

## A COMPARISION OF PHYSICAL FITNESS BETWEEN INDIVIDUAL AND TEAM GAMES FEMALE PLAYERS

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### **Abstract:**

*Research suggests that individuals who have increased fitness knowledge via health education are more likely to be physically active and fit. The purpose of the study was to compare the female players of individual and team games on six components of physical fitness, For this purpose, one hundred (Team game =50, Individual game=50) female players were selected from the Raigarh district during the year 2013. The mean age and SD of the female players of team game and individual game were  $16.64 \pm 1.45$  and  $17.72 \pm 1.49$  respectively. All the subjects were tested in AAHPER youth fitness test items i.e. Flex-arm hang, Bent knee sit-ups, Shuttle Run, Standing broad jump, 50 yard dash and 600 yard run. The analysis of data using t-ratio indicated the variance existed between female players of individual and team games in their physical fitness components. Female players of individual games were better in abdominal strength, Speed and endurance. Whereas, the team game's female players were better in Explosive strength of legs, Agility and Arm and shoulder strength.*

### **KEY WORDS:**

Physical fitness, Individual games, Team games, Female players.

### **INTRODUCTION**

The fitness refers to the dynamic qualities that allow a person to satisfy his/her own needs, including but not limited to mental and emotional stability and organic health consistent with functional capacity. There are numerous fitness concepts such as nutritional fitness, which refers to the selection of foods according to their caloric and nutritive values, also proper eating habits. The health related physical fitness refers to the Physical fitness which is a combination of very specific components which are: - Cardio-vascular endurance, muscle fitness (Strength and endurance) flexibility, and body composition.

Physical fitness is a combination of muscular strength, endurance, speed, agility, indoor skills, flexibility and co-ordination. These have been growing realization of physical fitness enhancing human health and performance. The term physical fitness implies fitness of the body and mind and due to body and mind relationship, the new concept of physical fitness includes mental, emotional, social as well as physical aspect (Hebbellneck, 1984).

Physical fitness has three basic components i.e. muscular endurance, muscular strength and circular-respiratory endurance, where as motor fitness includes four additional components i.e. muscular power, agility, flexibility and speed". The human values conquest in the field of sports holds a unique place. It is success, victory, triumph and domination of some over other team mates and friends because sports is comradeship and friendship (Clarke, 1971).

Increasing the physical fitness level is the basic goal of all types of sport preparation. The importance of certain physical fitness abilities for success in a wrestling bout varies in wrestlers of various wrestling styles and age. The aim of this research was to identify the differences between the classical style

Please cite this Article as : Rajkumar Sharma , "A COMPARISION OF PHYSICAL FITNESS BETWEEN INDIVIDUAL AND TEAM GAMES FEMALE PLAYERS" : Academic Sports Scholar (Dec ; 2014)

(Greco-Roman) and the free style wrestlers in the variables assessing physical fitness ( Baic, Sertic and Starosta, 2007).

Fitness had always been a concern of man from pre-historic times. Harry et al. (1965) concluded that "People were not agreed as to what constitute physical fitness though it is important to everyone". The expression "Physically fit" is very much common (vague). Percival and Taylor in 1982 concluded that every individual has different level of fitness. Which may change from time to time, it may also change from place to place and sometimes it may changes with work or situation also. Chand (1977) revealed that defensive players were heavier, taller and had more muscular power than offensive players. Whereas, offensive players were faster and had more endurance than defensive players. Uppal (1980) indicated that regular participating in programmed of games and sports leads to several changes in muscles, increase in leg, grip and arm strength of women students. Singh, Ghosh & Ahuja (1985) observed the improvement in physical fitness components due to the effect of training, it was unusual during competitive period. Cicirko, Scott, Bennett and Hodson (2007) indicated statistical significance in some tests. Research on the special and general physical fitness confirm interdependence rate and the influence on the level of football players. The study relates to the importance of physical fitness components as one of the primary factors for better performance in sports/games. The attempt is made in this study of physical fitness among the team games and individual games players. A physical fit woman gives a good performance for long time in the competition. This study will be very useful to physical education teacher/coaches in the field of competitive performance. .

