of the high jump for young women.

1.4 Research hypotheses

1- The existence of a statistically significant correlation between the kinematics of human joints for the stage of advancement and advancement and the achievement of the high jump for young women.
2- The presence of a contribution percentage of human knives to the stage of advancement and upgrading the achievement of the high jump for young women.

1.5 Research areas

1.5.1 Human field: Iraqi national team player for the junior category of the high jump event.

1-5-2 Time Range: From (5/4/2023) to (17/7/2023).

1.5.3 Spatial field: Stadium of the College of Physical Education and Sports Sciences / University of Baghdad

2- Research Methodology and Field Procedures

2.1 Research Methodology

The research methodology is the method followed by the researcher to determine the steps of his research, which enables him to reach a solution to the research problem (Mahjoub, 2002, 18), so the work of the researcher descriptive approach as it fits the nature of the research and the problem to be researched.

2.2 Research community and sample

The research community and sample included the Iraqi national athletics team player for the junior category and the record holder (Raneen Ahmed) in the high jump event and was chosen in a deliberate manner and constitutes (100%) of the research community.

2-3 Means of collecting information, tools and devices used: -

3.3.1 Means of collecting information:

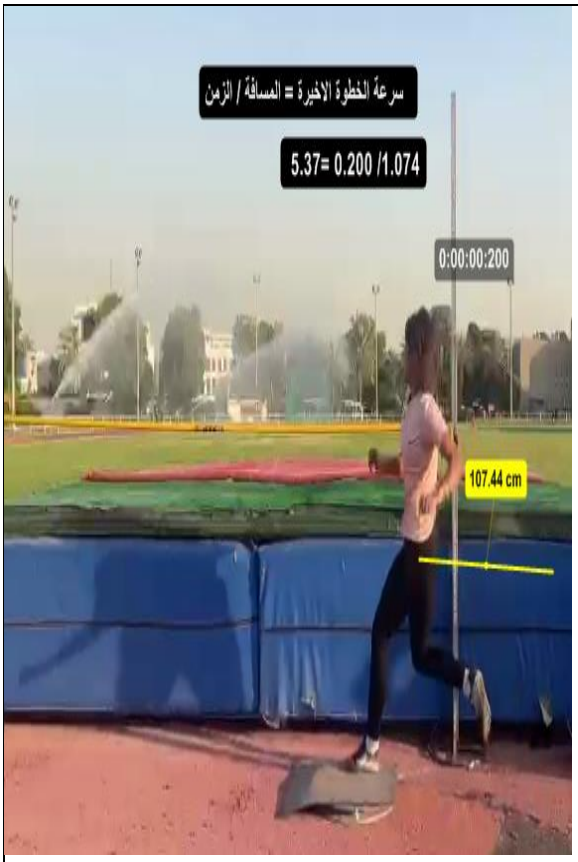
- Scientific sources (Arab and foreign)
- International Information Network (Internet)
- Observation, experimentation, testing and measurement
- Research Sample Data Registration Form
- Software for analyzing movements and extracting variables (KINOVEA)

3.3.2 Tools used in research:

- Camera camera with a frequency of (60-480) images / second number 2.
- HP laptop.
- Kinetic analysis software (Kinovea).
- **Legal field with accessories for high jump effectiveness**
- **Manual electronic calculator number (1) type CASIO**
- **Metal tape to measure distances and heights length (5) meters**
- **Scale length (120) cm**

2-4 Identification of biomechanical variables and how to measure them: -

In order to identify the most important biokinematic variables affecting the effectiveness of the high jump, and after reviewing scientific sources and previous studies, and conducting personal interviews with experts and specialists in the field of biomechanics and athletics, the most important biokinematic variables were identified, as the biokinematic variables were measured by photographing the technical performance of the research sample in the high jump effectiveness test (achievement) and included kinematic variables as follows:

	Last step time: The time of the last s was measured by following the ce of mass of the body from the mon of the last step start to the momen the first touch of the foot with ground. (Ta'ima, 55, 2020).
	Last Step Distance: The distance of last step was measured by follow the center of mass of the object fi the moment of the last step start to moment of the first touch of the with the ground. (Hussein and Sha 1998, 307)
	Last Step Speed: The step speed extracted by applying the speed based on variables No. (1,2) spee distance / time. (Hussein and Sha 1998, 226)
	The height of the body mass cente the moment of full support: The he of the body center of mass measured at the moment of full sup for a foot above the ground. (Hus and Shaker, 1999, 310)
	Trunk angle at the moment of support: It is the angle between horizontal extension and the shou joint at the moment of full support the ground. (Hussein and Moh 2015, 88)

