

11th ICHPER • SD
Europe Regional
Congress & Exposition
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ICHPER-SD
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The 11th ICHPER • SD Europe Regional Congress & Exposition

Kervansaray Hotel, Lara, Antalya-TURKEY
April 22-24, 2009

Integration of Contemporary Sports Disciplines in Europe

CONGRESS PROCEEDINGS

11. Uluslararası Sağlık, Beden Eğitimi, Rekreasyon, Spor ve Dans Konseyi Avrupa Kongresi ve Fuarı Sergisi

Kervansaray Otel, Lara, Antalya-TURKİYE
22-24 Nisan 2009

Avrupa'da Çağdaş Spor Disiplinlerinin Entegrasyonu

11. ICHPER•SD ERCE'2009

Congress Scientific Programme

April 22, 2009 Wednesday

08.00 - 11.00	Registration
11.00 - 12.30	Opening - Opening Speaks
	The State of ICHPER•SD: Structures for New Operation and Challenges
	Dr. Dong Ja Yang (President, ICHPER•SD)
	Dr. Serap İnal (President of Organization Committee, ICHPER•SD Europe Region Vice-President
12.30 - 13.30	Lunch
13.30 - 13.50	Keynote Speaker
	Development of Sports Sciences in Turkey
13.50 - 14.10	Keynote Speaker
	Achieving Independence through innovatine Recreation Tools - Dr. Glen Roswall
14.10 - 14.25	Coffee Break
14.25 - 15.25	Panel I - Coaching and Training
	Football Training Education Process in Turkey and UEFA Trainer Education
	Models - Asaf Özkara
	Effects of Coaching Education to the Outcomes of Traininig and Coaching - Ersun Yanal
	The women's Football in the world and Turkiye: Today and Future - Dr. Ali Kızılet
	Sociological, Economical and Sportive Effects of Women's Football - Dr. Erden Or
15.25 - 16.00	Panel II - Scientific Research in Sports Sciences
	How to Prevent Bias and Errors in Health Research - Dr. Osman Hayran
	Research Ethics - Dr. Sadi Kurdak
16.00 - 16.15	Coffee Break

16.15 - 17.15 Round Table - Adapted Sports in Europe

Paralympic Education in Europa - Dr. Martin Kudlacek

Strategies for Effective Inclusion of Students with Disabilities in Physcial

Education- Dr. Aija Kalavina

Students - Volunteers and SO - is Another Chance - Dr. Hanna Volkova

Psychological Determinants in Elite Athletes with Disability: Implications

Over Performance - Dr. Jose Pedro Ferreira

Game Efficiency of Elite Wheelchair Basketball Players Representing Different

Functional Levels - Dr. Bartoz Molik

17.30 - 19.00 Verbal Presantation

Poster Presantation

19.00 - 20.30 Opening Cocktail

April 23, 2009 Thursday /

09.00 - 09.20 Keynote Speaker

The Search for Happiness and A Better Quality of Life: The role of ICHPER•SD

Professionals in the 21st Century - Dr. Dong Ja Yang (President, ICHPER•SD)

09.20 - 09.40 Keynote Speaker

The Role of Physical Education and Sports toward Olympics 2012

Dr. Hasan Kasap (Past President of ICHPER•SD Europe Region)

09.40 - 09.55 Coffee Break

09.55 - 10.55 Panel III - Adapted Physical Activity (APA) and Adapted Physical Education (APE)

Moderator :Dr. Glen Roswall

IFAPA and Conceptual View to APA - APE in Universal Dimensions - Dr. Dilara Özer

EUFAPA Needs and Competencies in APA in Europe - Dr. Martin Kudlacek

University APA Preparations: Special Olmpics Curriculum and Inclusion Aspects - Dr. Hana Valkova

APA and APE in Turkiye - Dr. Birsen Sirmen

10.55 - 11.55 Panel IV - Athletes Health Care in Sports Competitions and Organization

