

Considerations on the constitutional type of the central hitter in volleyball

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Abstract

The last major volleyball men competition was within the London 2012 Summer Olympics, which gathered 12 volleyball teams thoroughly selected during trial tournaments. On this occasion, they recorded the evolution of all participants and supplied volleyball methodologists and technicians with data on the various aspects of volleyball game (physical, technical, and tactical). We aimed at establishing the defining elements of a central hitter parameter dynamics in this competition. The subjects of our research were central hitters of all the participating volleyball teams. We also identified central hitters of the "Universitatea" Timișoara men volleyball team. The mean central hitter is, according to the data collected by the specialists of the London 2012 Summer Olympics, 27.93 years old and 203.8 cm tall, and weighs 94 kg. The central hitters of the volleyball team of Russia had particular values in all studied parameters: this position is relevant for the potential of the team and for the high level of the game. The mean values of the studied parameters are relevant in establishing the final hierarchy (Russia, Brazil, and Italy). We found obvious differences between the mean values of these parameters in the men volleyball players participating in the London 2012 Summer Olympics and the men volleyball players of the "Universitatea" Timișoara volleyball team.

Key words: *central hitter, volleyball player, constitutional type*

Rezumat

Ultima competiție majoră în voleiul masculin s-a desfășurat în cadrul Jocurilor Olimpice de la Londra "2012", reunind la start 12 echipe calificate în urma unei trieri severe impuse de turneele de calificare. Cu acest prilej, s-au înregistrat evoluțiile jucătorilor din toate echipele participante și dau ocazia metodiștilor și tehnicienilor din volei să analizeze diferite aspecte ce vizează specificul jocului din punct de vedere fizic, tehnic și tactic. Am urmărit stabilirea elementelor definitorii ale trăgătorului de zona 3 în dinamica parametrilor urmăriți în competiția pe care am avut-o în vedere. Subiecții cercetării au fost trăgătorii de zona 3 din toate echipele participante în această competiție. Totodată, am identificat trăgătorii de zona 3 din echipa de volei masculin Universitatea Timișoara. Profilul mediu al trăgătorului de zona 3 rezultat în urma desfășurării Jocurilor Olimpice este de 27,93 ani, înălțimea 203,8 cm și greutatea 94 kg. Trăgătorii de zona 3 din echipa Rusiei prezintă valori deosebite la toți parametrii urmăriți, acest post specializat fiind edificator pentru potențialul echipei și pentru exprimarea în joc la nivel înalt.

Valorile medii ale parametrilor urmăriți sunt relevante pentru stabilirea ierarhiei finale (Rusia, Brazilia, Italia).

Încercând o comparație a valorilor medii ale parametrilor urmăriți la echipele participante la Jocurile Olimpice 2012 și la echipa de volei masculin Universitatea Timișoara, constatăm diferențe evidente.

Cuvinte cheie: *trăgător zona 3, jucător volei, tip constituțional.*

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Introduction

Volleyball has known a strong development of both content and structure parameters, and of the level of psychic, bio-motor, and technical and tactical requirements from the volleyball players – all of this doubled by an expansion of the area where volleyball is played and of the increasing popularity of this game worldwide (over 180 countries affiliated to the Volleyball International Federation and 100,000,000 players registered).(1)

The features of different national volleyball representatives are also the features of the worldwide volleyball. Increased height, special attack force and block-based defence promoted by the European volleyball school together with varied and quick attack, acrobatic and efficient actions of the 2nd line promoted by the Asian school of volleyball are strategic attributes of contemporary volleyball.

The need to know the features of current volleyball, its developmental trends and progress elements are main requirements that should guide a coach on a constant basis. The last major volleyball competitions pointed out the strict specialisation of the players in certain positions in both men and women. This has led to individualities that mark the teams' game and are decisive in the playing of a match.(2)

Goal

The last major volleyball men competition was within the London 2012 Summer Olympics, which gathered 12 volleyball teams thoroughly selected during trial tournaments. On this occasion, they recorded the evolution of all participants and supplied volleyball methodologists and technicians with data on the various aspects of volleyball game (physical, technical, and tactical). (3)

We aimed at establishing the defining elements of a central hitter parameter dynamics in this competition.

