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CHARACTERISTICS OF THE POWER CHAIN FUNCTION CURVE AND ITS RELATION TO THE ACCURACY OF THE HIGH-JUMP JUMP IN THE HANDBALL

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ABSTRACT:

The skill high-jump scoring is based on mechanical and physical abilities. The most important of all is the strength used by the player from the moment of preparation to the moment of scoring, which led the researchers to study the characteristics of the series of power chain functions of this skill according to (Biosyn System) The players of the national team's back line have a handball to find out the relationship between the properties of the power chain curve and the accuracy of the high jump to the upper and lower target angles.

The aim of the research was to identify the values of the Force Series variables for the skill of the high-jump curve of the handball as well as the relationship between the properties of the power chain function curve and the accuracy of the high-jump correction zones in the research sample.

The sample of the research was chosen in a deliberate manner, represented by the players of the national team, the back line of the handball, which is (6) players, and the researchers used (Biosyn System) in the analysis of power chain variables. The most important results were the strength of the lower left corner of the goal and the strength of the neck, the force of the trunk, the strength of the left shoulder, the force of the right shoulder, the strength of the right elbow, the strength of the right knee has a significant relationship with the accuracy of the high jump.

The researchers also recommended a number of recommendations, including attention to training on the accuracy of the correction from all angles of the goal and give intensive exercises for players to accuracy.

***Keywords**: Characteristics of the power chain curve - Biosyn system .*

INTRODUCTION

The process of employing different sciences to reach the high level is the result of scientific efforts based on research and field studies to solve all obstacles to the progress of scientific development. The use of modern technology in the study of sports movements and identify weaknesses in performance and treatment led to the help of trainers to recognize the degree The use of mechanical variables to evaluate performance and develop the achievement and raise it to the highest levels.

The game of handball depends on many basic skills, including skipping skill as one of the most important skills that contribute to the accuracy of their performance in determining the outcome of the game, so the researchers thought to address research and analysis by knowing the characteristics of power chain functions according to the system (Biosyn System), which is one of the options that

leads us to obtain accurate outputs in all aspects of the kinetic path of the Kenyan variables to contribute to the improvement of technology.

Hence, the importance of research is to open up new scientific horizons to help trainers develop special training for players to achieve good skill performance according to what the researchers reach from the results related to the characteristics of the power chain function curve and its relation to precision correction.

MATERIALS AND METHODS:

Research Methodology:

For the purpose of reaching scientific facts based on the correct objective basis, it is necessary to choose the appropriate approach as the curriculum is "the scientific path that the researcher takes to solve the problem of his research."

Therefore, the researchers used the descriptive approach to suit the nature and objectives of research in the method of associative relationships.

Search community and sample:

The sample of the research was chosen in a deliberate way, represented by the players of the national team, the back line of the handball, which is (6) players from the community in the national team. The back line was 100% of the original community. Weight, length, and training age) were determined by using the torsion factor.

Table (1): Showing the homogeneity of the sample of the research

Sprains	Factor	standard deviation	Mediator	Arithmetic mean	measruing unit	Variables
equinoctial	0.289	4.656	23	22.45	Year	Age
equinoctial	0.587	3.985	79	78.22	Kg	the weight
equinoctial	0.849	6.142	182	183.74	cm	Length
equinoctial	0.696	0.861	12	12.20	Year	Training age

Table 1 shows that the values of the splicing coefficient for the above measurements were limited to (± 3) indicating that the sample was distributed naturally. The results showed that the sample was homogenized by decreasing the torsion coefficient from ± 1, Whenever these values are close to zero or zero, it indicates that the distribution is moderate or close to it, so that the sample is homogeneous according to the results of the torsion coefficient.

Means of gathering information, tools and devices used in research:

Devices used in research:

Biosyn system.-

Casio Exillim Japanese-made medical camera. -

.Asus computer and CD -

. Medical balance -

.Tape measure-

Methods of gathering information in search:

. Arab and foreign sources, questionnaire and interviews -

.The Internet and the software used in the computer -

Observation, experimentation, testing and measurement. -

ز- A questionnaire for the opinions of experts and specialists to determine the accuracy of the correction test. -

:Tools used in research

. legal handball field -

hand legal balls number . -

drawing scale . -

. squares of iron (4) measuring (50x50) cm -

.A barrier length (1.90 m) and width (3) m -

Biosyn Systems (7) -

System Components:

It is the first device in the technology of scientific progress to assess the biomechanics. It is a system of analysis of the movements of the triangular dimension. The sensors contain the system of speed integration and the act of gravity. It allows the detection of angular displacement to conduct the body biomechanically and displays and computes the kinetic and kinetic data in its real state with multiple virtual images of motion Body and give three-dimensional selected schematic models. It works through sensors (17) and is lightweight and attached to the body of the player by rubber belts that ensure the ease and freedom of movement of the player and depends on the system

speed of transmission between the sensor and the program and the system to dispense the video through sensors and dispense with the scale of drawing through the installation of physical measurements . As shown in the figure below.