Moderator : Dr. Mehmet Kurtoğlu

Health Care Organization in Sports Clubs; a Model of Practice - Dr. Mehmet Kurtoğlu

Health Care Organization of Turkiye Football Federation - Dr. Ömer Taşer

Health Care Organization in Olympic Team - Dr. Emin Ergen

11.55 - 13.00 Lunch

13.00 - 13.20 Keynote Speaker

Major Public Health Trends and Issues: "Implications for ICHPER•SD" - Dr.Mohammad R. Torabi

13.20 - 14.20 Panel V - Global View to Physical Activity

Physical Activity and Quality of Live from Past to Present - Dr. Kamil Özer

Factors Effecting Physical Activity - Dr. Salih Pınar

Activity, Collaboration Between Organizations - Dr. Mehmet Öztürk

What Can be Done for the Promotion of Physical Activity and Organization Models - Dr. Ümit Kesim

Sports as a CommunicationProcess: The "Role of Persuasion" in Increasing Physical Activity - Dr. Melis Oktuğ

14.20 - 14.35 Coffee Break

14.35 - 15.05 Panel VI - Sports Biomechanics

Moderator: Dr. Sedat Muratlı

Optimization of Performance in Sport - Dr. Mark King

Modelling in Sports Biomechanics - Dr. Serdar Arıtan

15.05 - 15.25 Round Table - Projects on Sport Sciences

Strategies for Effective Inclusion of Students with Disabilities in Physical Education - Dr. Aija Kalavina

15.50 - 16.50 Verbal Presentations - Poster Presentations

16.50 - 17.50 Verbal Presentations - Poster Presentations

17.50 - 18.50 Verbal Presentations - Chess Workshop

*09.30 - 12.00 Canoeing Workshop

April 24, 2009 Friday

09.00 - 09.20	Keynote Speaker
	Why We Should Move? - Dr. Kamil Özer
09.20 - 09.40	Keynote Speaker
	The Role of Knowledge Integrators in Sports Sciences - Dr. İlhan Odabaş
09.40 - 09.55	Coffee Break
09.55 - 10.40	Panel VII - Exercises and Fatigue
	Moderator : Dr. Kut Sarpyener
	Fatigue - Dr. Safinaz Yıldız
	Chronic Fatigue Syndrome and Excercise - Dr. Erdem Kaşıkçıoğlu
	Cardiac Problems and Sudden Deats - Dr. Selim İsbir
	Overtraing - Dr. Rüştü Güner
10.40 - 11.50	Panel VIII - Sport and Law
	Competition Low and Sport - Dr. Tamer İnal
	Penal Law Responsibilities Originating from Sports - Dr. Yener Ünver
11.50 - 12.35	Sport and Genetics
	The Story of DNA and its Effects - Dr. Turgay İsbir
	Performance and Genetics - Dr. Gökhan Metin
12.35 - 13.35	Lunch
13.35 - 14.20	Panel IX - Aging 1: Sports and Aging
	Moderator : Dr. Refik Mas, Dr. A. Turan Işık
	Aging and Sport from Antropological Aspect - Dr. İzzet Duyar
	Effect of Sport on Bio-gerontological Changes - Dr. Şerif Akman
	Psychological Determinants of Successful Aging - Dr. Rüveyde Bayraktar
14.20 - 14.35	Coffee Break

14.35 - 15.35 Panel X - Aging II: The Role of Physical Activity in Aging

Physical Activity in Aging and its Risks - Dr. Gülfem Ersöz

WHO: Elderly - Friendly Cities - Dr. Aylin Çiftçi

Perspectives of Non-governmental Organizations to Aging - Dr. Nükhet Mas

The Studies to Promote Physical and Recreational Activities Among Elderly - Dr. Feryal Subaşı

