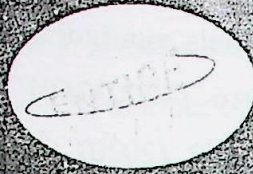


Special Issue - March 2021

ISSN 0975-5020



ENTIRE RESEARCH

MULTI-DISCIPLINARY

INTERNATIONAL JOURNAL

INDEXING WITH ISRA
Peer Reviewed and Refereed Journal

INTERNATIONAL
CONFERENCE
INDIA

LEAP



MM's
Chandrashekhar Agashe
College of Physical
Education, Pune, Maharashtra



57	Development And Standardization Of Measuring Tool For Bent Knee Sit Ups	Miss. Valbhavi Chodankar	265
58	A Comparative study of Motion Examination of Forehand overhead Clear Stroke and Relationship of anthropometric estimations at the time of Contact Stage in Badminton	Mr. Vijay B. Singh Dr. Balwant Singh	269
59	Anthropometric variables as predictors for state level weightlifters	Mr. Vishal Ullamrao Salunkhe Dr. Narayan Madhav Jadhav	276
60	Why Youth Drop Out Of Sports	Manoj V. Deolekar Nikhil L. Sonone	281
61	Finding the New Alternative Exercises for Young Hand Ball Player	Mr. Sanjay Daulatrao Bagul	284
62	Correlation between the Prediction Equations for Estimating 1-RM Performance in Squat	Prof. Santosh B. Jadhav	290
63	A Comparative Study On Body Composition And Physical Fitness Of Adolescent Archers Residing In The City Of Mumbai, India	Urmi Hariya Subhadra Mandaika	294
64	Study of achievement motivation among Inter collegiate players	Sneha P. Gour Anand S. Haiole Namrata P. Sahuji	300
65	Psychological Effect of Injury on the Athlete	Ujhas V. Bramhe	302
66	Current Status and Effect of Physical Education Scheme of SPPU, Pune on Physical Fitness of Under graduate College Boys students from Pratibha College of Commerce and Computer Studies, Chinchwad, Pune	Dr. Anand B. Lunkad	305
67	Modern Methodic PF Power Cardio Training In Students' Physical Education	Dr. B.M. Dhonde	311
68	Effectiveness of FMS Corrective exercise Intervention on Functional Movement Screen Test Scores in Semi-professional Freestyle Swimmers	Dr. Ashish Babhulkar Dr. Kashmira Sabnis	315
69	Study of development of Strength Endurance of Mentally Challenged Children	Dr. Archana S. Giri	321
70	Effect of Relaxation Techniques on the Stress Management of Air Pistol Shooters	Dr. Ajay Singh Charak Payal Choudhary Rakesh Singh Charak	325
71	Effect of Yoga on Anxiety Levels in college students	Deepali S. Morey Dr. Sharad Aaher	329
72	Analytical study of Physical Fitness of College female Athlete from different ball games with respect to body composition and Cardio- Vascular Endurance	Ekta Ashok Jadhav Dr. Mahesh Deshpande	333
73	Comparative Study of the Emotional Intelligence of Sports Person and Non Sports Person Male Students from Sanjivani College of Engineering, Ahmadnagar Maharashtra	Mr. Avhad Yogesh Kallas Prof. Dr. Balaji Pote	338



Analytical Study of Physical Fitness Of College Female Athlete From Different Ball Games With Respect To Body Composition And Cardio- Vascular Endurance

Asst. Prof. Ekta Ashok Jadhav

Director of Physical Education, St. Mira's College for Girls, Pune ekta.jadhav@gmail.com

Dr. Mahesh Deshpande

Assistant Professor, C. Agashe College of Physical Education, Pune drmdeshpande@gmail.com

ABSTRACT

The purpose of the study was to analyse Physical Fitness of College female Athlete from different ball games with respect to their body composition and Cardio-Vascular (CV) Endurance. Total thirty-four female Athletes from threeball games namely Football, Handball and Basketball of age between 18 to 21 years old of St. Mira's College for Girls, Pune was selected purposively. This study used tools for data collection as the 12 mins run / walk test and Body Mass Index (BMI) score, which were used for assessing CV Endurance and Body Composition of all the players respectively. The collected data was analysed by using descriptive statistics and ANOVA test and Correlation test. The result of the study reveals that there was no significant difference in BMI and CV Endurance of female athletes between all the three games namely Football, Handball & Basketball girls fitness score. There was negative coefficient of correlation between the CV Endurance and body weight of all three ball games and only in basketball players performance the coefficient of correlation was found significant.