Figure (1): The system (Biosyn system)

Field research procedures:

High jump accuracy test :

- The purpose of the test: to measure the accuracy of the skill of shooting high jump hand roller.

Used equipments:

handball legal number : -

.- A barrier at a height of 1.90 meters and a width of 3 meters. It is placed between the height of the player and the target and the goal is separated from the target (7) m

The goal of legal handball.-

- squares of iron (4) designed for the purpose of testing the precision of the high-speed remote kick by the hand hoist fixed in the upper corners of the target (50 cm x 50 cm) and the lower corners

Performance Method.

The laboratory stands at a distance of 4 (5 m) from the 75-degree circle with a point on the free throw line facing the middle of the goal. The test begins by passing the ball to the assistant player and then moves to pick it up (try again if handling is not done) Correct) and take three steps then rise up from the center of the circle of correction on the free throw line to pour over the barrier on the box of his choice as shown in Figure (1)

Test rules

. Do not take more than three steps after receiving the ball -

. The player is given 12 attempts and three attempts in each box-

Recording test results:

- Three points are counted when the ball enters the box assigned to the score directly.

. Calculate two points when the ball enters the box after hitting the square edge-

- A single point of the ball is counted outside the box and within the goal of the handball.

zero) for the ball that is outside the legal goal of handball.

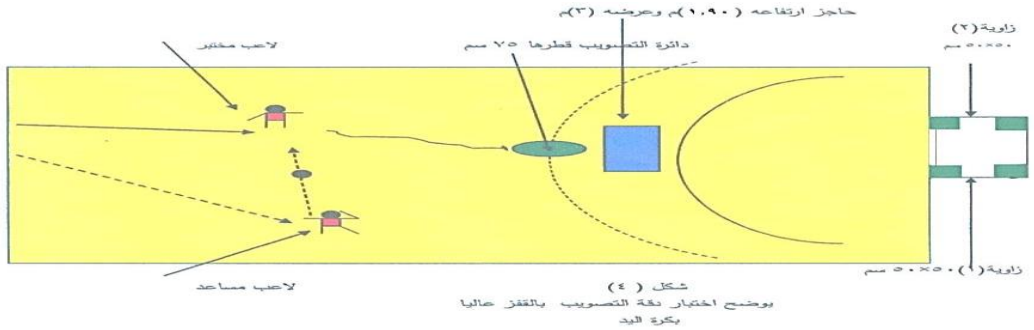

Figure (2): The accuracy of the high jump correction test shows

Power String Variables:

Details of the measurements of the power chain through Biosyn System on the Excel program for the skill of high jump correction to break the arm contact with the ball during the correction.

)Neck strength (Newton -

strength of the trunk (Newton) -

Left shoulder force (Newton) -

Right shoulder force (Newton) -

Power of the left elbow (Newton) -

The force of the right elbow (Newton) -

Left hip force (Newton) -

Right hip force (Newton) -

Left knee strength (Newton) -

Right Knee Strength (Newton) -

Exploration Experience:

The researchers carried out the exploratory experiment on Saturday 21/4/2018 and the hall of the specialized center of sports talent handball in the Ministry of Youth and Sports and at 2:00 pm with the help of the auxiliary team. The aim of the experiment:

.Identify the extent to which players respond to the test vocabulary -

. Identify errors that may interfere with the implementation of the test -

. Ensure the safety of the equipment used in the test -

.Ensure that the testing time is adequate and feasible -

:Main experience

The researchers carried out the application of the field experiment on Tuesday, 24-4-2018 and the hall of the specialized center of sports talent handball at the Ministry of Youth and Sports at 2.30 pm and with the help of the auxiliary team. The camera was taken with a Japanese video camera Casio Exillim. High-jump hand-reel for the purpose as well as extraction of power chain variants through Biosyn system.