The purpose of the study was to compare the male players of team game and individual game as well as female players of team game and individual game on six components of physical fitness,

## **METHODOLOGY**

### **Selection of Subject**

One hundred (Team game =50, Individual game=50) female players were selected from the Raigarh district during the year 2013. Individual game players were from Athletics, Swimming and Badminton. Team game players were from Football, Volleyball and Hockey players. The purposive random sampling method was used for the collection of data. The mean age and SD of the female players of team game and individual game were  $16.64 \pm 1.45$  and  $17.72 \pm 1.49$  respectively.

### **Instrumentation**

All the subjects were tested in AAHPER youth fitness test items i.e. Flex-arm hang, Bent knee sit-ups, Shuttle Run, Standing broad jump, 50 yard dash and 600 yard run to collect data in Muscular Strength and endurance of Arms and Shoulders, Strength and Endurance of abdomen, Speed and Agility, Explosive Strength of legs, Speed and Explosive Strength, and Cardio-Vascular Endurance.

### **Scoring of Data**

Time is recorded to the nearest second the hanging position held (Flex-arm hang); Maximum number of correctly executed pull-ups performed on H. Bar; Number of correctly executed sit-ups performed in one minute ups; maximum horizontal distance jumped from ground level and reach at same ground level(standing broad jump) and recorded in to nearest centimeter; time taken to run a distance of 50 yard as fast as possible recorded in 1/10 of second; and time taken to run a distance of 600 yard as fast as possible recorded in minutes and seconds were recorded.

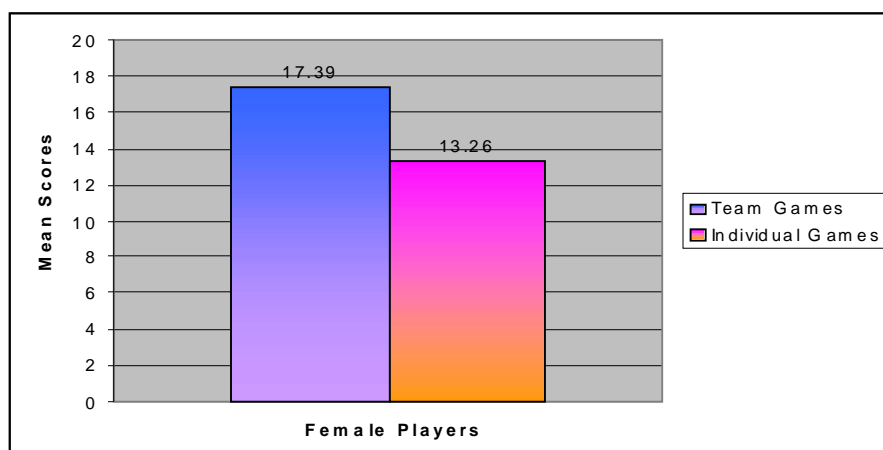
## **RESULTS AND DISCUSSION**

In order to find out the significance of difference between female players of team and individual games belong to Raigarh district, Means, Standard deviations, and t-ratios (Rothstein, 1985) were computed for obtained data by using AAPER Youth Physical Fitness Test. To check the obtained t-ratio, the level of significance was set at .05 level and data pertaining to this have been presented in Table 1 to 6.