Key words : Physical Fitness, Body Composition and CV Endurance

Physical Fitness is very necessary for participating in any games and sports. Without fitness we can't give our best performance. Physical Fitness of an individual depends on body composition, age, sex, training and nutrition status and environmental factor. The human fitness may influence from the born and it will change by their heredity, living environment, lifestyle and so on. Physical fitness is defined as the capacity to perform daily activity with vitality and sharpness, without undue fatigue while being able to appreciate recreation time interests and to meet the unpredicted emergencies (Singh K, 2017). It is the combination of health and skill related aspects of physical fitness which is imperative in shaping individuals in sports or games. Endurance Training leads to healthier and stronger muscles and bones, it also helps to perform everyday task with ease. Endurance training and body composition is interlinked with each other when we practice for Endurance training automatically our Body Mass Index (BMI) is maintained.

Football, Basketball and Handball are competitive sports, which demands high degree of physical fitness from their players for easy and efficient execution of technical and tactical skills mastered by the players. These all three games are very aggressive and fast in nature and totally depends on the fitness level of the athletes. These all games required more CV Endurance and speed, both. So, athletes should be properly trained on the physical fitness specially with endurance, speed and strength. While practicing for different ball games, we can observe



that there is a specific effect seen on the Body Composition and Cardio Vascular Endurance of the athletes. The body composition is different for different sports e.g., Kabaddi players body composition is different than the Football Players. According to the type of game or sports event, the body composition changes. And the CV endurance is also very necessary in all games, without it, athlete can't play for a long duration of time.

The researcher has selected female athletes from St. Mira's college for girls, Pune. All the athletes were doing practice from last one year for their respective games. As we all know Regular practice improves the fitness level, especially Endurance, Speed, Strength. So, the researcher wanted to see the comparison of CV Endurance performance and BMI score of female Athletes from three different ball games namely Football, Handball & Basketball. And also want to analysed the correlation between the CV Endurance and the body weight of the athlete's game wise.

OBJECTIVE

The purpose of the study was to analyse physical fitness of athletes from three different ball games namely Football, Handball & Basketball.

METHODOLOGY

In this study total thirty-four female Athletes from three different ball games namely Football, Handball & Basketball of age between 18 to 21 years old of St. Mira's College for Girls, Pune was selected purposively. This study followed a Descriptive Comparative Research Method. The tools used for data collection was 12 mins run / walk test and BMI score for assessing CV Endurance and Body Composition of all the athletes respectively.

PROCEDURE

The female Athletes from three different ball games of Football, Handball & Basketball were selected for the study. All the female athlete were participated in district level competition and were doing regular practice in their respective games. The 12 mins run / walk test and height and weight test were measures of all thirty-four girls. The collected data was analysed using descriptive statistics, ANOVA and Correlation coefficient was calculated with SPSS software.

RESULTS

Table 1 : Frequency table of Body Mass Index

	Under Weight	Normal Range of Weight	Overweight
Games	Below 18	18.1 -24.9	25 and above
Football	5	6	1
Basketball	2	6	2
Handball	2	10	

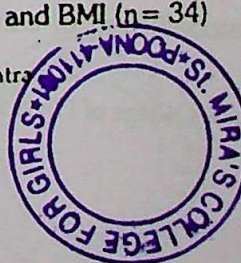
According to Table No. 1, out of twelve players of football, five players were Under Weight, six were in Normal Range and one player was Overweight; out of ten players of basketball, two players were Under Weight, six were in Normal Range and two players were Overweight and out of twelve players of Handball, two players were Under Weight and ten players were in Normal Range.

Table 2 : Game wise Descriptive statistics of 12 mins run/ walk and BMI (n = 34)

MM's Chandrashekhar Agashé College of Physical Education, Pune, Maharashtra

ISSN 0975-5020

Jayab
Principal Incharge
St. Mira's College for Girls, Pune.



	Football (n=12)		Basketball (n=10)		Handball (n=12)	
	12mins	BMI	12mins	BMI	12mins	BMI
Mean	1705.8	19.3	1627.0	22.4	1805.0	20.0
Standard Deviation	190.28	2.98	184.45	4.39	362.45	3.02
Variance	36208.3	8.9	34023.3	19.3	131372.7	9.1

According to Table No. 2, for the athletes from football, the mean score of 12mins run/walk and BMI was 1705.8 and 19.3 respectively, In Basketball event the mean score of 12mins run/ walk and BMI was 1627.8 and 22.4 respectively and In Handball event the mean score of 12mins run and walk and BMI was 1805.8 and 20.0 respectively. It shows that the handball players have maximum CV endurance than the other two event games players. And It has been also seen that their maximum players lie under the normal category of BMI.

Table 3 : ANOVA of 12mins run/walk test scores with respect to all 3 ball games

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	175410.10	2.00	87705.05	1.26	0.30	3.30
Within Groups	2149601.67	31.00	69341.99			
Total	2325011.76	33.00				

The Table No. 3 displayed that the sum of Square between groups was 175410.10 and within groups was 2149601 at degree of freedom 2. The P value is 0.30 and the F value was 1.26; which was less than the critical Value 3.30 this shows that there was no significant difference in within the groups of CV endurance.

