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### **THE EFFECTS OF SOME ANTHROPOMETRICS ELEMENTS ON THE WORLD RANKING OF 32 TOP WOMEN TABLE TENNIS PLAYERS IN ATHENS' 2004 OLYMPIC GAMES**

#### **Abstract**

*This study aims to examine the impact of some anthropometrics elements of 32 top Women Table Tennis Players in Athens' 2004 Olympic Games.*

*Anthropometrics has been considered as the most influential factors of Talent Identification in different sports. Thus, the researcher is attempting to find out whether anthropometrics could be applied as the basis for recognizing talented table tennis players as well.*

*In this correlational research, the anthropometric characteristics of 32 top women table tennis players who participated in Athens' 2004 Olympic Games, were analyzed to indicate any significant correlation with their world ranking.*

*The data including the measurement of some anthropometric features such as weight, height, body mass index, etc. of the above mentioned qualified players were collected from ITTF website. These data were analyzed through correlational statistics, and in order to examine the correlation of the variables, Spearman's Rank Order Correlation Coefficient was applied.*

#### *Results:*

*Statistical analysis indicated the mean values of height, weight, and body mass index as 165.45cm, 57.64kg, and 21 respectively.*

*The correlation coefficient between height and world ranking of the subjects was calculated as  $r=0.217$  ( $p=0.332 > \alpha=0.05$ ), which demonstrates no significant relation between the mentioned variables.*

*Furthermore, the correlation coefficient of weight and the world ranking of the players was  $r=0.180$  ( $p=0.422 > \alpha=0.05$ ), which does not suggest a meaningful value, either.*

*Finally, the correlation coefficient between body mass index and world ranking came to as  $r=0.189$  ( $p=0.412 > \alpha=0.05$ ), which is not significant as well.*

**Key words:** *Talent Identification, Antropometric elements, Body Mass Index, Women Table Tennis Players*

#### **1. Introduction**

Talent Identification (TID) is both an Art and Science involving a complex blend of scientific knowledge and assessment, alongside coaching art. The scientific approach of identifying talent involves a series of rigorous assessments and filters to detect individuals that have 'higher probability' for podium success (TI, 2007).

Talent Identification in sports is a process in which individuals, who are more likely to prosper in a given sport, are identified according to the results of the tests of specific factors (Hadavi, 2000).

According to some studies, researchers categorize the effective characteristics in talent identification into six groups: 1. *physiological* and *bio-mechanical* 2. *anthropometric*, 3. *biological* 4. *genetic* 5. *psychological* 6. *sociological* (Thomson 1992, Hanson 1989, Bevis 1985, Ward 1981).

Limoochi (1996) reported that the main factors that are considered in selecting talented players in Beijing Sport School are *anthropometrics, psychological* and *physical-motor* factors.

Jurgen Kozel (1996) describes talent as “extremely complex attribute, genetically determined, complicated in structure and subject to environmental conditions.” (Stojanovic, 1997)

Limoochi (2005) in her report from China Table Tennis Association claimed that in China 'height of the parents' was one of the important factors in choosing talented players, that is, they required that the mothers' height be between 163 to 168, and fathers' height be between 175 to 180.

This study aims to examine the impact of some anthropometric elements of 32 top Women Table Tennis Players in Athens' 2004 Olympic Games.

Anthropometric elements have been considered as the most influential factors of Talent Identification in different sports. Thus, the researcher is attempting to find out whether anthropometrics could be applied as the basis for recognizing talented table tennis players as well.

## 2. Method and Procedures

In this correlational research, the anthropometric characteristics of 32 top women table tennis players who participated in Athens' 2004 Olympic Games were analyzed to indicate any significant correlation with their world ranking.

The data including the measurement of some anthropometric features such as weight, height, and body mass index of the above mentioned qualified players were collected from ITTF website.

These data were analyzed through correlational statistics, and in order to examine the correlation of the variables, Pearson Correlation was applied.

**Table 1.** Descriptive Statistics of Rank, height, and Weight

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Rank	32	1.00	33.00	15.5919	10.02691	100.539
Valid N	22					
Height	32	155.00	176.00	165.4545	5.01167	25.117
Valid N	22					
Weight	32	47.00	69.00	57.6364	5.70334	32.528
Valid N	22					

## 3. Results

Statistical analysis indicated the mean values of *height, weight, and body mass index* as 165.45cm, 57.64kg, and 21 respectively.

**Table 2:** Correlations

	Height	Weight	Body Mass Index
<b>Rank</b> Pearson Correlation	.217	.180	.189
Sig. (2-tailed)	.332	.422	.412

The correlation coefficient between *height* and *world ranking* of the subjects was calculated as  $r=0.217$  ( $p=0.332 > \alpha=0.05$ ), which demonstrates no significant relation between the mentioned variables.

Furthermore, the correlation coefficient of *weight* and the *world ranking* of the players was  $r=0.180$  ( $p=0.422 > \alpha=0.05$ ), which does not suggest a meaningful value, either.

Finally, the correlation coefficient between *body mass index* and *world ranking* came to as  $r=0.189(p=0.412 > \alpha=0.05)$ , which is not significant as well.

**Table 3.** Correlations

		Rank	Height	Weight
<b>Rank</b>	Pearson Correlation	1	0.217	0.180
	Sig. (2-tailed)		0.332	0.422
	Sum of Squares and Cross-Products	2111.318	229.091	216.727
	Covariance	100.539	10.909	10.320
	N	22	22	22
<b>Height</b>	Pearson Correlation	0.217	1	0.626**
	Sig. (2-tailed)	0.332		0.002
	Sum of Squares and Cross-Products	229.091	527.455	375.636
	Covariance	10.909	25.117	17.887
	N	22	22	22
<b>Weight</b>	Pearson Correlation	0.180	0.626**	1
	Sig. (2-tailed)	0.422	0.002	
	Sum of Squares and Cross-Products	216.727	375.636	683.091
	Covariance	10.320	17.887	32.528
	N	22	22	22

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

However, even though the study results did not suggest any significant correlation between *height*, *weight*, and *body mass index* of the mentioned subjects and their *championship rank*, it was noticed that there was a meaningful relation between *height* and *weight* considering the variables' values as  $r=0.626 (p=0.002 < \alpha=0.05)$ .

#### 4. Conclusion

The findings of this study indicated no relation between the three anthropometric factors of height, weight, and body mass index of the 32 top Women Table Tennis Players in Athens' 2004 Olympic Games and their world ranking. This is quite contrary to the results which were achieved by another research by Limoochi (2005). There, it was concluded that height and weight, according to the international coaches' opinions, were the most important anthropometric elements in Talent Identification.

On the other hand, agility and coordination play an effective role in table tennis. Aule & Loko (1983) advocated that agility and coordination of the shorter athletes are more than the taller ones.

Of course, the results of the present research cannot be generalized to all different groups of players and also should not be accounted for other anthropometric characteristics. Similar studies have to be conducted upon males as well as other female groups. Besides, perhaps the study of other anthropometric factors such as height in sitting position, length of stretched arm, width of pelvis, etc. would result in significant correlation with the world ranking.

#### 5. Acknowledgement

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