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DETERMINING NUMERICAL REFERENCES OF SOME BIOCHEMICAL VARIABLES AS PREDICATIVE INDICATORS IN OFFENSIVE SKILLFUL PERFORMANCE OF YOUNG FOOTBALLERS

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Abstract:
The research aims to devise, with predictive equivalence for interactive skill performance, options for some biochemical indicators as well as resistance to rubber layers. Categories of which the research included the human field in young football players, and determined the time frame for a period from 22/9/2023 to 25/1/2024. The researchers used the descriptive approach in the style of correlational and predictive relationships. The research sample consisted of 50 players from youth football clubs in Maysan Governorate. The researchers applied skill tests and extracted the scientific foundations for them. The SPSS system was also used to obtain the results of the research. The researchers concluded the independent variables contributed a high percentage to offensive skill performance, as well as devising a predictive equation through which offensive skill performance can be predicted in terms of some biochemical variables in the research sample. The researchers recommended, according to the results and conclusions reached that coaches must pay attention to biochemical indicators as they are one of the basic requirements that affect athletic skill performance, as well as adopting predictive equations as an indicator of the players' condition in offensive skill performance in the future.

Keywords: numerical references, offensive skillful, footballers

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1. Introduction to the research and its importance

The progress achieved in all sports fields, especially football, requires great work through comprehensive preparation physically, skillfully, and psychologically, and this comes through physical, skillful, physiological, and psychological tests. To reach the highest levels, studies and research must be conducted and applied in the field to know the positive things to support and advance them and avoid the negative things, and this can only come through tests and measurements along with other sports sciences that must be taken into consideration when raising the sports level.

Tests and measurements are the tools for evaluating the player. This is done by extracting the raw scores and converting them into standard scores so that the player can know his score so that he can compare him with his peers in the same team, and then predict what the individual will reach in the future, as well as identifying the efficiency of the training curricula.

The game of football is constantly progressing and developing, just like other sports, and offensive skills are the basis for reaching the opponent's goal, which requires high functional abilities so that the player can apply them correctly and master them.

From the above, the importance of research is summarized in knowing the state reached by players in offensive skill performance in terms of some biochemical indicators to predict what players will reach in the future, to be a scientific guide for the player and the coach, and to set special standards for them to advance the level of the game of football and to form a clear vision and accurate estimate of the player's skill state.

2. Research Problem

Through the two field researchers following the game of football and being former players and current university professors; they noticed that there is a lack of interest on the part of coaches in measuring the skill and physiological abilities of players, and given the importance of biochemical indicators in the game of football and their effective role in the performance of offensive skills, the two researchers decided to identify the state of the players and know their levels, as well as identify contribution rates and predict grades. Players in the future, which will be scientific evidence that will benefit players and coaches alike.

2.1 Research Aims

1) Identify the relationship between some biochemical indicators and football skill performance among the research sample,
2) Identify the contribution of some biochemical indicators and football skill performance among the research sample, and
3) Extracting predictive equations for skill performance in terms of some biochemical indicators in the research sample.

2.2 Research Areas

- Human field: a sample of players of Maysan province clubs in youth football and the number of 50 players.
- Spatial area: football fields in the clubs.
- Time domain: the period from 22/9/2023 to 25/1/2024.

3. Research Methodology and Field Procedures

3.1 Research Methodology

The method is the scientific path followed by the researchers to solve a particular problem and the research methodology fits with the objectives and the problem to address it ([1]), and therefore the researchers used the descriptive approach in the style of correlational and predictive studies.

3.2 Research Community and Sample

One of the things that must be taken into account in the field of research is the selection of a sample that represents a real representation of the research community, as it is "the part that represents the community of origin, or the model on which the researchers conduct the entirety and the focus of their work on it" ([2]).

The research sample represented the players of Maysan youth football clubs and the number of 60 players, and the researchers conducted the exploratory experiment on 10 players from outside the research sample so that the final research sample became 50 players.

3.3 Means of Gathering Information, Devices, and Tools Used

3.3.1 Means of Collecting Information

- Scientific sources (Arab and foreign),
- Observation,
- Testing and measurement,
- Internet,
- Auxiliary staff,
- Information registration forms.

3.3.2 Devices and Tools Used

The researchers used the following devices and tools: (1 electronic clock), 1 manual electronic computer, 1 electronic computer, 10 legal footballs, 5 whistle, adhesive tape, a football field, dry and sterile plastic tubes with tight lids to store blood samples, an ice box with a number of ice bags, a centrifuge to separate blood components.

3.4 Identification of Some Biochemical Indicators

The researchers distributed a questionnaire to survey the opinions of experts on some biochemical indicators that are associated with offensive skills in football, and all experts agreed on some indicators (CPK, PH, lactic acid).

3.5 Determination of the Complex Offensive Performance Test in Football

The researchers adopted a codified test (the tactical play test by changing centers) and its purpose (accuracy of handling, receiving, and scoring) (Ali Jassim Shalaka, 2022).

3.6 Biochemical Measurements under Consideration

A sample of 5 cm^3 was withdrawn from each young player among the main sample members after performing the effort by a doctor specialized in medical analysis, using sterile plastic injections used only once, and it was discharged into clean and sterile plastic tubes, as it was numbered, arranged and sequenced inside the analysis box to extract the values of these variables.

3.7 Exploratory Experiment

The exploratory experiment was conducted on a sample of (10) players from the Tigris Sports Club, in order to find out the time it takes to carry out the tests and biochemical measurements, the difficulties that the researchers may face, and to know the ability of the assistant team on how to use the devices and tools as well as the time taken by the tests.

