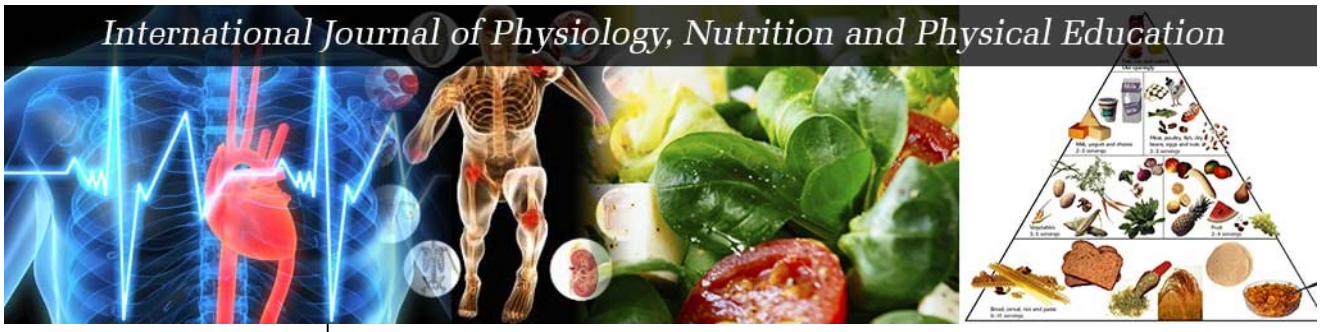

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A comparative study of physical fitness variables of male volleyball players and handball players

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Abstract
The purpose of the study was to compare the physical fitness of Volleyball and Handball players of intercollegiate players of Jammu University, Jammu and Kashmir. For this study 15 Handball (Age 20±0.845) and 15 volleyball players (age 21.866 ± 0.833) were selected. Physical fitness variables were strength, endurance, agility, speed, flexibility. The tests taken to measure these were pull ups, sit ups, shuttle run, 50 m dash and 600 m run. Data was analyzed by using t-test independent, level of significance set at 0.05. Analyzed data showed that there was no significant difference sit ups, and 600 m run, but there was a significant difference between the two groups on the basis of Pull ups, shuttle run and 50 M dash run performed by them.

Keywords: Handball players, volleyball players, strength, speed, endurance, agility, flexibility

Introduction
Human life is based upon the body he keeps. All the activities of life are done with help of the body. Today modernization has made human life easier, as the most the work is performed by the machines. The sedentary life style of man has reduced the efficiency of humans. According to the Centers for Disease Control and Prevention (CDC), physical fitness is defined as 'the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and respond to emergencies. Based on this definition, fitness involves everything from getting out of bed to hiking to performing CPR. In order to complete all of these tasks, one must consistently address their fitness levels. This requires proper conditioning through both structured exercise and leisurely activities. Physical fitness is one of the most important aspects in the field of physical education. But physical fitness is not the same with health; it plays an essential role in all aspects of health because they are very mooch related. Good health provides a solid foundation on which fitness rests and at the same time fitness provides one of the important keys to health and living one's Life to the fullest. Kumar Praveen [2017]. Strenuous exercise (Kamla-Raj, 2010) for most individuals, increase in physical activity increases physical fitness. Hence, physical activity and physical fitness are closely related in that physical fitness is mainly not entirely determined by physical activity patternws over recent weeks or months. That's why; genetic contributions to fitness are important but probably account for less of the variation observed in fitness than is due to environmental factors, particularly physical activity (Bouchard, C., and L,. pe' Russe, 1994) [9]. The complex nature of physical fitness can be best under stood in terms of its components such as cardiovascular endurance, strength, flexibility, speed and muscular endurance. In addition to these components of physical fitness there are many other factor which contribute to physical fitness including heredity, living standard, nutrition, hygienic conditions, environmental and climate factors etc. (Sallis JF, McKenzie TL, 1992) [10]. Vishaw gourav (2011) [3] found significant differences were found between the individual and team games athletes on selected physical fitness variables. Physical fitness play important role in the selection of players for different sports. The selection of athletes who possess physical fitness and somatotype structure suitable for a particular sports and in order to achieve success in the future making this selection in early ages of the athlete is among the most important ones of these criteria civar yavuz (2012) [11].

