



## Academic Sports Scholars



### “A COMPARATIVE STUDY ON SELECTED PHYSIOLOGICAL VARIABLES OF UNDER-GRADUTE FEMALE VOLLEYBALL AND BASKETBALL PLAYERS”

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#### ABSTRACT

The main purpose of the present study was to compare selected motor fitness variables among under graduate Female Basketball and Volleyball players of M.E.S. College who actively participate in their inter collegiate tournaments. Total 30 players were selected for



the study and were examined accordingly further the subjects were divided in to Two groups Basketball Girls players N=15 Volleyball Girls Players N=15, their age was above 18 and below 22 years of age. Speed, agility and cardio respiratory endurance variables were selected for the study. To achieve the result of

the study discriminant analyses was done, The SPSS American software was used for the statistical computation. Statistical investigation revealed that there is significant difference among under graduate Female Basketball and Volleyball players of M.E.S. College players in specific motor fitness Tests. On the base of the study it was concluded that Volleyball Girls players were superior to Basketball Girls team of M.E.S College in Speed, Agility and Cardio Respiratory Variables. The research clearly demonstrates the need for specific motor fitness testing in women's respective sports.

**KEYWORDS** :Speed Testing, Anthropometry, Motor fitness, Run-a-two, Run-a-Three, General speed testing and under graduate Cricket Players.

#### INTRODUCTION

Motor fitness is a term that describes an athlete's ability to perform effectively during sports or

other physical activity. An athlete's motor fitness is a combination of five different components, each of which is essential for high levels of performance. Sport is a complex of all cyclic & acyclic movements & sports performance is a multidimensional phenomena. Sports performance is also a complex of numerous factors such a physiological, physical, psychological sociological, variety mixture of all inborn qualities and so on. Physical factor especially motor fitness characteristics of an athlete are the pre-requisites of performance factors.

Volleyball is an excellent all round team-sport, and it has been widely accepted as a highly competitive and recreational game throughout the world. Since its inception in 1985, it has not only developed from a slow moving game into a fast one, but also has become and spectators alike. It is interesting to note that the speed of a powerfully spiked ball in the game of volleyball is about 45 meters per second, which is much faster than the movement of the game offers a wider opportunity for the development of strength, speed, endurance, agility, neuromuscular skills, and co-ordination volleyball has an added advantage in being suitable for both sexes, regard-less of age and physical ability, as it is highly adaptable.

According to (Hare 1979) "For high level of performance, physical fitness is most important and fundamental criteria." While keeping in view the significance of motor fitness variables in sports performance of other sports, an attempt was made to find out the suitable motor fitness variables to predict the volleyball playing ability of under nineteen school national level girl players

Basketball is a spectacular team game played by two teams of five players each. It stands out as an extremely complex game, with very specific structural and functional characteristics (Trninic, 1996). It includes intermittent and sophisticated moving activities with the complex requirements for a combination of individual skills, team play and motivational aspects (Trninic & Dizdar, 2000). Success in high number of game tasks is accomplished by quick actions in a relatively small space (2006). Basketball has plenty of acceleration, deceleration, sprints, quick direction changes and rebounds. Crisafulli et al (2002) have found that basketball players, during the 40 minutes of a basketball game, cover about 4500-5000 m in different types of movement (changes of direction and course of movement, running, dribbling, defensive movements and rebounds) and at different, variable speeds.

Narazaki et al. (Narazaki, Berg, Stergiou, & Chen, 2008) provide information that players during a match spend 34% of the time in running and rebounding, 56.8% in walking and 9% of the time in standing still. It is clear that the game of basketball consists of short but very intense activities, broken by longer or shorter periods of passive or active rest, during which a basketball player recovers (Spencer, Bishop, Dawson, & Goodman, 2005; Taylor, 2004; Trninic, 1996). In reference to this, basketball 'live' activity mainly takes place in the maximal and sub maximal intensity