3.8 Main Experience

The researchers applied biochemical tests and measurements to the main research sample of 50 players under the same conditions in the exploratory experiment.

3.9 Statistical Media

The ready-made statistical kit SPSS v.21 was used for statistical treatments.

4. Presentation, Analysis, and Discussion of Results

After the researchers conducted tests and measurements of the research variables, the results were treated statistically and the results are presented in tables, analyzed, and discussed.

4.1 Presentation of the Results of the Predictive Value of Offensive Skill Performance in Terms of Some Biochemical Indicators

Table 1: Arithmetic Means, Standard Deviations, Correlation coefficient, Contribution Ratio and Level of Significance between Offensive Skill Performance in Terms of Some Biochemical Indicators

Search variables	Unit of measurement	Arithmetic mean	Standard deviation	Simple link	Contribution percentage	Significance level
Offensive skill performance	D/S	0.641	0.099			
Lactic acid	mg/dL	11.090	0.715	0.875	0.766	0.000
CPK	litre	206.100	36.587	0.930	0.865	0.000
PH	kg/l	6.060	0.594	0.812	0.659	0.000

To obtain correlation coefficients between the research variables, the researcher used the simple correlation (Pearson) as a statistical means to achieve this purpose, and Table 1 shows the simple correlation coefficients and their contribution ratios between the variables involved in the regression of the dependent variable (offensive skill performance) with some independent variables (biochemical indicators), as the link between offensive skill performance with lactic acid (0.875) with a contribution rate of 0.766 and a level of significance (0.000), and the correlation of offensive skill performance with CPK (0.930) and a contribution rate of 0.865 and a level of significance (0.000), while the correlation of offensive skill performance with PH (0.812) and contribution ratio (0.659) and significance level (0.000).

Table 2: Correlation Coefficient, the Multiple Contribution Ratio and the Standard Error of the Estimate between the Offensive Skill Performance and Some Biochemical Indicators

Model	Multilink	Contribution percentage	Standard error of estimation
1	0.937	0.878	0.035

Through our observation of Table 2, it is clear to us the value of multiple correlation as it reached 0.937 and the contribution ratio (0.878) and a standard error rate (0.035), and in order to identify the regression coefficient for the contribution of some independent variables (biochemical indicators) to predict the measurement of (offensive skill performance) as a dependent variable, the researchers used the test (analysis of variance). Table 3 shows this.

Table 3: Multiple Regression Variance Analysis to Examine the Quality of the Compatibility of Multiple Linear Regression Model Shows between Offensive Skill Performance and Certain Biochemical Indicators

Model		Sum of squares	Degree of freedom	Average squares	F	Error rate
Offensive skill performance	**Regression**	1.275	3	0.425	106.25	0.000
	Remaining	0.178	46	0.004		
	Total	1.453	49			

By observing Table 3, it is clear to us that the independent variables are suitable for predicting the measurement of the offensive skill performance of the research sample through the moral value (F), as it reached 106.25 and an error rate of 0.000, and in order to reach the equation of the multiple regression line, the researchers used the test (T). Table 4 shows this

Table 4: The Values of the fixed Limit and Inclination (impact) between the Offensive Skill Performance and Some Biochemical Indicators and Their Standard Errors and the Level of Their Real Significance and the Significance of the Differences

Model		Unstandardized coefficients		(Beta) Standard regression coefficient	T	sig
		B	Standard error			
1	(Constant)	0.635	0.132	----	4.806	0.000
Offensive skill performance	Lactic	-0.077	0.021	-0.555	-4.573	0.000
	CPK	0.004	0.003	1.399	3.491	0.000
	PH	0.013	0.014	0.643	3.909	0.000

Table 4 shows that the index (lactic lion) independent variable first contributor, the index (PH) independent variable second contributor, and the index (CPK) independent variable third contributor and it may become clear to us that biochemical indicators have contributed to the dependent variable (offensive skill performance) through the results extracted, and therefore the predictive regression equation using the multiple regression equation is as follows:

Predictive value of offensive skill performance = ((Constant) - (arithmetic mean × lactic coefficient acid) + (arithmetic mean × CPK coefficient) + (arithmetic mean × pH coefficient)

Thus, the researchers have achieved the third goal of the research by developing predictive equations for the performance of offensive skills in terms of some biochemical indicators affecting football players for the youth category, and the researchers attribute the reason for this to the fact that the biochemical indicators that work inside the body for the continuation of life and the internal organs and muscles function to the fullest, including enzymes, hormones, elements, chemical compounds, and others, and these indicators are of great importance in the field of sports Especially the game of football, as its work increases when performing a high physical effort to increase the efficiency of job work and help achieve good skill performance and reach a high level in the player's performance.

5. Conclusions and Recommendations

5.1 Conclusions

- Independent variables contributed a high percentage to offensive skill performance.
- Devising a predictive equation through which the offensive skill performance can be predicted in terms of some biochemical variables in the research sample.

5.2 Recommendations

According to the results and conclusions reached by the two researchers, the following recommendations were made:

1) The need for coaches to pay attention to biochemical indicators as they are one of the basic requirements that affect sports skill performance.
2) Adopting predictive equations as an indicator of the status of players in the future offensive skill performance.
3) Conducting similar studies for other stages according to other variables and for both sexes.

Conflict of Interest Statement

Authors attest that they have no affiliations with or involvement in any organisation or entity that has any financial interest in the subject matter or materials discussed in this manuscript, including honoraria, educational grants, speaker bureau participation, membership, employment, consultancies, stock ownership, or other equity interest, expert testimony, or patent-licensing arrangements

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