How to Cite:
Al-Jaber, K. A. H. (2022). The relationship of some physical and corporal variables, pushing the force and determining the percentage of its contribution to the long jump. *International Journal of Health Sciences*, *6*(S8), 5564–5570.
https://doi.org/10.53730/ijhs.v6nS8.13542

The relationship of some physical and corporal variables, pushing the force and determining the percentage of its contribution to the long jump

Karim Abdul Hussein Al-Jaber
The Ministry of Education, General Directorate of Education in Diwaniyah, Iraq
Corresponding author email: Kareemaljaberkk64@gmail.com

***Abstract*---**The long jump is one of the popular games among most people of the world because it evokes a spirit of love and fun. The skills of the long jump are closely related to other sports sciences, including biomechanics, which detects errors and provides accurate information that the naked eye may not be able to see because of the speed you have. Hence, it was necessary to be careful in the proper planning of the sports training process and the preparation of the training curricula for the event and its implementation in the correct manner. The player who possesses this trait as well as some physical measurements such as height, for example, is qualified to perform the achievement, so it requires the player to possess these qualities to be able to achieve the target number, hence the importance of the research in identifying the relationship between some physical and physical variables and pushing the force and the extent of its contribution by a long jump.

***Keywords*---**relationship some physical, corporal variables, pushing force, determining percentage, long jump.

Introduction

Research problem

The long jump is one of the athletics events that depend on strength and speed to achieve achievement, and through the researcher's follow-up to the developments in this event and his watching of many local and Arab championships as a coach, he noticed a weakness in achieving achievement for Iraqi players compared to the Arabs and the world because of the bad investment in physical and physical variables and the way players are selected for this event. Hence, the research

problem arose, as the researcher considered studying this subject to contribute to the development of scientific solutions by studying some physical and physical attributes and pushing strength in the completion of the long jump.

Research Objectives

The research aims to:

1. Recognizing the relationship between some physical variables in the long jump.
2. To identify the relationship between some physical attributes and the long jump.
3. Recognize the relationship between the force push and the long jump.
4. Identifying the percentage of the contribution of some physical attributes and bodily variables and pushing the force with the long jump.

Research hypotheses

1. There is a significant correlation between some physical variables in the long jump.
2. There is a significant correlation between some physical attributes in the long jump.
3. There is a significant correlation between the force push and the long jump.
4. There are varying percentages of contribution to some physical attributes and physical variables and pushing the force with the long jump.

Practical part
Research Methodology

The researcher used the descriptive approach in the style of studying correlational relationships, which is the best method to solve the research problem.

Research sample and community

The research community was identified with the students of the second stage in the College of Physical Education and Sports Sciences, the University of Al-Qadisiyah for the academic year 2021-2022, whose number is (26) students, from which a sample was selected for the exploratory experiment consisting of (3) female students and for the main experiment (20) female students, which were divided into two groups (control, experimental) are equal in number and percentage (76.92%).

Field Research Procedures

Physical and physical attributes used in the research

The researcher relied on the most important characteristics affecting the achievement of the long jump through previous sources, references and studies, in addition to displaying a questionnaire to explore the opinions of experts and specialists in this field. Which got the highest percentage by experts.

Exploratory experience

To stand on the performance of the devices used, testing them and knowing the negative aspects and variables that will face the work, the researcher conducted the exploratory experiment on 3/26/2022 in the closed hall in the College of Physical Education / the University of Al-Qadisiyah on a sample of the second stage students, numbering (5) students from within the community Research The exploratory experiment aims to:

a. The suitability of the test to the research sample.
b. Knowing the time taken to take the test and implement it.
c. Ensure the adequacy of the assistant staff.
d. Obtaining confirmation of the results of the sources related to the stability of the mechanism for technical performance
e. Obtaining the scientific transactions for the test.

Main experience

The main experiment was conducted on April 13, 2022, corresponding to Monday, in the closed hall in the College of Physical Education / University of Al-Qadisiyah. Three attempts were given to each student after explaining the test to them. Physical tests were also applied and the physical variables were measured on this day on a sample. Search.

Statistical means

Some statistical methods were used in the ready-made program (SPSS).