Table 4 : ANOVA of BMI scores with respect to all 3 ball games

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	56.88	2.00	28.44	2.37	0.11	3.30
Within Groups	371.95	31.00	12.00			
Total	428.83	33.00				

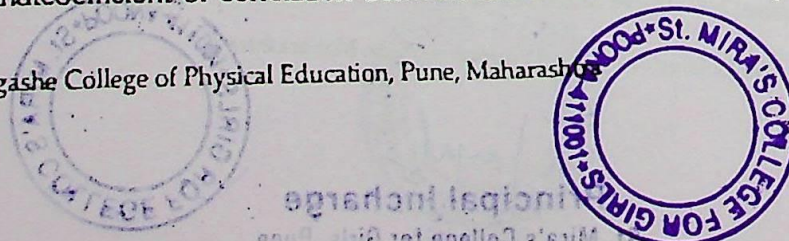
The Table No.4 revealed that the sum of Square between groups was 56.88 and within groups was 371.95 at degree of freedom 2. The P value was 0.11 and the F value was 2.37 which was less than the critical value 3.30. This showed that there was no significant difference found within the groups of BMI score.

Table 5 : The Coefficient of Correlation among CV Endurance, and body weight of the athletes from threeball games.

	Coefficient of Correlation
Football	-0.38
Basketball	-0.73
Handball	-0.12

Correlation was significant at the 0.05 level (2-tailed).

Table No. 5 showed that coefficient of correlation between the CV Endurance test performance, and Body



weight of the all the 3 games Football, Basketball and Handball was 0.38, 0.73 and 0.12 respectively. It showed that coefficient of correlation of football and handball players was very low level of correlation. And for basketball players there was significant correlation between the CV Endurance test performance, and Body weight. It was, therefore interpreted that as weight increases cv endurance decreases. (As coefficient of correlation was negative)

DISCUSSION

The results of this study revealed that there was no significant difference found in CV Endurance performance and in BMI Score of all three games football, basketball and handball players. Football, Basketball and Handball, all three games required same level of cardio-vascular fitness. All the players were practicing from last one year in their respective games which means that they all were beginners, so we have not found the significant difference in both the fitness test scores. As the mean score of CV Endurance test showed that there was difference in the performance of all three games athletes, but it was very small, it was showing no significant difference in ANOVA test of CV Endurance and Body Composition score of all three games athletes. In coefficient of correlation, for football and handball players was very low level of correlation and for basketball players there was high level of correlation between the CV Endurance test performance, and Body weight. All basketball players weight was less, so this result can be taking place.

In another study by Dharmendra, S. & Rajendra, R. (2015) they have seen that there was significant difference in the Body Mass Index- in relation to the volleyball and football players. The football players group was having more BMI showing greater body mass than the volleyball players group. And the significant difference was found in the 12 minutes Run/Walk test of cardiovascular endurance in relation to the volleyball and football players. The football players group had better cardiovascular endurance, showing greater heart and lungs capacity than the volleyball players group. There was not found any significant difference in relation to body weight. Karthi S.R. Krishnakanthan (2012) had conducted the similar study on analysis of selected physical variables among football, hockey and basketball players. They found that basketball players had better speed compare to football and hockey players. And CV Endurance of football players had better compare to the basketball and hockey players.

CONCLUSION

The result of the study revealed that there was no significant difference in BMI score and CV Endurance of female athletes between all three games (Football, Handball & Basketball). And there was negative correlation between the CV Endurance and body weight of all three ball games. The coefficient of correlation of football and handball players was very low-level correlation. And for basketball players there was significant correlation between the CV Endurance test performance, and body weight.

REFERENCES

- Best, J. W. & Kahn, J. V. (2009). *Research in Education* (10th ed.) . New Delhi: Prentice - Hall of India.
- Bembade. M.A. and Reddy. N.B. (2014). *Impact of Physical fitness and BMI on Academic Performance. International Journal of Health, Physical Education and Computer Science*, 15, pp. 205-206.
- Caspersen, C.J., Powell, K.E., Christenson, G.M. (1985). *Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. Journal, Public Health rep.* 100(2), 126-131.
- Dharmendra, S. & Rajendra, R. (2015) *A Comparative Study on Selected Physical And Physiological Fitness Components of Volleyball and Football Players.*



Indian Journal Applied Research. Volume 5 Issue 1

Fitness, Health & Sports The History of Physical Fitness. (2014). Retrieved from <https://www.artofmanliness.com/articles/the-history-of-physical-fitness>.

Kansal, D. (2012). A Practical Approach to test. Measurement and Evaluation. New Delhi: Sports and Spiritual Science Publication.

Malina, R. (1996). Tracking of Physical Activity and Physical fitness Across the Life span. Research Quarterly for Exercise and sports, 67, 48-57.

Karthi SR, Krishnakanthan (2012). Comparative analysis of selected physical variables among football, hockey and basketball players. Indian Journal Applied Research. 3(8):57-158

Singh K, Singh R (2017). Comparison of selected physical fitness components of badminton and basketball players. Indian Journal Applied Research; 3(4):236-40.