15.35 - 16.20 Panel XI - Peak Performance in Sports

Moderator : Dr. Can İkizler

Relatilionship of Sportive Performance & Psychology - Dr. Şefik Tiryaki

Alternative Approaches to Sportive Performance: Acupuncture, Hypnosis - Dr. Kemal Nuri Özerkan

16.20 - 17.30 Verbal Presentations

17.30 - 19.30 Closing Ceremony

P.1-05

INVESTIGATION OF PHYSICAL, ANTHROPOMETRICS AND SOMATOTYPE CHARACTERISTIC ON UNDER ELITE FEMALE VOLLEYBALL PLAYERS ACCORDING TO PLAYING POSITIONS*

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Cukurova University, School of Physical Education and Sports.

ABSTRACT

The purpose of this study was to investigate body composition, some anthropometrics characteristics and somatometric components of under elite female volleyball players in relation to their different game roles. This study was performed on 101 players playing during 2006-2007 seasons in 2nd and 3rd volleyball leagues, B-C categories of university leagues. The players participated to study were volunteer.

In this study, body height, body weight, extremities length, calibre and skinfold measurement were taken. Somatotype characteristics of players were evaluated by "Heath-Carter" formula, body fat percentages were calculated by "Sloan and Weir" formula. The results of the data were analyzed with SPSS 15.0 package programme. Data were analyzed using Anova and "Tukey" post hoc tests, with significance defined as a p-value %0.05.

No significant statistical differences found between playing positions and ectomorphy, mesomorphy scores of the players. Conversely, significant statistical differences were found between playing position and endomorphy scores of the players. Body fat percentage values of setters different from centres ($p<0,05$). No significant differences were found among the players of different playing positions at other body fat values.

In conclusion, it was found that some physical and somatometric components were different among the players of different playing position. According to us; physical and anthropometrics and somatotype examination before sports participation or direction to playing position are beneficial for related persons to take optimum performance from players.

Key Words: Volleyball, Playing position, Somatotype, Anthropometry.

INTRODUCTION

In Volleyball, like the other sports, anthropometrics characteristics and somatometric components are directly related players performance. All sports activities have own physical requirements. Therefore, physical, anthropometrics and somatotype measurements are very important to define compatibility of players for the sports (1).

These physical structures, anthropometrics characteristics and somatometric components have been shown as quantity and quality by many scientific research in literature (2,3,4,5,6). In volleyball, players are categorized such as spiker, libero, setter, opposite setter and centre (7). All of these players take both individual and collective roles according to their own playing positions during matches. Physical and anthropometrics components are very important as well as technical and tactical abilities to perform the roles perfectly. At this point, some researches have shown that players at various position have different physical, anthropometrics and somatometric characteristic (8,9).

The purpose of this study was to investigate body composition, some anthropometrics characteristics and somatometric components of under elite female volleyball players in relation to their different game roles.

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*Summarized From Thesis/Cukurva University, Institute of Medical Sciences.

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MATERIALS AND METHODS

This study was performed on 101 players playing during 2006-2007 seasons in 2nd-3rd volleyball leagues and B-C categories of university leagues. In this study non-randomize sampling was used. The players participated to study were volunteer.

In this study, body height, body weight, extremities length, calibre and skinfold measurement were taken. For height measuring was used a portable stadiometer measuring up to 210 cm. A digital weighing machine was used to measure weight. Skinfold measures were taken by the Holtain skinfold calliper. Anthropometric distances were measured using a set of ***Holtain anthropometric*** calipers (Harpenden type). Somatotype characteristics of players were evaluated by Heath-Carter Formula(10), body fat percentages were calculated by Sloan and Weir Formula(11).

The results of the data were analyzed with SPSS 15.0 package programme (12). Initially analysis of the result was carried out by descriptive statistics of the physical, anthropometric and somatotype characteristics of the players.

Data were analyzed using Anova, with multiple comparison tests (Tukey post hoc test) to compare the means between and among different players and playing position groups. Significance was defined as a p-value %0.05.

