Relationship Between Some Morphological Variables and Level of Achievement for Players at Higher Levels in Tennis

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Abstract: The study aimed to identify the extent of correlation between variables morphological selected and the level of achievement for the players at higher levels in tennis. The researcher used the descriptive (survey) approach. Sample (n=10) was purposefully chosen from men tennis players who have centers of the first to tenth in the order of last general of the men in January 2011 according to the classification of the Egyptian tennis federation. The researcher conducted 26 morphological measurement including weight, lengths, breadth, circumference, thickness of skin folds and the level of achievement for players at high levels. The researcher used correlation coefficient between morphological variables selected and the level of players' achievement. The researcher recommended that the morphological variables are important for the selection of the squad, particularly the national team. Also, conducting similar studies in the aspects (skills, physiological, psychological) associated with the level of achievement for high levels players in tennis, performing comparative studies for men tennis players in Egypt and other countries with higher levels in tennis using anthropometric variables.

Key words: Morphological variables % Level of achievement % Higher levels % Tennis

INTRODUCTION

See science is a remarkable development in various fields of life, where she was most of the phenomena of scientific research and I have enjoyed sports a large share of the study and contained a variety of studies, between studies of the mechanistic foundations of skills, sports and studies focused on studying the foundations of biological and bio-physical, the other focused on studying aspects of psychological and mental and knowledge, all in order to study the relationship or knowledge of the factors affecting the level of sporting achievement and then can gain access to scientific results is guided by the organizers of the processes of education and sports training in directing the course of the level of achievement.

We are now in the most difficult situations need to evaluations physiological and morphological under many waves severe emergency in the sports field, whether at the local level or international level, At the local level, we still need to pause to get to know our capabilities in terms of physical physiological and morphological and whether this potential can be either inherited or acquired to achieve access to high levels [1].

The identification of requirements of physical activity practices are the main focus of a standard or ruler of the test and selection correct scientifically and should start from the top to the bottom of the sense of identifying the potential and capacity of heroes people with digit level (as a model) and put Requirements of physical activity practice, which should begin on the basis of recognition the capacity and potential physical, physical, motor and psychological individual seeks to achieve to reach the ranks of the tournament in that activity [2].

For each sporting activity requirements of physical special needs fulfilled by those who aimed to make the medals and trophies in this activity and that the size, shape, construction and configuration of the body of the person sporting a crucial factor for achievement and sporting excellence and trained professionals know the facts very well, so the first what excites them is the search and prospecting for raw materials Sports fruitful and

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promising success and sporting excellence and their tools in this process are the specifications suitable for the type of physical activity [3]. That the individual's fitness for the various sports activities is determined by the appropriateness of the installation body of performance required of them [4]. The correlation measurements of many physical basis of motor skills to excel in various sports activities and building physical and body weight, height and body lifts are the most important factors that determine the skill sports and is based upon access to higher levels of Sports [5].

That the goal of completion is determined that either compete with the standard, or a certain level of excellence, or compete with others, or compete with the individual with his past and try to seek and strive towards the achievement of unique and perseverance on the long-term effort to Mastery, control and the ability to do what is characterized as difficult [4, 6-9].

To follow the achievement of great importance in the process of orientation training in the choice of determining the level of achievement of the current basis for planning training and furthermore it will provide us with information on the effectiveness of the training performed as well as having an important role in self-monitoring of the athlete [10]. That the term is also synonymous with achievement of the performance, but it reflects the measured performance of any form of quantitative performance as expressed also The adequacy of performance [11]. That the mathematical skills require the idea of achievement, Faalanjaz a cornerstone and a point of rotation of sport and achievement in the field of sports training refers to the maximum performance is appreciated distance or points or time or weight, which is why the term achievement as a synonym for success [12]. That the level of achievement in the sports field can be measured through four basic criteria resulted in the empirical studies in this area and by comparing the level of Performance benchmarks [13].

Sporting achievement represents the degree or level of performance motor sports and in view of the structure of the complex is composed, it is determined by a number of specific components, which are called the components affecting the level of achievement and which ones physical configuration [2-9, 11-23].