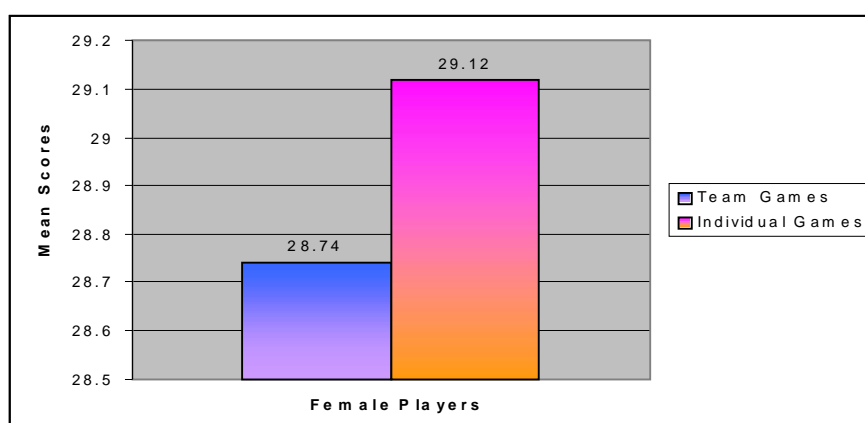
**TABLE 1**  
**DESCRIPTIVE STATISTICS OF VARIOUS COMPONENTS OF PHYSICAL FITNESS OF FEMALE PLAYERS OF TEAM AND INDIVIDUAL GAMES**

Physical Fitness Test variables	Team game		Individual game	
	Mean	SD	Mean	SD
Flex-arm hang	17.39	06.32	13.26	05.65
Bent knee sit-ups	28.74	04.16	29.12	02.24
Shuttle run	11.79	00.49	11.39	00.81
Standing broad jump	01.73	15.24	01.72	12.58
50 Yard dash	09.59	00.91	10.06	00.86
600 Yard Run	02.22	00.24	02.37	00.58

The mean scores of various components of physical fitness of female players belong to team and individual games of Raigarh district have been depicted in figures 1 to 6.



**Figure 1: Comparison of Flex Arm Hang ( strength and endurance of shoulders) of Female Players of Team and Individual Games.**



**Figure 2: Comparison of Sit-ups (abdominal strength) of Female Players of Team and Individual Games.**

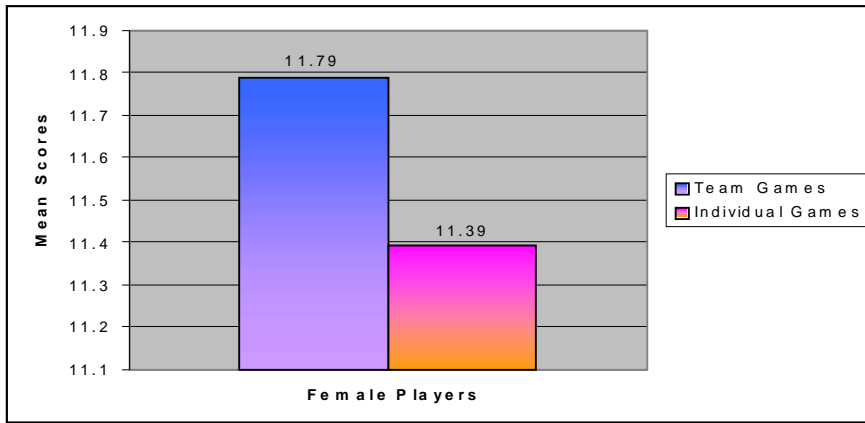


Figure 3: Comparison of Shuttle Run (speed and agility) of Female Players of Team and Individual Games.