The broadcasted matches and the data on the site of the Volleyball International Federation allowed us to record data and information that we systematised, processed and presented in this paper in a differentiated, scientific, personal and original way – in a modern, authentic approach.

Based on the data obtained, we established a model of the central hitter monitoring certain parameters that need to be taken into account in the selection of volleyball players in different positions and efficiency areas. Our aim was to see if the values of the parameters in central hitters were determining for the results of their teams and for the final hierarchy in the competition of 2012.

Material and Methods

We studied bibliographical sources on the topic to be able to clarify all aspects related to central hitters.(4)

- *The statistical-mathematical analysis*

In analysing the data, we used the following statistical formulas:

a) Arithmetic mean (\bar{X}):

$$\bar{X} = \frac{\sum x}{n}$$

b) Span (W):

$$W = X_{MAX} - X_{MIN}$$

- *The graphic representation*

Research was carried out during the Men Volleyball tournament within the London 2012 Summer Olympics.

The central hitters of all the participants in the competition were the subjects of our research.

We also studied the volleyball players of the "Universitatea" Timișoara team who play as central hitters.

Results and Interpretation

Mean parameters of the volleyball teams within the London 2012 Summer Olympics

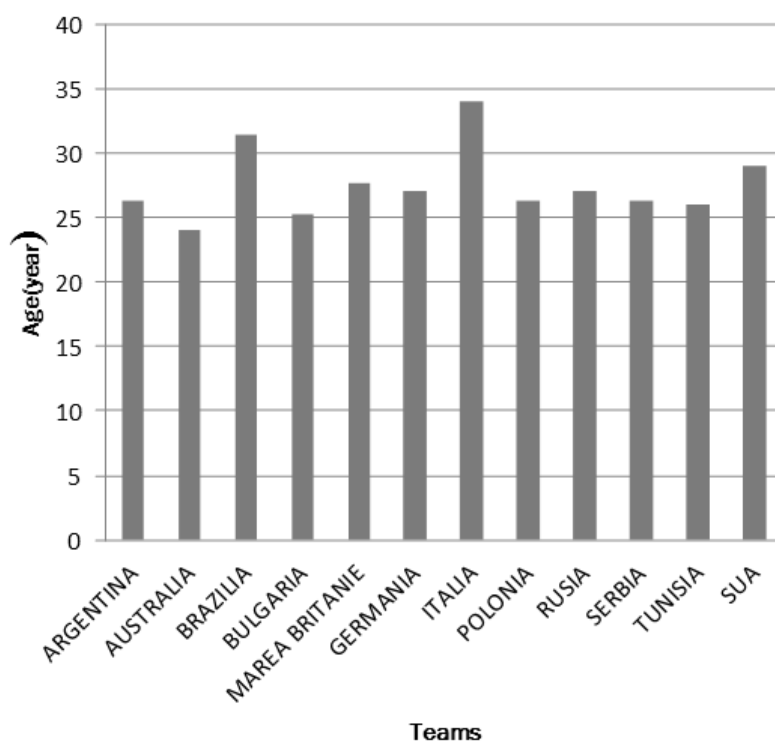


Figure 1. Mean age

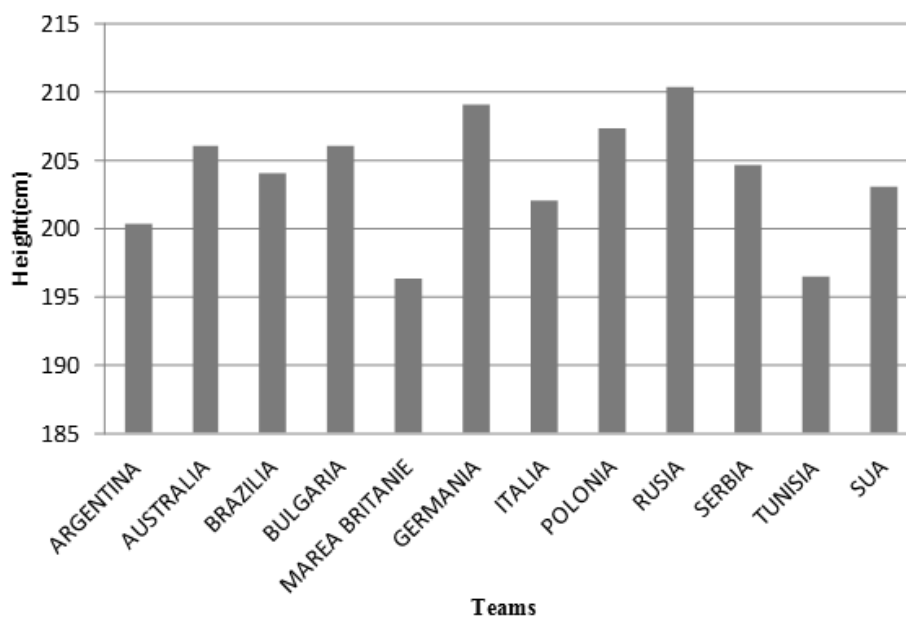


Figure 2. Mean height

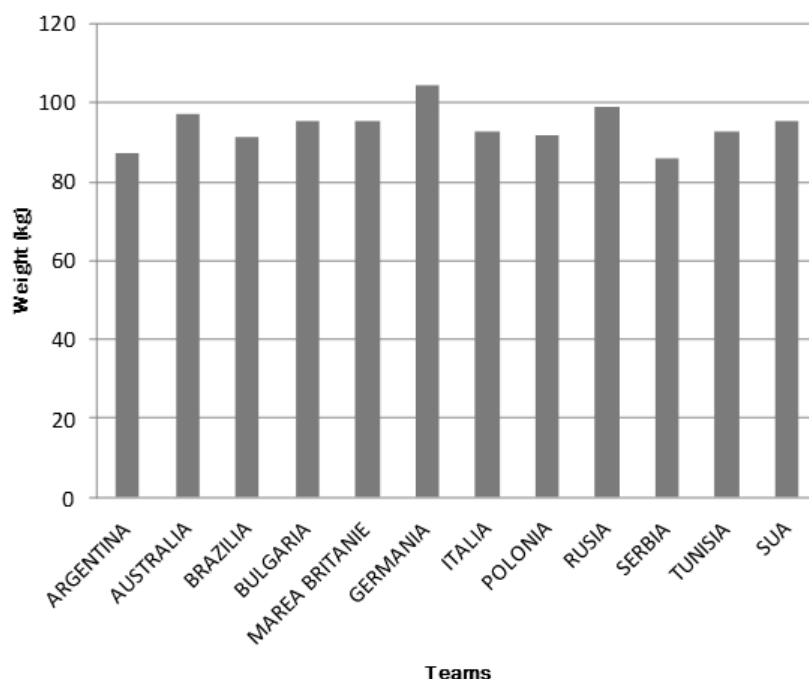


Figure 3. Mean Weight

Comparison of mean values of the studied parameters

Table 1. Comparison of mean values of the studied parameters

Parameter	Olympic Games	“Universitatea” Timișoara
Age (years)	27.54	30.00
Height (cm)	203.8	191.33
Weight (kg)	94.00	95.66