Results

Table (1)
It shows the arithmetic means and standard deviations of the research variables in the long jump with the long jump

variables		mean	standard deviation
1	long jump	3.33	0.81
2	Height	163.14	3.05
3	Mass	61.7	3.59
4	Muscular capacity of the legs	1.92	0.58
5	thrust force	1431.53	43.36

Table (1) shows the arithmetic mean of the skill of the long jump, which amounted to (3.33) and standard deviation (0.81), and the arithmetic mean of length which reached (163.14) and standard deviation (3.05), and the arithmetic means of weight (61.7) and standard deviation (3.59), and the arithmetic means For the medical ball test, it was (4.25) with a standard deviation of (0.58), while the arithmetic means of the jump test from stability was (1.92) and standard deviation (0.58), and the arithmetic mean of the push-force test was (1431.53) and standard deviation (43.36).

Table (2)
It shows the correlation between the long jump and some physical variables and the value of the tabular correlation

physical variables		value (t) computed	value (t) tabular	significance
1	Height	0.69	0.51	Significant
2	Mass	0.57		non-significant

Degree of freedom = n-2 = 15-2 = 13 at the level of significance (0.05)
Table (2) shows the value of the calculated correlation coefficient for length, where appeared (at 0.69), which is significant, and the value of the calculated correlation coefficient for weight, which appeared (at 0.57), which is not significant, and the tabular correlation value was (0.51) at the degree of freedom (13) and the level of significance (0.05).

Table (3)
It shows the correlation between the long jump and some physical attributes and the value of the tabular correlation

physical variables		value (t) computed	value (t) tabular	significance
1	medicine ball	0.79	0.51	Significant
2	Jump from standing still	0.73		significant

Degree of freedom = n-2 = 15-2 = 13 at the level of significance (0.05)

Table (3) shows the value of the correlation coefficient calculated for the medical ball test, which appeared (at 0.79), which is significant, and the value of the correlation coefficient calculated for the jump test, which appeared (at 0.73), which is significant, and the tabular correlation value was (0.51) at the degree of freedom (13).) with a level of significance (0.05).

Table (4)
It shows the correlation between the long jump and the force push and the tabular correlation value

value	value (r) computed	value of (r) tabular	significance
Thrust force (force platform measurement)	0.59	0.51	significant

Degree of freedom = n-2 = 15-2 = 13 at the level of significance (0.05)

Table (4) shows the value of the correlation coefficient calculated for the force push test, where it appeared (at 0.59), which is significant, and the tabular correlation value was (0.51) at the degree of freedom (13) and the level of significance (0.05).

Discussing the results of the long jump and its relationship to some research variables

It was found from the previous tables that there is a significant correlation between special physical abilities and the level of achievement in the long jump. It appears clearly when performing various types of achievement, especially the achievement with the long jump, and all of the above requires the player to combine the two qualities of strength and speed at the same time and repeatedly throughout the race periods, and this means that the coaches are working to develop this important physical characteristic for all players And the long jumpers, in particular, to develop their skill well to ensure the performance of the duties assigned to him. In this regard, Muhammad Hassan Allawi and Ahmed Nasr Al-Din point out that "the most important characteristic of outstanding athletes is that they possess a great deal of strength and speed, and they can link them in an integrated manner to cause rapid movement" Displaying the results of the contribution percentage for the research variables with the long jump variable with the long jump

Analysis and discussion of the results of the percentage contribution of variables with the long jump:

The researcher believes that the contribution percentage gives us the actual value of the contribution of the research variables to the level of achievement in the long jump obtained by the research sample, and these percentages represent the level of what the research sample members need in terms of physical, physical and biomechanical capabilities. From Table (10) the researcher extracted the actual contribution ratios through the use of regression, and we have four variables that have a significant contribution to the achievement in the long jump, where the length test got (0.51) with an error rate (0.000), and the researcher explains this by what is characterized by the length variable From an important role in the long jump, among other achievement skills, as for the weight variable, where he obtained a contribution percentage (0.077) and an error rate (0.000).

As for the most important physical abilities, they have an effective and high role in contributing to the long jump, where the strength of the two legs participated by (0.62) and with an error rate (0.000), while jumping from stability also had a role in the percentage of achievement in the long jump with a percentage of (0.60) and an error rate (0.000). As for pushing force, it also has an important role in the percentage of achievement skill in the long jump, as it participated with a percentage of (0.44) and a percentage of error (0.000).