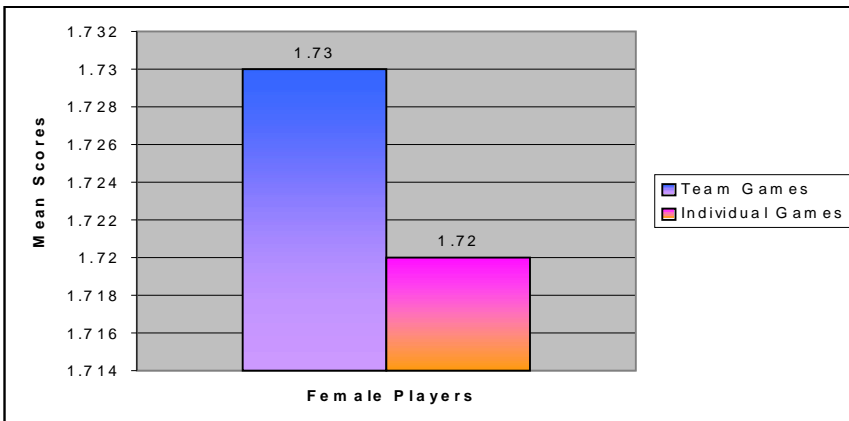


Figure 4: Comparison of Standing Broad Jump (explosive strength of legs) of Female Players of Team and Individual Games.

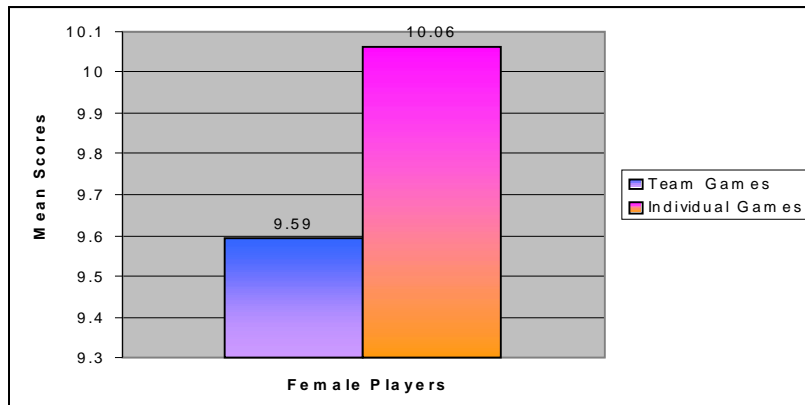


Figure 5: Comparison of 50 Yard Dash (speed and agility) of Female Players of Team and Individual Games.

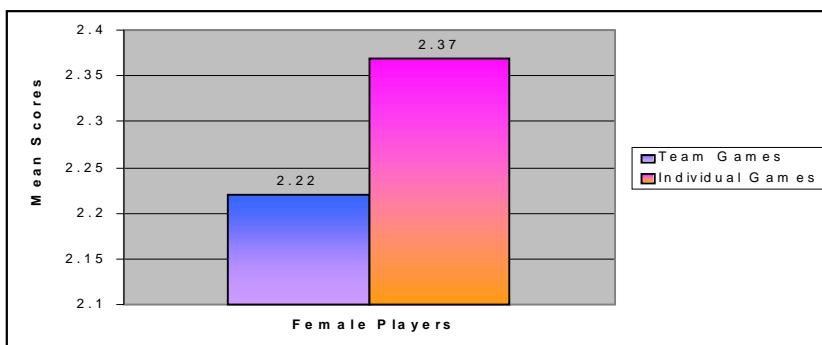


Figure 6: Comparison of 600 Yard Run (endurance) of Female Players of Team and Individual Games.

**TABLE 1**  
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF FLEX ARM HANG OF FEMALE PLAYERS OF INDIVIDUAL AND TEAM GAMES

Game	Mean	M.D.	DM.	t-value
Individual	17.39			
Team	13.26	4.13	1.19	3.45*

Insignificant level at 0.05,  $t_{.05(98)} = 1.98$

It is evident from Table 1, that there statistically significant difference were found between the means of flex arm hang (arm and shoulder strength) female players of individual and team games, as the obtained t-value of 3.45 was higher than the required value of  $t_{.05(98)} = 1.98$ .