	Angle of the trunk at the moment of end of the thrust: It is the ar between the horizontal extension the shoulder joint at the moment of end of the push and leaving con with the ground. (Hussein Mohsen, 2015, 88)
	Knee angle of the leg of support at support: It is the angle between horizontal range and the hip joint at moment of full support on the grou (Hussein and Mohsen, 2015, 86)
	The knee angle of the support ma the moment of the end of the push: the angle between the horizontal ra and the hip joint at the moment of end of the push and leaving ground(Hussein and Mohsen, 2015)
	Total performance time from moment of impact to the moment feet cross the barrier

3-5 Exploratory Experiment:

The researcher conducted the exploratory experiment other than the main research sample on Thursday, 7/20/2023 to ensure the clarity of the instructions, the method and conditions for conducting the test, determining the test time, the efficiency of the assistant work team, and the difficulties that the researcher may face when conducting the test, on a sample of youth club players in the College of Physical Education and Sports Sciences - University of Baghdad, consisting of a young female player.

1- The places and dimensions of the cameras to ensure the clarity of the image, as the researcher changed the measurements and removed the cameras until he obtained the clear image and the appropriate place for the cameras.
2- Knowing the tools and devices necessary to ensure the peaceful conduct of the main experiment.
3- **Ensure the validity of the stadium and the devices and tools that will be used in the main experience.**
4- Identify the obstacles and difficulties that may face the researcher and the work team when conducting the test and how to address or avoid them.
5- Determine the degree and level of understanding of this test by the assistant team staff .
6- The time spent in carrying out the main test or experiment.

3.6 Main experience

After conducting the exploratory experiment, the researcher proceeded with the assistant team to apply the main experiment on Saturday, 29/7/2023 on the research sample, represented bythe national team player at the University of Baghdad, College of Physical Education and Sports Sciences, and the researcher took the measurement of the player's length and mass by measuring tape, as well as preparing the track, installing the cameras used in photography, and ensuring the safety of the devices and their correct and accurate work, The researcher also used reflective signs to set the center of gravity of the jumper with the help of the work team, and the test was started after the jumper was able to adjust the approximate run and determine it after he was given some attempts to warm up before the start of the test and all attempts were photographed by three cameras and then the data of the sample was recorded in preparation for analysis and extraction of values for kinematic variables through the analysis program (KINOVEA), and the high jump test was conducted according to international law as the start was adopted From the first height (1.40 m) and the goal (1.60 m) and the researcher recorded only successful attempts, which amounted to (6) attempts in order to analyze them and extract the values under study.

2.7 High Jump Achievement Test

The goal of the test is to calculate the height above the crossbar.
Tools used : High jump device (includes crossbar, rolls, rug)
Performance method: The player stands on the starting line of the high jump event when he hears the word "start", the player performs the event and passes the crossbar, where the player runs with balanced rhythmic steps and then rises and passes the crossbar and calculates the height he passed.
Conditions: Each student is given three attempts at each height.

Registration method: The height reached is calculated and the achievement is recorded to the nearest centimeter .

2.8 Statistical Methods

After obtaining the raw data, the statistical bag system (SPSS) is used for processing.