It also that the physical characteristics of the tennis player is one of the most important qualities on which the process of sports training to get to the tournament and the achievement of sporting achievement [7]. And there is a relationship between the achievement levels of sports, body composition, physical abilities and characteristics anthropometric is one of the salient factors that affect the

learning of motor skills, as they indicated that measurements of anthropometric have an effect on the response of the body player to various circumstances surrounding it and also the efficiency of the physical, they provide the trainers in all types of physical activity and the significance of body measurements and symmetry properties depending on their age and level sports [17].

Aim: The current research aims to identify the extent of correlation between morphological variables selected and the level of achievement for the players at higher levels in tennis.

Research Questions: The current research poses the following question: Is there a relationship with a statistically significant correlation between the morphological variables under consideration and the level of achievement for the players at higher levels in tennis?

MATERIALS AND METHODS

The researcher used the descriptive (survey) approach. Sample (n=10) was purposefully chosen from players who have centers of the first to tenth in the order last year for men January 2011, according to the classification of Management Domestic leagues Union of the Egyptian Tennis. Other 5 men players (from the same research community and outside the main sample) were chosen for the pilot study.

Data Collection Tools and Forms
Anthropometric Measurements: Through literature review for previous studies related to anthropometric measurements [1, 4,5, 7, 8, 15-22, 24,25] And to explore the views of gentlemen experts, the number was reached 26,a measure as follows: body weight-length(total height, upper limb, arm, upper arm, forearm, palm, lower limb, thigh, leg)-Breadth(shoulder, chest)-circumference(upper arm, forearm, chest, abdomen, thigh, leg) - thickness of skin folds at each of the(muscle with three heads of the brachial, axillary line East, chest, bottom of the blade bone, abdomen, iliac higher, mid-thigh, above the line medial leg).

Forms: The researcher used the Experts opinion form to identify anthropometric measurements that can be used as indicators for tennis players' selection.

Tools: A medical balance - a restameter - a measuring tape - pluviometer- Alcaliber.

Pilot Study: Pilot study was done on 5 players (from the same research community and outside the main sample) from 7-5-2011 to 21-5-2011 to identify any difficulties that may hinder the main application.

Main Study: The researcher performed the anthropometric measurements from 1-6-2011 to 6-7-2011 under the suitable protocols for each measurement. Data were collected and recorded for statistical treatment.

Statistical Treatment: The researcher used SPSS software to calculate the following: mean - standard deviation - median - skewness - Person's correlation coefficient.

RESULTS AND DISCUSSION

Table 1 shows that skewness values for the research variables ranged between 0.124 and 1.546.This indicates that sample was homogenous in the chosen variables.

Table 2 shows correlation coefficient between the variables morphological and level of achievement for the players of the highest levels in tennis, the research sample, where the results indicated the table to the presence of correlation positive correlation was statistically significant at the level of 0.05 between body weight and level of achievement for the players the higher levels in tennis and attributed this result to the researcher that the weight of the body, if exceeded the allowable limit hinders the performance of the player who in turn affect the level achieved during the tournaments.

The results of this study agree with other studies, which have stated that if the availability of ideal body weight for tennis players can reach high levels and body weight of the factors affecting the effectiveness of the performance of tennis players [7, 21, 22].

There is a connection between the physical configuration of the player in terms of weight and access to high levels of sports often requires of all sporting activity of certain physical characteristics must be observed when the appropriate choice of the individual[2].

The results in Table 2 the existence of correlation positive correlation was statistically significant at the level of 0.05 between the length each of the (total height, upper limb, arm, upper arm, forearm, palm, leg) and the level of achievement for the players at higher levels in tennis, While no correlation is statistically significant at the level of 0.05 between the length of each of the (lower limb, thigh) and the level of achievement for the players at higher levels in tennis and attributed the researcher of this result to the importance of the total length and the length

of some limbs in that it earns the player an advantage morphology of being able to revealed more space for half Pitch the other hand and then directing the payment of various strikes better accurate and positive influence in earn points and then to win and reach the level of achievement of a high during the tournaments, in addition to the total length and the length of some limbs contribute to the possibility of control of the player on the balls away with him.

The consistent results of this study with the results of a previous study where it indicated a positive relationship between the degree of accuracy performance and the total length of the body and the length of the arm and the length of the trunk and along the palm and the length of the leg, while there is an inverse relationship between the degree of accuracy performance and the length of the lower end and the length of the thigh [22].

The importance of anthropometric measurements of the upper side in the sport of tennis and the extent of their contributions to raising the standard of achievement among the players, due to the nature of the performance of a game of tennis in terms of the length of the striking arm and the length of the upper limb[19].

