

# THE RELATION BETWEEN FOOT'S LENGTH & WIDTH WITH SOME PHYSICAL ABILITIES AND PERFORMANCE ACCURACY OF SOME BASIC SKILLS OF FEMALE VOLLEYBALL PLAYERS

**Nowzad Hussien Darwish**

*Physical Education School, Koya University*

## **Abstract**

The research aims to Identify the foot measurements (length and width) of the sample and Identify the length and width of the foot and their relationship with some physical abilities and accuracy of the performance of some of the basic skills in a game of volleyball in the research sample.

The research sample included on the players posts clubs in the Premier League in the Kurdistan Region (Taq Taq, Brihty) for volleyball, and state their number (24) for the player and the use of researcher descriptive manner relations connectivity, was chosen as the research sample in a deliberate and conduct tests and measurements on the length and width of the foot and some tests of physical abilities and test some of the basic skills was the use of a number of devices and tools and means to collect and process data using appropriate statistical methods and after obtaining the results, was discussed in a scientific manner powered sources to achieve the objectives of the research and prove his hypothesis.

In light of the results of research researcher reached the following conclusions:

- The presence of a significant correlation between the length of the foot and hid the transition speed.
- The presence of a significant correlation between the foot and the transitional speed test and Fitness.
- The lack of a significant correlation between the length and width of the foot, explosive test of strength and balance.
- The lack of a significant correlation between the length and width of the foot transponder test receiver and landslide hit the country.

In light of the above, the resear

**Keywords : Relation. Physical. Volleyball. Skills. Abilities.**

## **1. INTRODUCTION**

Female football players should possess suitable anthropometric measurements with the game including high physical abilities, optimal performance as they are important conditions. Anthropometric measurements and physical abilities are the most important decisive factors in winning matches, especially when there is an equal skill and planning levels between both teams. Anthropometric measurements are very important in evaluating one's growth and determine weight and height in different age stages. Foot's length and width have a great importance when performing basic movements such as standing, running and jumping. The athlete is the part who forms the base on which the body depends and it helps the foot on body movements as well as toes, especially the thumb help body in movement and balance. The feet are also related to physical abilities such as balance, agility and the ability to direct voluntary movements by individuals towards a certain goal, especially while changing direction and keeping body balance during performing attacking and defense skills. The wider the base is, the more constant the player will be. The feet also have a great effect in increasing shooting power and accuracy in volleyball especially if we know that volleyball is characterized by changing situations between defense and attack. This makes it necessary to employ them well to control matches. Therefore, the optimal choice of players depends greatly on anthropometric measurements, so a trainer must choose female athletes with the needed anthropometric measurements as these measurements are related with a lot of other variables (biomechanical, physical ones) as well as their effect on producing power, speed and accuracy according to the needed aim. The researcher poses the following question: are foot measurements (length and width) related to some physical abilities and the accuracy of performing basic skills in volleyball?

## **2. METHODOLOGY:**

The researcher used the descriptive approach with correlations.

### **Community & Sample of the Study**

The community of the study consists of female players from clubs participating in the volleyball premier league at Kurdistan region (Tak Tak, Braya Ti, Ranya, Koya, Akad and Snharb). The study sample was chosen by the purposive method from female players of Tak Tak and Braya Ti clubs consisting of 24 players. The study sample consisted of 20 female players after eliminating 4 players due to injury.

**Variables & Selections of the Study:**

**The Used Measurements:**

- Foot length and width

**The Used Physical Tests:**

- Speed test
- Agility test
- Constant balance test from the vertical posture
- Explosive ability test for feet muscles

**The Used Skill Tests:**

- Receiving a serve test
- Diagonal smash shots accuracy test

**Main Experiment:**

Tests were performed on 18-19/01/2015. The first day was for anthropometric measurements (foot length and width) and physical tests (agility, balance, vertical jump) and the second day was for skill tests (accuracy of receiving serves using arms and diagonal smash shots).

