

Critical Analysis of Cardiovascular and Motor Fitness Abilities of Inter-University Players

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Abstract : The purpose of this study was to examine cardiovascular and motor fitness profile (abilities) of inter-university players of University of Rajasthan. An insignificant difference between the individual game and team game players (t value of -0.06 was less than the table value of 1.96 required for 't' test to be significant at 0.05 level with 118 degree of freedom) was observed in cardiovascular endurance, explosive strength, muscular strength and endurance of arms and shoulders, agility and total J.C.R. scores. *Key Words:* Cardiovascular profile, motor fitness, individual game players and team game players

INTRODUCTION

Long Ago Plato had Observed "The body needs to be vigorous in order to obey the Soul; a good servant ought to be reverent. The weaker the body, the more it commands, the stronger it is, the better it obeys... In order to think, we must exercise our limbs, our senses and our organs, which are the instruments of our intelligence. In order to derive all the advantages possible from these instruments, it is necessary that the body which furnishes them should be robust and sound.¹

Man is the basic unit of society. In society he has to live in harmony with others. A physically fit member of society, instead of being a burden on it, will be able to contribute his mite in the achievement of goals and objectives of the society. A physically fit individual can prove a better worker, technician, doctor, engineer or a parent and can contribute towards the betterment of self, family or the institution where he works. Physical fitness is the natural out-come of a rich programme of physical education. It is the sum total of the condition of one's body judged in terms of age, height, weight and chest expansion. The absence of defects, disease, constitutional deflection or bodily infirmity. Full physical development, vigour, vitality and radiant health should be seen in one who is physically fit. A great deal of confusion, ambiguity and misconception exists in defining exactly and accurately the parameters of 'Physical Fitness'. Physical Fitness variables can broadly be categorized and evaluated under the following headings, namely Occupational, Medical and Physiological. From an Occupational point of view 'physical fitness' is defined as the degree of ability to execute a specific physical task under specific conditions. Here physical fitness implies the ability to do work according to the demands of one's occupation.⁸ The importance of physical fitness in any sphere is reflected the following words of **Shri Ramakrishna:**

"He who is soft and weak minded like the putted rice soaked in milk and good for nothing. He cannot achieve anything great. But the strong and virile one is heroic. He is the accomplisher in life.

METHODOLOGY

The present investigation was undertaken on inter-university players of University of Rajasthan, Jaipur in age range of $20 - 25$ years. All subjects had a different training programme (according to his/her game) for performance enhancement prior to this study. Subjects were tested in motor fitness and physiological variables pre and post-intervention. Subjects with any ailment either congenital or acquired were excluded from the study.

The cardiovascular endurance of the subjects under evaluation was assessed by the help of Cooper's 12-minute run/walk and J.C.R. tests. The motor fitness of the sample population, analyzed in terms of muscular endurance, muscular strength, flexibility, agility, balance, power, speed, reaction-time, and coordination-ability, was examined with the above cited assays, namely Cooper's and J.C.R. The cardiovascular and motor fitness parameters of the subjects involved in various team games like basketball, volleyball, hockey, cricket, football and handball were compared and analyzed with that of the subjects involved in individual games like swimming, judo, wrestling, table-tennis, badminton and athletics. The data so obtained was statistically processed and mean, standard deviation and student's t-test were measured there from.

RESULTS AND DISCUSSIONS

Table 1

Comparison of Cardio-Vascular Endurance of Individual and Team Game Players of University of Rajasthan

12-Minute Run/Walk Test

Groups	N	Mean	S.D.	M.D.	SED	't' value
Individual Game	60	49.98	9.97		1.28	
				0.11		.01
Team Game	60	49.99	9.98		1.29	

* Significant at $.05$ levels.

't' value at $.05$ ($df - 118$) = 1.96 .

Table 1 reveals that there is no significant difference in the cardiovascular endurance (as exemplified by the 12-minute Cooper's Test) of subjects playing team games as compared with the sample population which was

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involved in individual games (as listed above in methodology), as the obtained value of 't' (0.01) was more less than the table value of 1.96 required for 't' test to be insignificant at 0.05 level with 118 degree of freedom.

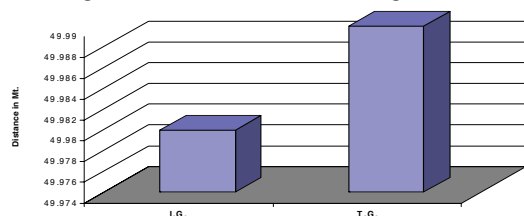


Fig. 1: Comparison of Mean Cardio-Vascular Endurance

Table-2

Comparison of Vertical Jump, Chin-ups, Shuttle Run and Total Score (J+C+R) Individual and Team Game Players of University of Rajasthan in J.C.R. Test

S No.	J.C.R. Test Items	Group	N	Mean	S.D.	M.D.	SED	't' value
1.	Vertical-jump (score in Nos.)	Ind. Game	60	49.99	9.99		1.29	
		Team Game	60	50.09	1.01	-.10	1.30	-.06
2.	Chin-ups (score in Nos.)	Ind. Game	60	49.98	9.99		1.29	
		Team Game	60	49.98	10.02	.01	1.29	.01
3.	Shuttle-Run (Score in Sec.)	Ind. Game	60	49.84	9.98		1.27	
		Team Game	60	50.05	9.98	.21	1.28	-1.1
4.	Total Score J+C+R	Ind. Game	60	144.81	19.42		2.03	
		Team Game	60	150.15	14.68	.34	2.52	-.01

* Significant at .05 levels
't' value at level .05 (df - 118) = 1.96.

The table 2 depicts scores on Vertical Jump (J), Chin-Ups (C) and Shuttle Run (R) and summated scores (J+C+R) giving a comparative assessment of the overall motor fitness of subjects involved in individual games and team games. No significant difference in the J.C.R. test could be appreciated in the individual and summated profile defining the motor fitness of the sample population. The 't' obtained value of 't' was more less than the table value of (1.96) reward for 't' test to be insignificant at 0.05 level of the 118 degree of freedom for the test items and total J.C.R. (J+C+R) score on individual game and team game.

CONCLUSION

With the limitation identified and on the basis of the results of the study following conclusions were drawn: The cardiovascular endurance profile was not significantly different between individual and team game players. However, the mean values of the scores for 12-minute Cooper run of team game players were higher than that of the individual game players. This

difference in the cardiovascular profile of team-game players and individual-game players could very well be appreciated in the backdrop of enhanced motivation, participation and competition contrary to previous reported studies (ref).

On the J.C.R. evaluation of the subjects, individual components of the test namely, Vertical Jump, Chin-Ups and Shuttle-Run, did not register significant difference in the categories of individual game players and team game players. However, the mean summated J.C.R. value of team-game players was higher than that of individual-game players, implying thereby that team game players scored better than individual game players on the scale of motor fitness.

It can be inferred from the above results that team game players of the present study design had a better cardiovascular and motor fitness profile than that of

individual game players, contradicting previous studies. The anomaly could be detailed in terms of better guidance/direction, motivation and competitive/aggressive participation in team game players as compared to individual game players.

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