RESULTS

The players were 101 under elite volleyball players, (aged 18.45±2.39 years) participating in the 2006-2007 seasons of the various Turkish volleyball leagues. The players had been playing volleyball for 2 years (minimum), average training ages were 4,43±2,36.

Table 1. Physical, anthropometric and somatometric values of players

Parameters	n	Min	Max	X	Sd
Ages	101	16	25	18,45	±2,39
Training ages	101	2	12	4,43	±2,36
Height (cm)	101	158,80	187,30	170,08	±6,45
Weight (kg)	101	43,48	77,91	58,06	±7,05
B.M.I (kg/m2)	101	16,41	25,90	20,03	±1,82
Triceps Sf. (cm.)	101	,72	2,85	1,67	±,41
Subscapula Sf. (cm)	101	,61	3,22	1,65	±,41
Suprailiac Sf. (cm)	101	,61	2,71	1,44	±,38
Calf Sf .(cm)	101	1,00	3,22	1,76	±,40
Femur bicondular calib.(cm)	101	7,10	11,50	9,24	±,93
Humerus bicond. calib.(cm)	101	5,00	8,00	6,11	±,66
Biceps calibre (cm)	101	19,60	33,15	26,60	±2,41
Calf calibre (cm)	101	27,00	44,40	34,68	±2,94
Endomorphic comp.	101	,82	1,13	,96	±,06
Mesomorphic comp.	101	,29	6,68	3,01	±1,55
Ectomorphic comp.	101	,99	6,10	3,64	±1,01
Height weight ratio	101	40,40	47,38	44,01	±1,38
Body fat percentage	101	10,98	12,07	11,40	±,23
Body fat weight (kg)	101	4,85	9,26	6,63	±,90
Lean body fat (kg)	101	38,61	68,79	51,42	±6,16

In this study, the players were divided into four groups related to playing position; 21 setters, 54 spikers, 22 centres and 4 liberos. There were no significant statistical differences between the playing positions and some body size and skinfold measurement such as age, training age, height, weight and BMI.

On the other hand, there were no significant statistical differences between the playing positions and mesomorphy ectomorphy scores. Conversely, significant

statistical differences were found between playing positions and endomorphic scores of players. The differences were between setters and centres endomorphic scores. Related to these endomorphic differences, triceps and suprailiac skinfold measurement and body fat percentage were different between setters and centres. ($p<0,05$)

Table 2. Comparison of physical, anthropometrics and somatometric values of playing positions

Playing positions	Setters (n:21)		Spikers (n:54)		Centres(n:22)		Liberos (n:4)			
	X	SS	X	SS	X	SS	X	SS	F	p
Ages	18,19	2,61	18,29	2,20	18,90	2,68	19,50	2,38	,67	,57
Training ages	4,09	2,60	4,35	2,24	4,95	2,57	4,50	1,91	,51	,67
Height (cm)	170,2	6,22	170,0	6,44	169,9	7,45	170,2	2,63	,007	,99
Weight (kg)	58,67	8,10	57,90	7,32	57,44	5,78	60,33	5,08	,25	,86
B.M.İ (kg/m2)	20,20	2,14	19,96	1,76	19,90	1,77	20,80	1,35	,35	,78
Triceps Sf. (cm.)	1,84	,51	1,65	,39	1,50	,28	2,02	,42	3,66	,015*
Subscapula Sf. (cm)	1,75	,54	1,63	,40	1,53	,24	2,09	,22	2,63	,054
Suprailiac Sf. (cm)	1,62	,49	1,41	,31	1,31	,38	1,57	,45	2,70	,050*
Calf Sf .(cm)	1,90	,55	1,71	,32	1,71	,41	1,90	,33	1,39	,248
Femur bicondular calib.(cm)	9,25	,93	9,20	,95	9,26	,92	9,61	1,07	,23	,873
Humerus bicond. calib.(cm)	6,03	,63	6,05	,66	6,23	,63	6,80	,74	2,00	,118
Biceps calibre (cm)	26,74	2,92	26,68	2,27	26,07	1,90	27,52	4,20	,57	,631
Calf calibre (cm)	34,95	3,30	34,60	2,86	34,12	2,21	37,50	4,71	1,59	,196
Endomorphic comp.	,98	,07	,95	,05	,93	,04	1,01	,06	3,70	,014*
Mesomorphic comp.	2,94	1,41	2,94	1,47	2,99	1,82	4,33	1,67	1,01	,390
Ectomorphic comp.	3,57	1,13	3,67	,93	3,70	1,18	3,22	,61	,29	,830
Height weight ratio	43,93	1,54	44,06	1,27	44,10	1,62	43,44	,84	,29	,830