And that the achievement is preferred by the teams more than the rest of the types because of the ease of controlling the result of the match, and thus the researcher agrees with what was brought by NEILD(), Khaled Negm, () Asaad Al-Ani ( ) The proximity of the distance and the location make the achievement more likely to succeed than if the achievement was from a long distance Because the greater the distance, the lower the speed, and the morphological variables, especially the height and weight variable, have an important role in the long jump. Players who have excess weight, as well as physical abilities, must be enjoyed the long jumper, especially the capabilities of the specialized muscles,

and since the achievement is contributed by the strength of the muscles of the legs, so the muscles of the legs play an important and essential role in the achievement of the skill of achievement in the long jump, as well as the strength of the muscles of the legs has an important role He participates in the long jump, as well as pushing the force through the sample test with the power platform device, which has a role in the percentage of achievement in the long jump.

Conclusions

1. Height affects performance in the long jump.
2. The physical variables have a role in the long jump, especially the length variable.
3. Physical abilities play an important role in the long jump, especially the physical abilities of the two men.
4. It is possible to know the amount of force thrust to the legs when the player performs the long jump through the force platform.

References

Ali Salloum Jawad: Tests, Measurement and Statistics, Al-Qadisiyah University, Al-Taif Library, 2004.

Asaad Al-Ani, Muhammad Salih: The distance and its relationship to the long jump from the stability to the long jump, published research, Journal of Physical Education, Vol. 14, 1996.

Essam Abdel-Khaleq: Sports Training, 2nd Edition, Dar Al-Maaref, 1981.

Fayez Bashir Hammoudat and others: Foundations and Principles of the Long Jump, University Press, University of Mosul, 1983.

International Information Network: The Iraqi Sports Academy.

Kathleen, M. Haywood, Life Span Motor Development, Human Kinetics Publishers, U.S.A., 1993.

Khaled Najm Abdullah: The achievement in the long jump and its relationship to the results of matches, Master's thesis, College of Physical Education, University of Baghdad, 1986.

Marwan Abdel Majeed Ibrahim: Tests, Measurement and Evaluation in Physical Education, Dar Al-Fikr for Printing, Publishing and Distribution, Jordan, 1999.

Mohamed Mahmoud Abdel-Dayem and Mohamed Sobhi Hassanein: Analogy in the Long Jump, Dar Al-Fikr Al-Arabi, Cairo, 1984.

Muhammad Hassan Allawi and Ahmed Nasr Al-Din: Motor Performance Tests, Dar Al-Fikr Al-Arabi, Cairo, 1982.

Muhammad Hassan Allawi and Muhammad Nasr al-Din: Motor Performance Tests, Dar al-Fikr al-Arabi, Cairo, 2001.

Muhammad Othman: Movement Learning and Sports Training, Dar Al-Qalam, Kuwait, 1987.

Muhammad Sobhi Hassanein: Evaluation and Measurement in Physical Education, 2nd Edition, Part 2, Dar Al-Fikr Al-Arabi, Cairo, 1987.

Mustafa Mohamed Zidan: The Long Jump for Coach and Teacher, Dar Al Fikr Al Arabi, Cairo, 1998.

NEILD KAACS and DICK MOTTA: Basket Ball- The keys to Excellence, U.S.A., Copyright, 1988.

Qais Naji Abdul-Jabbar and Bastawisi Ahmed: Tests, Measurement and Principles of Statistics in the Mathematical Field, University of Baghdad, 1984.

Saad Mohsen and others: The relationship of some physical measurements of the muscular ability of the upper and lower extremities of handball goalkeepers, the Fourth Sports Scientific Conference of the Colleges of Physical Education in Iraq, Volume 2, 1989.

Ted Saint: The Art of Achievement in the Long Jump, Arab House of Science Press, Lebanon, 1996.

Wajih Mahjoub: Scientific Research Methods and Methods, 2nd Edition, Dar Al-Hikma for Printing and Publishing, Baghdad, 1988.

Yousef Al-Anazi: Educational Research Methods between Theory and Practice, Al-Falah Library for Publishing and Distribution, Kuwait, 1999.