The results in Table 2 the existence of correlation positive correlation was statistically significant at the level of 0.05between the breadth each of the (shoulder, chest) and the level of achievement for the players at higher levels in tennis and attributed the researcher of this result to the breadth of each of the shoulders and chest contribute player in the balance during the performance also contribute to increasing the length of arm strength and clear that you rotate the upper half of the body on the longitudinal axis of the processing to the player hit the ball.

The results of this study agree with results of previous studies, which indicated that the breadth of shoulders, chest and breadth of the morphological variables contribute to the level of the performance skills of tennis players [7, 16, 21, 25].

The results in Table 2 the existence of correlation positive correlation was statistically significant at the level of 0.05 between the Circumference each of the (upper arm, forearm, chest, leg) and the level of achievement for the players at higher levels in tennis, while no correlation is statistically significant at the level 0.05 between the Circumference each of the (abdomen, thigh) and the level of achievement for the players at higher levels in tennis, attributed the researcher of this result to the Circumference each of the (upper arm, forearm, chest, leg) is an indicator of the strength and ability to the muscle of the arm, chest and legs in general and that is the

Table 1: Mean, standard deviation, median and skewness for anthropometric variables and the level of achievement (n=10)

	Measurement	UM	Mean	SD±	Media	Skewness
1-	Weight	Kg	66.20	9.98	65.50	0.265
2-	Height	Cm	171.10	8.22	171.00	0.124
3-	Upper limb length	Cm	75.70	5.90	77.00	0.402
4-	Arm length	Cm	84.20	6.59	83.00	1.086
5-	Upper arm length	Cm	34.80	3.457	35.00	0.171
6-	Forearm length	Cm	30.20	3.22	30.00	1.092
7-	Palm length	Cm	19.20	0.918	19.00	1.546
8-	Lower limp length	Cm	96.90	4.067	97.00	0.412
9-	Thigh length	Cm	48.80	4.022	47.50	0.759
10-	Leg length	Cm	43.90	2.55	44.00	0.636
11-	Breadth shoulders	Cm	42.80	3.489	43.00	0.340
12-	Breadth chest	Cm	42.50	5.797	41.50	0.599
13-	Upper arm circumference	Cm	27.20	5.473	28.00	0.471
14-	Forearm circumference	Cm	27.20	4.709	28.50	0.707
15-	Chest circumference	Cm	92.00	8.11	92.50	0.355
16-	Abdomen circumference	Cm	83.50	7.947	83.50	0.436
17-	Thigh circumference	Cm	57.70	5.697	59.50	1.337
18-	Leg circumference	Cm	35.30	6.481	38.00	1.473
19-	At the brachial muscle	Mm	13.681	3.175	12.585	1.15
20-	Axillary line at the East	Mm	13.415	4.112	13.33	0.249
21-	Skin at the chest	Mm	15.633	3.400	15.835	0.357
22-	Bottom of the blade bone	Mm	15.591	5.655	14.335	0.595
23-	When the abdomen	Mm	19.10	5.391	19.16	0.368
24-	Top iliac	Mm	18.60	4.655	19.66	0.442
25-	At mid-thigh	Mm	18.66	5.161	17.165	1.292
26-	At medial line of the leg	Mm	14.167	2.994	12.835	1.050
27-	The level of achievement	points	6388.70	3424.4	5328.0	0.903

Table 2: Correlation between morphological variables and the level of achievement (n=10)

	Measurement	UM	CC	LS
1-	Weight	Kg	0.606 *	SS
2-	Height	Cm	0.629 *	SS
3-	Upper limb length	Cm	0.637 *	SS
4-	Arm length	Cm	0.643 *	SS
5-	Upper arm length	Cm	0.609 *	SS
6-	Forearm length	Cm	0.653 *	SS
7-	Palm length	Cm	0.693 *	SS
8-	Lower limp length	Cm	0.131	NS
9-	Thigh length	Cm	0.147	NS
10-	Leg length	Cm	0.622 *	SS
11-	Breadth shoulders	Cm	0.634 *	SS
12-	Breadth chest	Cm	0.644 *	SS
13-	Upper arm circumference	Cm	0.634 *	SS
14-	Forearm circumference	Cm	0.699 *	SS
15-	Chest circumference	Cm	0.622 *	SS
16-	Abdomen circumference	Cm	0.432	NS
17-	Thigh circumference	Cm	0.493	NS
18-	Leg circumference	Cm	0.620*	SS
19-	At the brachial muscle	Mm	-0.105	NS
20-	Axillary line at the East	Mm	-0.274	NS
21-	Skin at the chest	Mm	-0.185	NS
22-	Bottom of the blade bone	Mm	-0.031	NS
23-	When the abdomen	Mm	-0.191	NS
24-	Top iliac	Mm	-0.266	NS
25-	At mid-thigh	Mm	-0.024	NS
26-	At medial line of the leg	Mm	-0.183	NS

