SECTION 19.

PHYSICAL CULTURE, SPORTS AND PHYSICAL THERAPY

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FEATURES OF THE ANTHROPOMETRIC PARAMETERS OF ELITE FEMALE VOLLEYBALL PLAYERS OF DIFFERENT PLAYING POSITIONS

The significance of maintaining a high fitness level cannot be overstated for elite athletes. This level is determined not only by the proper development of motor skills, aerobic and anaerobic capacities, but also by the alignment of the athlete's anthropometric parameters with specific model characteristics. These model characteristics may vary significantly depending on the various playing positions. However, the potential differences are often overlooked in the majority of academic sources. For instance, our analysis of 14 articles published between 2001 and 2020 revealed that only four of them provide information regarding the anthropometric parameters of volleyball players in different positions. Hence, our research is focused on analyzing the parameters of female volleyball players in different positions to ascertain their model characteristics.

To fulfill the objectives of our research, we conducted an analysis of academic sources containing data on the fundamental anthropometric parameters of elite female volleyball players aged 18-25. The gathered data underwent analysis by the statistical functions of Microsoft Excel 2010. The text presents the arithmetic mean values and standard error of the mean. Group differences were assessed using Student's t-test..

Our findings (Table 1) clearly indicate that the anthropometric parameters of volleyball players in different playing positions [1-4] significantly deviate from the average values of all team players.

Table 1

The main anthropometric characteristics of volleyball players of different playing positions

Parameter	Mean values (n = 21)	Playing position (n = 3-4)				
		Hitters	Centers	Opposites	Setters	Liberos
Height, cm	179.04± 0.79	179.38± 1.15	183.93± 1.39*	180.27± 1.79	175.88± 0.92*	169.03± 0.63*
Weight, kg	71.25± 0.82	73.25± 1.09*	74.75± 1.51*	73.13± 2.58	69.40± 1.77	63.43± 1.19*
BMI, kg/m^2	22.19± 0.14	22.27± 0.07	22.33± 0.13	22.45± 0.95	22.60± 0.46	22.35± 0.45

*Notes: The table is based on the data of different researches [1-4]; BMI - body mass index; * - the difference between the mean values and the parameters of players of a certain position is significant ($p < 0.05$).*

It was found that the body weight of hitters (outside hitters, spikers) was higher than the average weight of team players. The centers (middle blockers, blockers, middle hitters) have the highest height and weight, which significantly differ from the mean values. The height of setters (guards) was lower than the team's average. liberos have the lowest height and weight, which significantly differ from the mean values. At the same time, parameters of opposites (opposite hitters, attackers, forwards) do not differ from the average of the team. It should also be noted that there were no differences in the average body mass index (BMI) of volleyball players compared to BMI values of volleyball players in individual positions.

Summarizing the data, it becomes evident that generalizing the analysis of anthropometric indicators of volleyball players (excluding BMI) without accounting for their playing position is not advisable. Furthermore, it has been established that over 70% of the authors of the analyzed scientific publications merely present average indicators without delving into the variances among volleyball players in different positions.

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