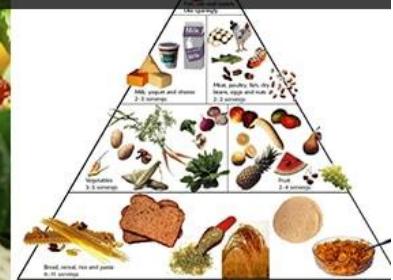




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A comparative analysis of selected anthropometric and physical characteristics between sub-junior volleyball and badminton players

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Abstract

The main purpose of the study was to compare the selected anthropometric and physical parameters between sub junior level Volleyball and Badminton players. The subjects were selected from Tarakeswar Batt Tala club, Hooghly, West Bengal and Naihati Athletic Club, Naihati, North 24 pgs, West Bengal. 20 Volleyball players (male) and 20 Badminton players (male) were randomly selected for this present study. The age of the subjects ranged was sub junior level (14-15 years). Weight, Height, upper limb length, lower limb length were considered as the Anthropometrical variables, weight was measure by weaning machine and others three was measured by Anthropometer (cm). Explosive leg strength was considered as the physical fitness variable which was measured by standing broad jump (mt). Sample t' test was applied to compare the mean and Statistical significance was tested at 0.05 level of confidence. The results of the present study showed that there were significant difference in respect of Height, Upper limb length, Lower limb length, Leg explosive strength and it was also found that no significant differences in respect of Weight of Sub-junior level Volleyball and Badminton players.

Keywords: Height, upper limb length, lower limb length, leg explosive strength

Introduction

Anthropometric measurement and physical fitness component are playing a vital role in almost all games and sports. Anthropometry is the branch of anthropology that is concerned with the measurement of human body. Anthropometric measurements are important tools to assess the nutritional and health status of people depend on their respective energy intakes as anthropometry is the study or assessment of body composition in living people and indicates health and nutritional status. In the field of physical education as well as in games and sports anthropometry plays a great role, that's why the every sports man is anthropometrically and psychologically measured with the anthropometric instruments and questionnaires for selecting sports talents for specific games and sports which is very needed and necessary in developing the particular field. Fitness denotes a person status of physique in relation to its physical achievements. The latest scientific evidence also edict the fact that for internal or physiological soundness physical fitness is necessary. A well-structured volleyball training program can increase explosive power, vertical jump height, stamina and speed and agility around the court. Skill training alone, such as practicing spikes, won't develop the physical traits necessary to play to the athlete's full potential. Volleyball players have exceptional lower body power and perform well in the vertical jump test. Power in the legs is needed to jump explosively off the ground in order to spike, block, set and dive. Badminton is a popular fast-paced indoor sport. To be successful in badminton you need excellent court speed and agility, with a good background of endurance. The fitness training for badminton should focus on speed, agility and endurance, with also strength and flexibility also important. Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules. It has been a part of the official program of the Summer Olympic Games since 1964. Volleyball is essentially a game of transition from one of the above skills to the next, with choreographed team movement between plays on the ball. These team movements are determined by the teams chosen serve receive system, offensive system, coverage system, and defensive system it also

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closely related with physical fitness component and anthropometrical variables.

Statement of the problem

The main purpose of this study is to compare the selected anthropometric and physical parameters between sub junior level volleyball and Badminton players.

Materials and Methods

Total 40 out of which 20 (twenty) Volleyball players from Tarkeswar Batt Tala club Hooghly, West Bengal and 20 (twenty) Badminton players from Naihati Athletic Club, 24 Pgs, West Bengal were selected at randomly. The age of the

subjects ranged from 14-15 years. Weight, Height, upper limb length, lower limb length were considered as a anthropometrical variables, weight was measure by weaning machine and others three was measured by Anthropometer (cm). Explosive leg strength was considered as a physical fitness variable which was measured by standing broad jump (mt). Sample 't' test was applied to compare the mean and Statistical significance was tested at 0.05 level of confidence.

Results and findings

The result of the study has been presented in tabular form as given here under.