Brenna Rushing said it best when she wrote "The SMU women's basketball team wins games; the men's team wins fans" in an article that appeared in the Daily Campus in April of 2009. At that time the women's basketball team had a record of 20 -11, compared to the men's nearly inverse final record of 9 – 21. Despite the discrepancy in athletic accomplishment, the men's basketball team averaged nearly 2,000 more fans a game than the women's team (Rushing, 2009)

## PURPOSE OF THE STUDY

The main purpose of the present study was to compare selected Motor fitness profiles of M.E.S. College Girls Volleyball and Basketball teams, who actively participating in state, Inter collegiate tournaments. Since the term Motor Fitness is a broad concept, three of motor fitness testing variables was selected for the investigation, and Specific Hypothesis involving some of Motor Fitness Profile was formulated

- To find out the difference in speed 50 meter dashes among M.E.S. College Basketball girls team with that of Volleyball Girls team?
- To find out the difference in Agility Semo agility test among M.E.S. College Basketball girls team with that of Volleyball Girls team?
- To find out the difference in Cardio respiratory endurance (12 minute run and walk test) among M.E.S. College Basketball girls team with that of Volleyball Girls team?

**SIGNIFICANCE OF THE STUDY:**

The findings for the research study will be directly applicable to contemporary t players. The outcome should assist coach to formulate game tactic, and provide conditioning coaches with the evidential base to enhance the physical demands of players, using formal and specific training program. Finally this research study should help sports scientists in their design of preparation strategies for designing new training models.

**LIMITATIONS OF THE STUDY**

- 1.The study was limited to only to colleges of Goa M.E.S. College Girls team Only 15 players from each team were taken as subject for the present study
- 2.All the players were expected to have taken sufficient rest and proper food the previous night. It was assumed that all the players gave their 100% effort while testing.

**DELIMITATIONS OF THE STUDY**

- 1.The concept of Physical Fitness involves many abilities, however only Specific related abilities, which are deemed to be essential to effective performance, are measured and recorded.
- 2.Because of paucity of time, only the 30 subjects were measured and recorded

**METHODOLOGY:**

**Subjects**

Total 30 subjects were selected for this study, 15 from Volleyball and 15 from Basketball game team as sample for the study. The subjects were recruited as per experience all the players were had experience of playing minimum 1 years of inter collegiate college. Necessary Permission was taken from respective head of the Institution.

**Table : I - Varibale for the Present study**

Sr. No	Subjects	N	Type	Equipments
01	Basketball	N=15	General 50 Meter Dash	Nearest 0.001 seconds.
	Volleyball	N=15		
02	Basketball	N=15	Semo- agility test	Stop Watch Nearest 0.001 seconds
	Volleyball	N=15		
03	Basketball	N=15	12 Minutes Coopers Test	Nearest 0.001 seconds
	Volleyball			

**Test and Procedure**

For measurement of selected Specific motor fitness variables Of M.E.S. College girls team

standard physical fitness test Protocols was utilized. Data of subject’s were collected in the month of March 2016.Two testing sessions were completed by all the subjects, separately by 48 hours. The first testing involved general speed testing 50 meter dash, the second testing session incorporated the semo-agility test and next day 12 minute coopers test was administered on the subjects. The subjects did not wear any protective gear or other necessary equipments during the specific tests. Their age ranged between 18- 22 years. All the subjects received a clear explanation of the study, including the risk and benefits of participation, the entire Test on Players was conducted at BITS Piani Goa Campus Cricket Ground and 50 meter dash, semo agility test and 12 minute coopers test was done at the open square area of the cricket field with proper marking and protocol. The subject were allowed to consume water and sports drinks throughout the testing sessions. Time for each assessment was recorded in metric system.

**Statistical Procedure**

For analysis of the data, collected from 30 players M.E.S. College Basketball Girls N=15 and Volleyball Girls N=15, their age was above 18 and below 22 years of age, Mean and Standard Deviation was computed. Comparison was made on the basis of activity i.e. Basket ball Players and Volleyball players of teams for this purpose ‘T’ test was applied. For testing the hypothesis the Level of confidence was set at .05 Level of significance.