**3. RESULTS OF THE STUDY:**

**Table (1): arithmetic means and standards deviations for variables of foot length, width physical abilities and accuracy:**

Variables	Measurement unit	Arithmetic mean	Standard deviation
Foot length	Cm	23.000	0.917
Foot width	Cm	8.225	0.611
Speed	Second	3.198	0.119
Agility	Second	7.800	0.565
Balance	Second	13.720	9.497
Vertical jump	Cm	34.250	4.940
Receiving	Number	10.700	2.296
Diagonal smash shots	Number	8.850	4.893

**Results and discussion of relation between foot length and width with some physical abilities:**

**Table (2) correlation matrix between values of foot length, width and some physical abilities**

	Variables	Correlation Value			
		FOOT LENGTH	SIGNIFICANCE	FOOT WIDTH	SIGNIFICANCE
1	Speed	*0.530	SIGNIFICANT	*0.480	SIGNIFICANT

2	Agility	0.315	INSIGNIFICANT	**0.652	SIGNIFICANT
3	Balance	0.251	INSIGNIFICANT	0.351	INSIGNIFICANT
4	Explosive Ability	0.174	INSIGNIFICANT	0.20	INSIGNIFICANT

\* Significant at error ratio  $\leq (0.05)$  and freedom degree  $(20-2=18)$

#### 4. DISCUSSING RESULTS:

Foot length represents its horizontal direction with movement direction in running (speed) on one hand. On the other hand, foot length gives an advantage as a base to depend on at final centralization which has a direct relation with foot length. Accordingly, areas of friction with foot and land will be wider. This helps in body movement in its total speed and that's why the relation was significant. As for agility that depends on changing direction, food width plays a great role in achieving constancy strength and push body sideward as well as the contribution of foot length as foot axes correspond with axes of movement forward and sideward. In other words, players need foot area to change between stopping continuous movement sideward and then continue at the counter side (zigzag). The anatomy posture of the foot plays an important part in this performance. In addition, foot length and width achieve a good centralization base while changing direction and this feature achieves non-reduction in speed which correlated directly with the time achieved in this test. As for balance, it needs to achieve a great touching period and distributed by direct pressure on middle foot and then transfer. The used mechanism in balance is different from running and ability mechanisms which require from the player to concentrate his weight center continuously within a narrow base which means that the process is related to the nervous aspect more than physical aspects. As for explosive power, it depends on both strength and time. This is a mechanical rule and maybe there is a difference in power proportions despite the presence of lengths and widths on one hand. On the other hand, there will be a weakness in the strength of thighs and feet that play an important role in affecting explosive power which depends greatly on both thigh and feet muscle strength.

**Table (4): correlation matrix between values of foot width and length and accuracy of performing basic skills**

	Variables	Correlation Value			
		FOOT LENGTH	SIGNIFICANCE	FOOT WIDTH	SIGNIFICANCE
1	Receiving	0.012	INSIGNIFICANT	0.176	INSIGNIFICANT
2	Diagonal smash shooting	0.090	INSIGNIFICANT	0.202	INSIGNIFICANT

**There is no significant relation at error ratio (0.05) between (foot length, width, receiving and diagonal smash shots) the counted (R)**

value is between (0.012-0.176-0.090.0.202) and these are less than the scheduled value (0.444) the researcher found that these measurements are not related to performance in receiving and smash shots as they depend on the player's ability to control arms, trunk with the needed power to achieve comprehensive performance which is affected by feet length and width.

#### 5. CONCLUSIONS:

- There is a significant correlation between foot length and transitional speed test.
- There is a significant correlation between foot length, transitional speed test and agility.
- There is no significant correlation between foot length, width, explosive power test and balance.
- There is no significant correlation between foot length, width, receiving serves and diagonal smash shots.

#### Recommendations

Upon previous conclusions, the researchers recommend the following:

- While choosing female volleyball players, they should distinguish feet length and width.
- There should be similar studies to individual and group sports in Iraq with comparing their results with the study results.

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### **Address for correspondence**

**Authors : Nowzad Hussien Darwish** – Physical Education School, Koya University

E-mail address : [nawzad.hussein@koyauniversity.org](mailto:nawzad.hussein@koyauniversity.org)