:Statistical means

.Arithmetic mean-

.standard deviation-

Correlation coefficient. -

.Mediator-

Coefficient of variation-

-Test coefficient correlation (Pearson).

RESULT AND DISCUSSION:

Table (2)

Shows the statistical description of the power chain variables for the sample of the research

المعلمات الاحصائية Statistical landmarks										Biomechanical Variables		
sig	مجموع الدقة	sig	دقة اليسار السفلى	sig	دقة اليسار العليا	sig	دقة اليمين السفلى	sig	دقة اليمين العليا			
0.67	-0.10	0.13	-0.35	0.04	-0.12	0.02	-0.57	0.87	0.54	Cervical Force(N)	1	Force series
0.96	-0.01	0.61	-0.12	0.01	-0.57	0.01	0.54	0.84	-0.05	Trunk Force(N)	2	
0.45	-0.18	0.22	-0.29	0.02	-0.57	0.01	-0.01	0.56	-0.12	Left Shoulder Force(N)	3	
0.95	-0.01	0.50	-0.10	0.04	-0.01	0.02	-0.12	0.94	-0.57	Right Shoulder Force(N)	4	
0.25	0.27	0.08	-0.40	0.52	-0.01	0.54	-0.30	0.69	0.06	Left Elbow Force(N)	5	
0.94	0.02	0.22	-0.29	0.21	-0.12	0.05	0.45	0.72	-0.01	Right Elbow Force(N)	6	
0.67	0.10	0.12	-0.36	0.10	-0.18	0.08	0.02	0.81	0.06	Left Hip Force(N)	7	
0.63	0.11	0.44	-0.18	0.26	-0.26	0.08	-0.29	0.81	0.06	Right Hip Force(N)	8	
0.80	0.06	0.75	-0.08	0.89	-0.03	0.44	-0.48	0.88	-0.04	Left Knee Force(N)	9	
0.67	-0.10	0.87	0.10	0.03	0.11	0.03	0.48	0.89	0.03	Right Knee Force(N)	10	

The results show that there is no significant correlation between the performance of precision skill in the correction before and after the effort. Kamal and Hassanein confirm that accuracy requires a complete neuronal compatibility and control of the musculoskeletal system of the individual. In most cases, the use of physical exertion is at the expense of accuracy, This means that their availability together is a highly desirable exception (which is what we see in players who

Table (3): The relationship results for the characteristics of the power chain function curve and the accuracy zones of the high-jump jump show

Force series

Statistical landmarks المعلمات الاحصائية						Average الوسط الحسابي		Dimensional equations معادلات الأبعاد	Biomechanical Variables		
MIN اقل قيمة	MAX اعلى قيمة	Variance الاختلاف	Skew الالتواء	Median الوسيط	standard deviation الانحراف المعياري	Time of influence وقت التأثيرات	Values القيمة				
121.78	398.67	40.48	-0.19	311.7	110.4	0.08	272.8	$[M].[L].[T]^{-2}$	Cervical Force(N)	1	Force series
508.28	764.33	15.42	0.80	568	92.4	0.08	599	$[M].[L].[T]^{-2}$	Trunk Force(N)	2	
88.11	265.52	28.58	-0.15	185.2	51.1	0.08	178.6	$[M].[L].[T]^{-2}$	Left Shoulder Force(N)	3	
101.32	693.31	48.52	1.38	282.7	135.2	0.08	278.7	$[M].[L].[T]^{-2}$	Right Shoulder Force(N)	4	
64.54	295.49	36.19	1.28	133.1	50.9	0.08	140.7	$[M].[L].[T]^{-2}$	Left Elbow Force(N)	5	
84.35	358.10	45.69	0.44	166.1	91.6	0.08	200.6	$[M].[L].[T]^{-2}$	Right Elbow Force(N)	6	
615.21	994.59	9.38	-2.49	940.1	85.9	0.08	916.8	$[M].[L].[T]^{-2}$	Left Hip Force(N)	7	
351.10	1372.38	37.18	0.24	826.9	284.1	0.08	764.1	$[M].[L].[T]^{-2}$	Right Hip Force(N)	8	
196.06	780.34	21.75	-1.69	609.8	130.2	0.08	598.9	$[M].[L].[T]^{-2}$	Left Knee Force(N)	9	
266.50	660.39	23.28	0.23	455.6	103.5	0.08	444.5	$[M].[L].[T]^{-2}$	Right Knee Force(N)	10	

Table 3 shows a significant correlation between the accuracy of the shot in the lower corner of the right side of the goal and the strength of the neck, trunk force, left shoulder force, right shoulder force, right elbow force, and right knee strength respectively. (0.01, 0.01, 0.02, 0.05, 0.03).