**Results of the study**

**Table: II comparison of speed 50 meter dash among Volleyball and Basketball players of M.E.S College Zuarinagar Goa**

Group	Mean	SD	MD	SE	T Value
Volleyball	7.394	0.477	.284	.140	2.028
Basketball	7.00	0.266			

\*significant at 0.05 level t .005= 1.733

- Table II: Reveals that the calculated value of t (2.028) was higher than the value of (1.753) so we can say that volleyball players significantly greater than from basketball players

**Table III: comparison of speed Semo-agility test (Agility) among Volleyball and Basketball players of M.E.S College Zuarinagar Goa**

Group	Mean	SD	MD	SE	T Value
Volleyball	13.934	0.343	1.113	0.224	4.986*
Basketball	12.821	0.797			

\*significant at 0.05 level t .005= 1.733

- Table III reveals that the calculated value of t (4.986\_ was higher than the value of (1.733) so that we can say that volleyball players are significantly better than the basketball players

**Table IV: comparison of Cardio respiratory endurance (12 minute coopers test) test among Volleyball and Basketball players of M.E.S College Zuarinagar Goa**

Group	Mean	SD	MD	SE	T Value
Volleyball	1740	63.947	90	18.897	4.47
Basketball	1830	35.606			

\*significant at 0.05 level t .005= 1.733

• Table IV Reveals that the calculated value of t (4.76) was higher than the value of (1.753) so we can say that volleyball players are significantly better than Basketball players.

**DISCUSSION**

From the present study it has been observed that there was significant difference among Basketball and Volleyball girl’s teams of M.E.S College Zuarinagar Goa, The Volleyball Girls team found to be greater in the entire motor fitness variable which was considered for the study, Speed, agility and Cardio respiratory endurance.

Both games are very popular among Girls, and both games requires high intensity of fitness, but training pattern of both the games are totally different this may be the case in differentiation of this two groups also the nature and demand of body types is totally different among this two games , that may be the reason of difference.

**CONCLUSION**

• On the base of the study it was concluded that Volleyball Girls players were superior to Basketball Girls team of M.E.S College in Speed, Agility and Cardio Respiratory Variables. The research clearly demonstrates the need for specific motor fitness testing in women’s respective sports.

**PRACTICAL APPLICATIONS**

The ongoing competition among Girls in sports has made Motor Fitness as an essential physiological trait for modern day athletes. It is vital that Volleyball and Basketball strength and conditioning coaches properly test and monitors Motor fitness in their athletes.

• The assessment used for talent identification and squad selection, and the monitoring of physical conditioning, should best represent the requirement of the sport. The research clearly demonstrates the need for specific motor fitness testing in women’s respective sports.

**RECOMMENDATION FOR FUTURE RESEARCH WORK**

Extensive research have been undertaken in several sports disciplines to identify Fitness characteristics of young female athletes which enables coaches to identify promising talent in their respective sports disciplines. However, no research is traceable which identify Fitness and other characteristics of young female athletes. Therefore it is recommended to undertake research which might identify the fitness profiles of young female athletes from normal population or other sporting population.

• In the present study sample size of young female athletes was very small. Therefore, it is recommended to replicate such an investigation with larger sample size.

- Within each sports disciplines the demands placed on various specialists differs. Therefore Investigation of Motor Fitness profiles of female athletes specializing in basketball shooting, volleyball spiking is recommended.
- The present investigation involved female athletes at college level. The Fitness profile at national and international level may be accentuated for various reasons. Therefore an investigation involving female athletes of national and international repute may be undertaken.

#### **RECOMMENDATION FOR COACHES AND ADMINISTRATORS**

- Therefore it is recommended that either training regime be made demanding or select candidates with Fitness Profiles.
- Based on the research findings involving young children in sports, identify talented female athletes at early age and coach them right.
- It is recommended that coaches based on their knowledge of Motor Fitness profile required for various departments of the game of volleyball and Basketball.

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