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THE RELATIONSHIP OF ANTHROPOMETRIC MEASUREMENTS TO THE PHYSICAL EFFICIENCY OF STUDENT SOCCER PLAYERS

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Abstract

The importance of the proposed research lies in the game of soccer , which is one of the most exciting and exciting games because of the strong competition in it, which requires high physical efficiency in order for the player to be able to complete the match in both halves or even extra time. The aim of the proposed research was to identify the relationship between physical measurements and the physical efficiency of soccer students, as the researchers hypothesized that there is a correlation between physical measurements and the physical efficiency of students. The researchers used the descriptive approach to suit the nature of the research proposed by the researchers, as the research sample was from students of the fourth stage - University of Karbala, College of Physical Education and Sports Sciences, who numbered 22 students and were chosen randomly, as the sample constituted a percentage of 22% of the research population. After the two researchers surveyed many sources, in addition to their modest scientific experience, they also presented a questionnaire to experts and specialists in the game of soccer - tests, where the physical aptitude test was developed by an arcometer bike. The researchers concluded that there is a strong moral relationship between physical measurements and the physical efficiency of students. The researchers reached recommendations, the most important of which are to conduct similar studies and conduct research into the physical aptitude test that is different from the test that was studied by the researchers.

Keywords: Anthropometric ,physical efficiency and soccer.

Introduction

Reaching high sports levels requires comprehensive preparation in all aspects, including physical efficiency, physiological and psychological aspects, and other important aspects. Most countries in the world have reached the most appropriate scientific methods used in training processes in order to reach international sporting achievements and win the championships that can be achieved. Achieved through scientific development in the field of soccer .

The rapid development that occurred in soccer in the world was the result of the combined efforts of scientists and researchers with different specializations in all sports fields, which witnessed development in the theoretical and scientific aspects of the game.[1]

The importance of the proposed research for the game of soccer lies in studying the relationship that helps the teacher and the coach and knowing the relationship between physical efficiency and some physical measurements.

Research problem

The research problem posed by the two researchers in terms of their observations of fourth-year students at the University of Karbala - College of Physical Education and Sports Sciences is that there is a lack of interest by some teachers in preparing students in terms of physical efficiency, and in addition to that, there is a lack of interest in students' physical measurements and whether they have an impact on efficiency. Physically, this is where the research problem posed by the two researchers came from.

Research objectives

1. Identifying the physical measurements of fourth-stage students.
2. Identify the relationship between students' physical measurements and physical efficiency.

Research hypotheses

- There are statistically significant differences between the physical measurements and physical efficiency of students

Field of research

- Human field: Students of the College of Physical Education and Sports Sciences - University of Karbala, fourth stage, for the year 2024.
- Spatial area: - Stadium of the College of Physical Education and Sports Sciences - University of Karbala.
- Time frame: from 1/25/2024 to 3/25/2024.

Research Methodology

The researchers used the descriptive approach to suit the nature of the research proposed by the researchers

Research community and sample

The researchers determined the research population from students of the College of Physical Education and Sports Sciences. The research sample was determined from the students of the fourth stage - University of Karbala, College of Physical Education and Sports Sciences, who numbered 22 students and were chosen randomly. The sample constituted a percentage of 22% of the research population. The researchers conducted a Homogeneity in their research sample according to the variables of height, weight, and age.

Table 1. Shows homogeneity among the research sample

Variables	mean	STD	Skewness
Length	1.61	0.507	0.429
Weight	62.6	8.919	0.595
Age	18.416	0.583	1.067

Devices, tools and methods used in research

- References.
- Questionnaire.
- The interview.
- Measuring tape.
- Stopwatch (2), Japanese origin.

- Medical scale (Chinese).
- Whistle number 2.
- Archometer bicycle.
- Results registration form.

Field research procedures

After the researchers distributed the questionnaire form related to physical variables as well as physical measurements to experts and specialists in this field, in addition to surveying many Arab and foreign sources, the researchers determined the following:

1. Physical aptitude test
2. Physical measurements

Physical measurements[2]

After collecting the questionnaire, the specialists agreed on the specific and influential physical measurements of a soccer player, which are:

- Body length - Body weight - Shoulder width

1. Body length

Body length was measured using a tape located on the wall, and the student was measured from the highest point of his skull to the floor.