Body fat percentage	11,52	,29	11,38	,20	11,30	,18	11,57	,25	4,30	,007*
Body fat weight (kg)	6,78	1,08	6,60	,92	6,49	,70	6,98	,65	,56	,640
Lean body fat (kg)	51,89	7,02	51,30	6,41	50,94	5,09	53,34	4,44	,21	,884

*p<0,05

Table 3. Results of post hoc "Tukey"

	Setters (n:21)		Centres (n:22)		
Parameters	X	SS	X	SS	p
Triceps Sf. (cm.)	1,84	,51	1,50	,28	,031**
Suprailiac Sf. (cm)	1,62	,49	1,31	,38	,044**
Endomorphy scores	,98	,07	,93	,04	,029**
Body fat percentage	11,52	,29	11,30	,18	,009**

** (Post Hoc Tukey) (p<0,05)

DISCUSSION

All sports activities have own physical, anthropometric and somatometric requirements. Many researches have shown that physical, anthropometrics and somatometric characteristics are different in various sports. In addition, there is a paucity research about physical structure and somatotype of volleyball players and their playing positions in the literature. In the literature some researches have shown that physical, anthropometrics and somatometric characteristics of volleyball players are different from each other according to play position. In Gualdi and Zaccagni's study somatotype components of setters are endomorphic;3,1±0,8, mesomorphic; 3,6±0,1, ectomorphic 2,5±1,0. somatotype components of spikers were endomorphic;3,0±0,9, mesomorphic; 3,5±1,0 , ectomorphic 2,8±0,9. somatotype components of centres were endomorphic;2,8±0,8, mesomorphic; 3,1±0,9, ectomorphic 3,1±0,7. Significant statistical differences (p<.01, p<.05) were found among players of different playing positions and difference were between somatotype components and body fat values of setters and centres players (8).

Also, Grigoris and Malousaris(13) found statistical differences among physical, antropometric and somatometric characteristics of players according to playing positions. In this study somatotype components of setters were endomorphic;3.7±0.7, mesomorphic; 3,0±1,1, ectomorphic 2,7±1,1. somatotype components of spikers are endomorphic;3,6±0.6, mesomorphic; 3,3±1.1 , ectomorphic 2,4±0,9. somatotype components of centres were endomorphic;3.6±0,7, mesomorphic; 2.7±1.0, ectomorphic 3,1±0,9 and significant statistical differences (p<.05) were found among players of different playing positions and difference were between all somatotype somatotype components of setters and centres players(13). Another research made

by Duncan and Wood has shown that significant statistical differences ($p<.01$, $p<.05$) were among players of different playing positions and difference were between ectomorphic somatotype values of setters and centres players(9).

Similarly to literature, in our study significant statistical differences ($p<.05$) were found among the players of different playing positions and difference were between endomorphic somatotype and body fat values of setters and centres players. The authors agree with some different technical and tactical demand on players in different playing positions.

In conclusion, some studies in literature and this study have shown that physical, anthropometrics and somatometric characteristics are different among playing position in volleyball. The great differences were between setters and centres. According to us; physical, anthropometrics and somatotype examination before sports participation or direction to playing position are beneficial for related persons to take optimum performance from players.

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