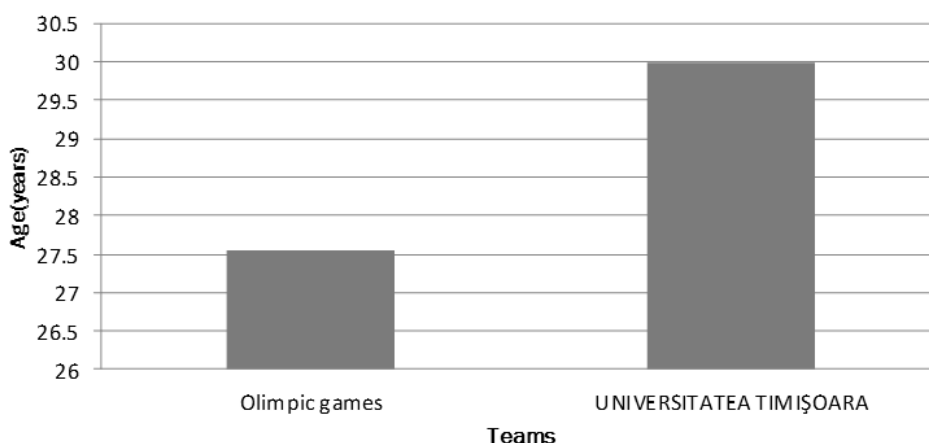


Figure 4. Comparison of mean age of the Olympic Games volleyball players and of the players of “Universitatea” Timișoara

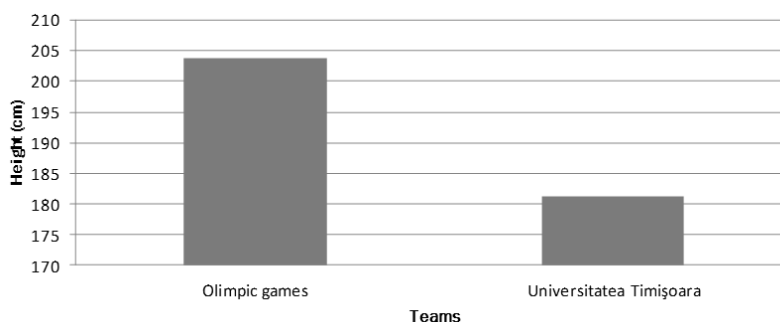


Figure 5. Comparison of mean height of the Olympic Games volleyball players and of the players of “Universitatea” Timișoara

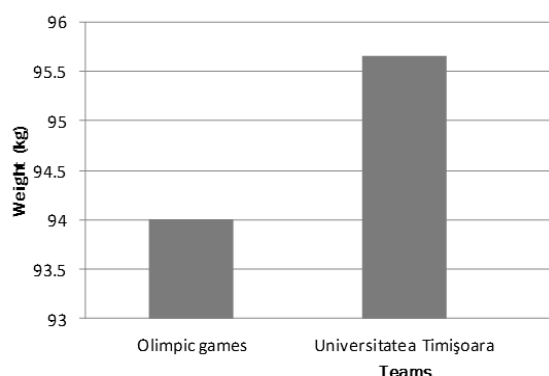


Figure 6. Comparison of mean weight of the Olympic Games volleyball players and of the players of “Universitatea” Timișoara

Conclusions

The research we carried out allows us to draw the following conclusions:

- The mean central hitter of world level is 27.93 years old and 203.8 cm tall, and weighs 94 kg;
- The central hitters of the volleyball team of Russia had particular values in all studied parameters: this position is relevant for the potential of the team and for the high level of the game;
- The mean values of the studied parameters were relevant in establishing the final hierarchy (Russia, Brazil, and Italy);
- We found obvious differences between the mean values of these parameters in the men volleyball players participating in the London 2012 Summer Olympics and the men volleyball players of the “Universitatea” Timișoara volleyball team;
- The conclusion above points to the discrepancy between top volleyball and amateur (student) volleyball;

- The dispersed values in the amateur volleyball team as a result of the span are also the result of the status and expertise of the volleyball players (1st degree teachers, PhD candidate, undergraduate).

In order to make a team’s game more efficient, we suggest:

- Monitoring the somatic parameters from one major competition to another;
- Selecting the volleyball players for this position taking into account the requirements;
- Studying the other factors of sports training (technical, tactical, theoretical, psychological, and biological) for each position taking into account the strict specialisation per game actions and maximum efficiency areas.

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