**TABLE 2**  
SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF SIT-UPS OF FEMALE PLAYERS OF INDIVIDUAL AND TEAM GAMES

Game	Mean	MD.	DM.	t-value
Individual	29.12			
Team	28.74	0.38	0.67	0.57

Insignificant level at 0.05,  $t_{.05(98)} = 1.98$

It is evident from Table 2, that there was no statistically significant difference between the means of sit-ups (abdominal strength) female players of individual and team games, as the obtained t-value of 0.57 was less than the required value of  $t_{.05(98)} = 1.98$ .

**TABLE 3**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF SHUTTLE RUN OF FEMALE PLAYERS OF INDIVIDUAL AND TEAM GAMES**

Game	Mean	M.D.	DM.	t-value
Individual	11.39			
		0.40	0.14	2.93*
Team	11.79			

Insignificant level at 0.05,  $t_{.05}(98) = 1.98$

It is evident from Table 3, that there statistically significant difference were found between the means of shuttle run (speed and agility) female players of individual and team games, as the obtained t-value of 2.93 was higher than the required value of  $t_{.05}(98) = 1.98$ .

**TABLE 4**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF STANDING BROAD JUMP OF FEMALE PLAYERS OF INDIVIDUAL AND TEAM GAMES**

Game	Mean	M.D.	$\frac{\sigma}{DM.}$	t-value
Individual	1.73			
		0.01	2.79	0.40
Team	1.72			

Insignificant level at 0.05,  $t_{.05}(98) = 1.98$

It is evident from Table 4, that there was no statistically significant difference between the means of standing Broad Jump (explosive strength of leg) female players of individual and team games, as the obtained t-value of 0.40 was less than the required value of  $t_{.05}(98) = 1.98$ .

**TABLE 5**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF 50 YARD RUN OF FEMALE PLAYERS OF INDIVIDUAL AND TEAM GAMES**

Game	Mean	M.D.	$\frac{\sigma}{DM.}$	t-value
Individual	10.06			
		0.47	0.18	2.63*
Team	09.59			

Insignificant level at 0.05,  $t_{.05}(98) = 1.98$

It is evident from Table 5, that statistically significant difference were found between the means of 50 yards (speed) female players of individual and team games, as the obtained t-value of 2.63 was high than the required value of  $t_{.05}(98) = 1.98$ .

**TABLE 6**  
**SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN SCORES OF 600 YARD RUN OF**  
**FEMALE PLAYERS OF INDIVIDUAL AND TEAM GAMES**

Game	Mean	M.D.	$\frac{\sigma}{DM}$	t-value
Individual	2.37			
Team	2.23	0.14	0.09	1.58

Insignificant level at 0.05,  $t_{.05(98)} = 1.98$

It is evident from Table 6, that statistically significant difference were not found between the means of 600 yard run (in minutes-sec.) female players of individual and team games, as the obtained t-value of 1.58 was less than the required value of  $t_{.05(98)} = 1.98$ .

## DISCUSSION

The analysis of data using t-ratio shows that variance exists between female players of individual and team games in their physical fitness components.

On all the six performance test for each sex i.e. Flex arm hang/pull-ups, sit-ups, shuttle run, standing broad jump, 50 yard dash and 600 yard run/walk did not found similar as a whole for female players of individual and team games, when they were compared on different component of AAHPER youth related physical fitness. It was observed that the female players of individual games were found better in three components of physical fitness i. e. sit-ups (abdominal strength), 50 yard dash (Speed) and 600 yard run (endurance) and poor in rest of the components of physical fitness as compared by female players of team games.

## CONCLUSION

Within the limitation of the present study, following conclusions were drawn:

1. Female players of individual games, were also better in sit-ups (abdominal strength), 50 yard dash (Speed) and 600 yard run (endurance) than female players of team games.
2. Female players of team game were found better in standing broad jump (Explosive strength of legs), shuttle run (Agility/coordination) and flex arm hang (Arm and shoulder strength) than female players of individual games.

## RECOMMENDATIONS

1. First and foremost, the study can be replicated on a large scale for better validation of results.
3. An exploratory study can be undertaken to find out the ways to increase efficiency of players of different nature of games.

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