- Arithmetic mean
- Standard deviation
- Pearson's correlation coefficient

3. Presentation, analysis and discussion of results

3-1 Discussion of results

It is noted through the presentation of the results in Table (1) to the existence of a statistically significant relationship between the variables of starting and achievement, as the researcher believes that this relationship is a logical relationship and the researcher attributes this result that to the skill performance of this effectiveness has been designed according to the rules and foundations of biomechanics, as the kinetic path of the movement of the effective parts that can be performed is identical to the goal, which is to pass the crossbar and these biomechanical variables It is in fact the technical material and the qualitative means to solve the motor duty and the link between the factors and forms of training and the biomechanical variables that determine the kinetic path, taking into account the requirements of achievement that govern the performance paths and that **this ideal performance through the kinetic dependence of the Iraqi national team player in the high jump event and represents the highest achievement in that event at the level of their peers, As all the mechanical variables obtained and their values can be the kinetic path that you form is the model or the best path for the form of motor performance** and it turns out through the variables that the player adheres to the values and mechanical laws of performance, which is the relationship between the body force and the moment of inertia, and the researcher believes that the reason for adhering to the mechanical law of the player high jump is the presence of the crossbar, as well as the conditions of movement and upgrading and the perception of performance and its requirements that require greater effort through the force to overcome On the moment of inertia, and we come to the fact that the action of force effect is greater when the movement is performed quickly (in a short period of time), that is, there is a direct proportion between the ability of the person and the speed of movement (Samir Muslat, 1999, 178) so coaches and athletes to take this principle in which the actual movement as in the stage of pushing for the skill of high jump as the time period must be very short until we reach the achievement of the principle of strength characteristic of the speed that throws

using the maximum force At full speed, the researcher attributes this importance to the continuous training to increase the speed of performance of the high jump player when performing the jump, as the player was the levels of the speed of the body of high value, which led to a high starting speed commensurate with the achievement of the accuracy of the goal as (speed = distance / time) (Mohammed Al-Khalidi, 2010, 74), and this is what caused the moral effect, as the researcher attributes the reason for this to the use of the real path of performance By all joints involved in the muscular work and the proper timing of them to determine the correct path of the center of gravity of the player's body to reach the highest possible point at the appropriate angle to achieve accuracy in the completion of motor duty and the researcher believes that obtaining high pressure for the ground is through alternation between increasing the amount of force and time as it (if the player wants to increase the thrust, he can do so by making it as close as possible by increasing the amount of force and reducing the time of the force) (Susan, 2014,377) and that increase in the amount of thrust will turn into a high motor speed in the body, which in turn will move to the parts of the body, as (in order for the parts to gain maximum speed, the body levers must work to move in the right direction, because the rapid movement carried out by the body levers through which we can obtain the maximum effective force that serves the player to achieve the goal of movement in the best way) (Majid and Shalash, 1992, 129)This is what happened when the skill performance of the effectiveness, and since the force is directly proportional to each of the speed of the parts of the body before breaking the contact, so the relationship was inverse between the time of reaching the maximum force of the impact with the time of movement. As the greater the force exerted by the muscles of the body, the angular speed of any joint will increase accordingly, depending on the resulting moment from the amount of force exerted and its distance from the axis of rotation, as the angular movement depends or acceleration, and this indicates that this effectiveness requires high speed and stability in performance until reaching the motor duty and that the speed of departure for the player, as the more appropriate the greater the access and rise above the crossbar faster, because increasing the speed gives the player a high linear speed Exploited to vertical speed to reach the top of the crossbar, as this speed is one of the important stage during which an attempt is made to build momentum and horizontal speed that turns into momentum and ability to the top and the least difference between the horizontal and vertical momentum to obtain the highest streamline, which allows the player to jump to the highest possible and according to the mechanical characteristics, as well as the starting speed is an indicator of the extent of flexion in the legs, as the angle of flexion of the knees is few whenever the pressure on the muscle is reduced Quad and flexor muscles of the hip.(Samir Muslat, 1999, 178), that the mechanical goal

of the effectiveness of the high jump is the process of pushing the body in the air strongly enough to overcome gravity to pass the highest height of its center of gravity from above the crossbar and in order for the jumper to start from the ground, it needs to generate a vertical force and speed and this vertical speed is achieved from the vertical thrust of the body and this applies to every physical effort aimed at achieving its highest vertical height as a vertical jump test of stability. (Frank et al., 2023, 163)

4. Conclusions and recommendations

4-1 Conclusions

1- The values of biokinematic variables and their correlations with achievement are of great importance in diagnosing the strength and weakness of technical performance, through which performance and thus achievement can be improved among the individuals of the research sample.

2- All biokinematic variables expressing the stage of advancement and advancement in the high jump as they were at a level that serves performance and achievement for the emergence of a correlation function among the individuals of the research sample.

4.2 Recommendations:

The researcher recommends:

1- Use periodic kinetic analysis and interpret the results of the analysis in line with the development of optimal performance.

2- Emphasizing the use of modern technical devices for kinetic analysis to detect mechanical errors associated with technical performance and correct errors to reach the correct mechanical situation.

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