2. Body weight

The weight of the research sample was measured by the researchers using an electronic medical scale. The weight of the research sample was measured by the student stepping on the medical scale without wearing shoes and with clothes, then the weight was read and recorded on a special form for that.

3. Shoulder width

Shoulder width was measured by the researchers with a measuring tape and was placed from the beginning of the lateral crests of the two protrusions of the two shoulder blades of the tested student from a standing position with the arms extended beside the student's body.

Physical aptitude test for students

After collecting the questionnaire, the two specialist researchers agreed to test the soccer player's physical fitness, which is:

- Erchometer stationary bike test

1. Physical aptitude test

- The purpose : To measure the physical competence of students.[3]
- Tools used: A stationary bicycle (arcometer) equipped with a special screen that shows the first voltage with the first pulse and the second voltage with the second pulse.
- Physical aptitude test specifications: The student performs the movement on the arcometer twice, each time for (3 minutes). Each time he is given a rest ranging from (3-6 minutes). The intensity of the first load is determined based on the student's level of fitness, while the intensity of the second load is determined according to the pulse rate resulting from the load. The first is for the laboratory student to calculate the pulse in the last (25) seconds of the third minute. At the end of each load, by looking at the bike screen, a pulse rate will appear for the laboratory student.

The exploratory experience

The exploratory experiment is a preliminary study conducted by the researchers on their research sample in order to ensure the validity of the tests and identify errors that correspond to the main experiment. The researchers conducted the exploratory experiment on (1/27/2024) in the laboratory of the College of Physical Education and Sports Sciences - Karbala on a sample of 5. Students from outside the research sample.

The main experiment

After determining the effective physical measurements and physical competence of the sample student, the researchers applied the measurements related to the research and tested the physical competence of the research sample on (9/1/2024), and relied on the results obtained by the researchers from members of the research sample, students of the fourth stage, College of Physical Education and Sports Sciences – University of Karbala.

Results

Table 2. Shows the calculated and tabulated correlation coefficient values and statistical significance

Variables	Calculated correlation coefficient	Tabular correlation coefficient	Statistical significance
Body length	0.892	0.396	Sig.
Body weight	0.864	0.396	Sig.
Physical efficiency	0.932	0.396	Sig.
Shoulder width	0.891	0.396	Sig.

Through Table (2), we notice the values of the correlation coefficient calculated for body length reached (0.892), its tabular correlation coefficient (0.396), the correlation coefficient calculated for body weight reached (0.864), the tabular correlation coefficient (0.396), the correlation coefficient calculated for physical efficiency (0.932), and the correlation coefficient calculated for physical efficiency (0.932). The cross-tabular correlation is (0.396), and the value of the correlation coefficient calculated for the shoulder width is (0.891), and the cross-tabular value is (0.396).

Through Table (2) we notice that there is a significant relationship between physical measurements and physical competence of the research sample.

Discussion

Through Table (2) we notice that there is a significant relationship between the physical measurements and the physical efficiency of the research sample. The researchers attribute that the body weight in terms of performance in the game of soccer depends on the student's mass and his distance from the ground.

As for the reason for the existence of a statistically significant correlation between body length, the researchers attribute this to the presence of a strong motor connection between the muscles of the legs and the torso, which are connected by the hip joint, which leads to heavy muscular work from the legs to the torso, which is the result of full extension of the foot and knee joint of the leg, where the side is fixed. The pelvis pushes the hip forward, which leads to a rounding of the chest. The length of the body parts measured also helps in creating the

correct angle when taking steps from one side and helps positively in increasing the frequency of steps.[4]

What the results concluded is that focusing on different physical measurements is very important in achieving good results, and this is due to the necessity of emphasizing the admission mechanism in colleges of sports sciences because of its great importance in selecting students to be qualified to represent various sports skills and sports, especially sports. soccer.[5]

Different physical measurements, especially length, affect several factors such as agility, balance, and the ability to handle various playing situations to achieve good results.

Conclusions

1. There is a significant relationship between some of the physical measurements of fourth-stage students in soccer .
2. There is a significant relationship between the physical measurements of fourth-stage students and their physical efficiency

Recommendations

1. Conducting similar experiments and research on a different research sample in terms of gender or stage.
2. The need for trainers or teachers to pay attention to the fourth stage in physical measurements.
3. It is necessary to pay attention to the physical competence of students and conduct periodic tests for it.

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