* R table value on $p\#0.05 = 0.602$ ** R table value on $p\#0.01 = 0.735$

Note. CC=The correlation coefficient; LS=The level of significance; SS=Statistically significant; NS=No statistically sign

cornerstone upon which the player in the performance of strikes and movements of the feet required by the sport of tennis, the Circumference of the chest is an indication of the efficiency of the respiratory system, which in turn leads to late-onset fatigue and then the ability to maintain the level of performance during the games which may impact positively on the level of achievement of the player during the tournament.

The variables morphological following the circumference each of the (chest, leg) of the variables contributing to the level of the performance skills of tennis and the circumference of the leg is an important indicator of the strength of the muscles of the legs and that is the cornerstone of the movements of the tennis player in the performance strikes the long side as it is an important variable for maintaining the balance during the performance,and the circumference of the chest is an indication of the skin periodic breathing as an increase in the circumference of the chest mean breadth of the rib cage and the large size of the lungs, allowing the player to increase the size and efficiency of breathing and maximum oxygen consumption and thus a player can repeat the performance strikes the same efficiency and effectiveness throughout the game [16].

The results in Table 2 to a correlation inverse is statistically significant at the level of 0.05 between the thickness of skin folds each of the (muscle with three heads of the brachial, axillary line East, chest, bottom of the blade bone, abdomen, iliac higher, mid-thigh, above the line medial leg) and the level of achievement for the players at higher levels in tennis, attributed the researcher of this result is that the nature of performance in the sport of tennis is characterized by speed, strength, agility, flexibility and the use of movements of the arms and torso intensively all this performance requires the player to be on the degree of High consistency of the physical and does not contain the body of the player high or higher than the limit of fat.

The consistent results of this study with the indication by the results of multiple studies demonstrated an inverse relationship significant between the amount of fat and performance in sports activity the higher the percentage of fat in the body's lack of performance of the individual sports and this is because all the activities required to move the body either vertically or horizontally during play[1].There are inverse association between the percentage of body fat and physical fitness, it means there is fat in an effort that the individual may say, what to eat and the proportion of foods has become more than the amount of the activity[15].She also noted the results of a previous study to the existence of an inverse

relationship between the percentage of fat and the level of performance in tennis, where the weight of fat if exceeded the allowable limit of 12-16% in the body obstructs the progress of the performance level of the player, that when available the proportion of fat suitable for players Tennis can reach high levels[21].

CONCLUSION

The Researcher Concludes the Following:

Ϲ A correlation positive correlation was statistically significant between body weight and the length each of the (total height, upper limb, arm, upper arm, forearm, palm, leg) and breadth each of the (shoulders, chest) and the circumference each of the (upper arm, forearm, chest, leg) and the level of achievement for the players at higher levels in tennis.

Ϲ A correlation inverse is not statistically significant between the thickness of skin folds each of the (muscle with three heads of the brachial, axillary line East, chest, the bottom blade bone, abdomen, higher iliac, mid-thigh, above the line medial leg) and the level of achievement for the players at higher levels in of tennis.

Recommendation
The Researcher Recommends the Following:

Ϲ Anthropometric variables should be among the bases of selecting Men tennis players, especially for the national team.

Ϲ Similar studies in other aspects (skills - physiological - psychological) associated with the level of achievement of higher levels players in tennis.

Ϲ Performing similar studies using inclined circulation to validate these results.

Ϲ The need to customize the card for the morphological measurements (anthropometric) for tennis players, taking into account what may happen upon through periodic follow-up.

Ϲ Performing comparative studies for men tennis players in Egypt and other countries with higher levels in tennis using anthropometric variables.

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