Methodology

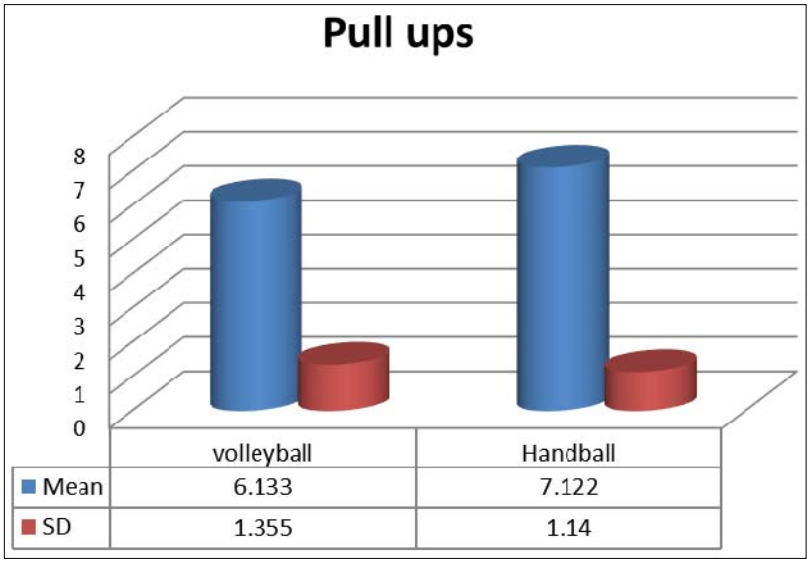
The study was based on physical fitness comparison between two groups, 20 volleyball and 20 Handball players were selected and following tests were performed to measure the physical fitness variables: 50m dash test - To measure speed, Pull ups - To measure strength endurance, 600m run test - To measure endurance, Shuttle run (4 x 10m) test -To measure agility, Sit ups - To measure abdominal strength and flexibility.

Results and Discussion

Table 1: Comparison of Handball and Volleyball players on the basis of physical fitness variables

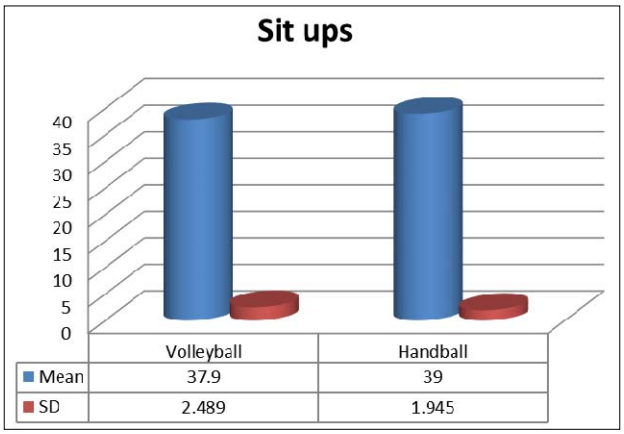
Test	Mean ±SD Volleyball	Mean ± SD Handball	T-Value
Pull ups	6.133± 1.355	7.122 ± 1.140	2.4978*
Sit ups	37.9±2.489	39 ± 1.945	1.557
Shuttle run (seconds)	11.53 ± 0.226	11.12±0.280	5.0957*
50 M dash (seconds)	7.53±0.270	7.38±0.123	2.26*
600 M run (seconds)	1.57±0.30	1.52±0.40	0.4472

*Significant at 0.05 level, Degree of freedom= 38



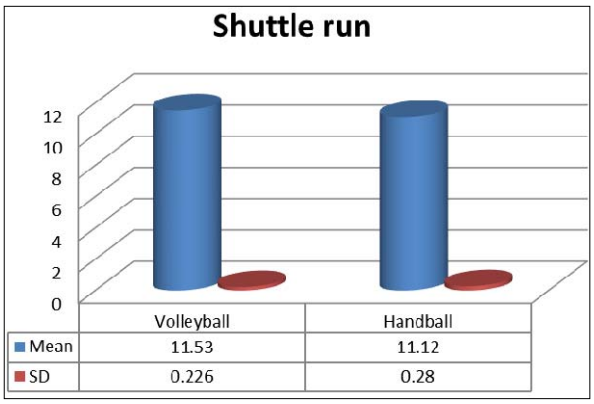
Graph 1

Graph -1 revealed the results of selected physical fitness variables of University level Handball and volleyball players. Analysis of data revealed that the mean and SD of Volleyball for the variable of pull ups is 6.133± 1.355 and the mean and SD of Handball for the variable of pull ups is 7.122 ± 1.140, ***Table -1*** shows that the group differences for the variables of pull ups are statistical significant't' value 2.4978*, which mean that handball players are better than volleyball players in muscular strength.