From the same table, there is a significant correlation between the accuracy of the shot in the upper corner of the left side of the goal and the neck strength, trunk strength, left shoulder force, right shoulder force, right knee strength, respectively (0.04, 0.01, 0.04, 0.03). There were also significant significant correlations between the power chain curve and the scoring accuracy in the upper right corner and the lower side of the left side.

In the opinion of the researchers that the skill of high jump jump handball is a series of forces in the direction of relatively horizontal in the approach phase and then move in the upgrade to semi-vertical to achieve the mechanical goal of the movement is accurate targeting to the goal and in different directions and therefore requires the body to work according to the group Of the mechanical laws intended to achieve the movement of movement of the lower limbs and then the trunk and then to the upper limbs.

Experts emphasize that one of the most important mechanical requirements that must be characterized by a good goalkeeper is to be able to jump high strongly to achieve the required height quickly and in a very short time (1:43). This explains the relationship between the accuracy of the pitch in the upper left corner and some variables in the power chain curve at the level of elevation.

That the values of variables in the mechanical impact of muscles during the movement continues to all parts of the body and to a certain amount, and there are basic and corresponding muscles and other counterpart and all these

muscles produce strength at the same moment, but in different directions.

The researcher believes that the success of the dynamics in the transfer of power between parts of the body, especially the two men as the first part on which the production of force requires a smooth movement. This is indicated by many specialists in the field of biomechanics that the importance of flow in the knee joint between the process of flexion and tide, which is one of the most important variables that affect performance. as well as the need for the full tide of the two men at the moment pushing the earth in order to achieve the greatest momentum .

Some add that the importance of speed in the implementation of the upgrade and scoring contribute to increase the accuracy of hitting the ball

Thus, the researchers attribute that the non-significant differences that have emerged in many of the variables in the above table can be caused by weakness in some kinetic parameters of that skill.

CONCLUSIONS:

- Variables (neck strength, trunk force, left shoulder force, right shoulder force, right elbow strength, right knee strength) have significant significance with precision accuracy in the lower right corner of the goal for high-jump skill.

- The variables (neck strength, trunk strength, left shoulder force, right shoulder force, right knee strength) have a statistically significant correlation with the accuracy of the upper left corner of the goal for the skill of the high-jump shot.

ENDORSEMENT:

- attention to training on the shooting from all angles and give intense exercises for players to accuracy accuracy.
- an emphasis on careful understanding and analysis of the factors influencing the skill correction Elkinmetekih in order to achieve accuracy.
- A study similar to the rest of the functions Elkintek curve characteristics and its relationship with precision correction to the four corners of the target.

REFERENCES

- Eman Shaker: Analysis of the relationship between the characteristics of the curve (force - time) and some of the biomechanical variables for the stage of promotion of long jump efficiency, PhD thesis, Baghdad University, Faculty of Physical Education, p43.

Risan Khreibat Majid: Athletics, Mosul, Press Higher Education, 1989, p. 94 -

- Saadi Shaker Hamoudi: Principles of Economics and its Applications in the Department of Education and Social, Jordan House of Culture, 2009, p. 168.

- aisal Ghazi Abdul Hussein: the effectiveness of mechanical properties using optical means in the development of the index of motor transport and some of the biomechanical variables of the accuracy of high-jump jumping handball, doctoral thesis, unpublished, University of Basra, 2010, p. 76-78.

- Wadih Yassin Al-Tikriti, Mohammed Hamad Al-Obaidi: Statistical Applications and Computer Applications in Physical Education, Mosul, 1999, p. 178.

- Nuri Ibrahim Al-Shawk, Rafie Saleh Al-Kubaisi: Research Guide to Writing Research in Physical Education, Baghdad University, Faculty of Physical Education, 2004, p36.

- www.biosyn system .com

- Christine Von Heisne. Margareta Nordin : tillampad Biomekanik , printed by Pozkal , Poland , 2012, P49 – 52.

- Singh Ghuman & Harbans Lal Godara: The analysis of phyometric program on cenirersity Handball players , iose journal of sport and physical education, e-issn: 2347-6737, volume. Issuez (Nov.-Dec. 2013).