Table: Mean, Standard Deviation and "t" test in respect of anthropometric and Physical characteristics of sub junior level volleyball and Badminton players

Sl. No.	Variables	Group	Mean	S. D.	t-ratio
1.	Height	Volleyball players	171.300	9.055	4.042*
		Badminton players	160.900	7.100	
2.	Weight	Volleyball players	53.200	7.251	0.774
		Badminton players	51.600	5.734	
3.	Upper limb length	Volleyball players	75.400	4.977	3.782*
		Badminton players	70.300	3.404	
4.	lower limb length	Volleyball players	89.350	6.217	4.612*
		Badminton players	81.850	3.773	
5.	Explosive leg strength	Volleyball players	2.048	.204	4.461*
		Badminton players	1.809	.126	

Tab 0.05 (38) =2.021, *=Significant

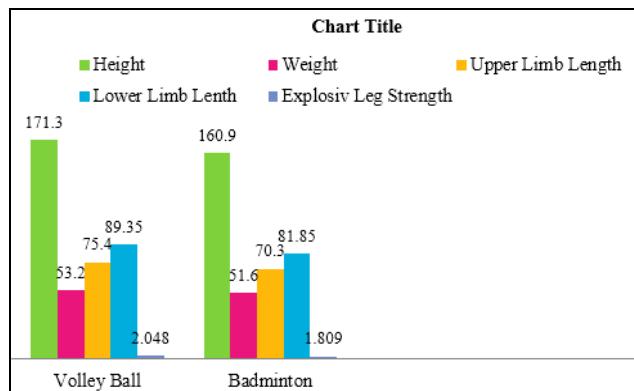
From the above table show mean and standard deviation of height of sub-junior level Volleyball players were 171.300 ± 9.055 , and Badminton players were 160.900 ± 7.100 . It is clearly evidence that the calculated 't' value (4.042) is more than tabulated value $T_{0.05}=2.021$, so we can say that in case of height there were significance difference was found between sub-junior level Volleyball and Badminton players. From the above table show mean and standard deviation of weight of sub-junior level Volleyball players were 53.200 ± 7.251 , and Badminton players were 51.600 ± 5.734 . It is clearly evidence that the calculated 't' value (.774) is less than tabulated value $T_{0.05}=2.021$, so we can say that in case of weight there were no significance difference was found between sub-junior level Volleyball and Badminton players.

The above table show mean and standard deviation of upper limb Length of Volleyball players were 75.400 ± 4.977 , and Badminton players were 70.300 ± 3.404 . It is clearly evidence that the calculated 't' value (3.782) is more than tabulated value $T_{0.05}=2.021$, so we can say that in case of Lower Leg Length there were significance difference was found between sub-junior level Volleyball and Badminton players.

From the above table show mean and standard deviation of lower limb length of Volleyball players were 89.350 ± 6.217 , and Badminton players were 81.850 ± 3.773 . The calculated 't' value (4.612) is more than tabulated value $T_{0.05}=2.021$, so we can say that in case of lower limb length there were significance difference was found between sub-junior level Volleyball and Badminton players.

From the above table show mean and standard deviation of explosive leg strength of sub-junior level Volleyball players were $2.048 \pm .204$, and Badminton players were $1.809 \pm .126$. It is clearly evidence that the calculated 't' value (4.461) is more than tabulated value $T_{0.05}=2.021$, so we

can say that in case of explosive leg strength there were significance difference was found between sub-junior level Volleyball and Badminton players.



Discussion

From the results of the present study it was found that significant difference have been found in respect of Height, Upper limb length, Lower limb length, Leg explosive strength and It was also found that no significant different in respect of Weight of Sub-junior level Volleyball and Badminton players. Height is the predominant consideration for better of Volleyball Players than the Badminton players as because the player has to cross the ball over the net height that is 2.43 mt for boys but in case of Badminton player their proficiency in using net with far below height with racket is important. Leg explosive strength have been found in Volleyball players than the Badminton Players this may due to Volleyball player are to jump always over the net to attack and block from the front line which require greater height and better jumping ability and also for anthropometrically they should longer upper and lower extremities than Badminton players. The skills like higher attack, powerful jumping-serve, attack from the back row and aggressive blocking are now widely used by

Volleyball and Badminton players. All these bring forward greater demand for specific physical fitness and physique of both game players. In case of Weight the study showed the result almost same due to causes that the maximum Volley Ball players are longer in height and they have low quantity of muscles mass like more than the Badminton Players. But Badminton players are shorter in height than the Volleyball players but they have more muscles mass then the Volleyball Players.

Conclusions

It is concluded from the obtained result that

1. Significant difference was found between sub junior level Volleyball and Badminton players in respect of height.
2. Not Significant difference was found between sub junior level Volleyball and Badminton players in respect of weight.
3. Significant difference was found between sub junior level Volleyball and Badminton players in respect of Upper limb length.
4. Significant difference was found between sub junior level Volleyball and Badminton players in respect of Lower limb length.
5. Significant difference was found between sub junior level Volleyball and Badminton players in respect of Leg explosive strength

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