Graph 2

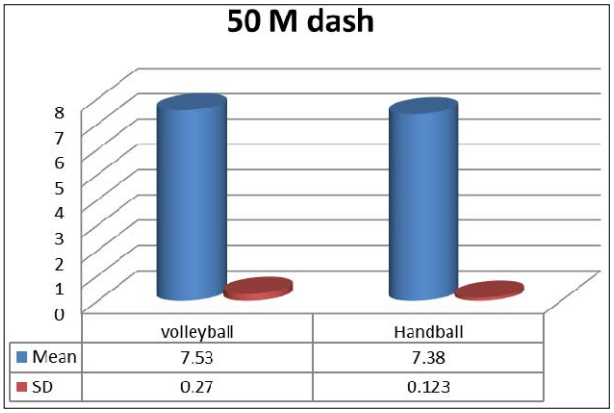
Graph -2 revealed the mean and SD of sit ups of Volleyball players is 37.9±2.489 and the mean and SD of sit ups of Handball is 39 ± 1.945, ***Table -1*** shows that the group differences for the variables of sit ups are not statistical significant' value 1.557.



Graph 3

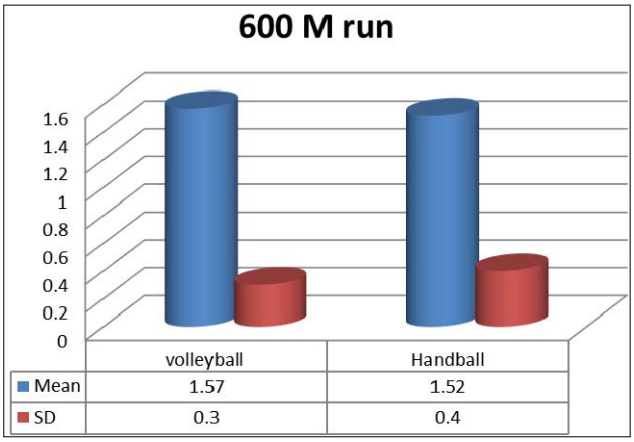
Graph -3 shows that the mean and SD of Volleyball for the variable of Shuttle run is 11.53 ± 0.226 and the mean and SD of Handball for the variable of sit ups is 11.12±0.280, Table - 1 shows the group differences for the variables of Shuttle run are statistical significant' value 5.0957*, which mean that

handball players are better than volleyball players in agility.



Graph 4

Graph -4 revealed the mean and SD of Volleyball for the variable of 50 M dash is 7.53±0.270 and the mean and SD of Handball for the variable of 50 M dash is 7.38±0.123 ***Table-1*** shows that group differences for the variables of 50 M dash are statistical significant' value 2.26*, which mean that handball players are better than volleyball players in speed.



Graph 5

Graph -5 revealed the mean and SD of Volleyball for the variable of 600 run is 1.57±0.30and the mean and SD of Handball for the variable of 600 run is 1.52±0.40 ***Table-1*** shows that group differences for the variables of 600 run are not statistical significant' value 0.4472.

Conclusions

The purpose of this study was to evaluate the group differences between Volleyball and Handball Players in selected physical fitness components of male players of Jammu University. Our main finding was that there was no significant differences for the variables of sit ups, and 600 m run, but there was a significant difference between the two groups on the basis of Pull ups, shuttle run and 50 M dash run performed by subjects. The similar results were founded by Suresh N.B (2011). The differences in the selected physical fitness components between two groups may be due to nature of games. Handball requires more speed and agility and muscular strength. It is fastest game whereas; in volleyball players requires more leg power and coordination.

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