

A Comparative Study of College and University Female Players on Motor Fitness Components and Physiological Components

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Abstract

The term "Sports" has been coined from the word "Disport" which means diverting oneself merely for fun or merry making. Sports now-a-days has changed with a lot of characteristics e.g. more scientific and mass oriented, well organized and mostly health directed, elevate mental and physical fitness of the participants, increase mental concentration, bring honor and social dignity to the successful participants. Physical fitness is one's richest possession, it cannot be purchased, and it has to be earned through a daily routine of physical exercise. Motor fitness is a present aptitude for physical skills, includes strength and co-ordination enriches today's Manpower in players performance. The study focuses on selected physiological variables and motor fitness components to ensure the playing ability among college and university level female players. The study concluded with a significant difference between physiological and motor fitness variables of university and college female players. The results from the present study suggest that there is a strong positive association between female players at both college and university level.

Keywords: Physical Fitness, Motor fitness, Vital Capacity, Blood pressure, Flexed Arm Balance

Introduction

Sport means all forms of physical activity which, through casual and organised participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels (Kansal, 1996).

Sports form an important aspect of life. They play a vital role in bringing about physical, mental and social growth of Individual. Sports are becoming increasingly sophisticated technically and gaining popularity as separate profession with expansion of educational facilities in the country.

More young people are taking part in sports as a daily feature of their life. The participation in sports and physical fitness increases an individual's productivity. It also promotes social harmony and discipline (Nixon & Jewelt, 1969).

In recent years, sports have begun to appear on the agenda of many countries and international bodies. An increasing array of actors, public and private-sector entities, corporations, community groups, sports federations, and athletes have been engaged in the field. In response to growing evidence that strengthening the right of students to play enhances their healthy development and builds stronger communities.

Present Status of Female Sports in Indian College and Universities

Sports are one area where India lags behind even some of the poorest nations in the world despite the huge pool of talented sports person that exists in all parts of India. At the junior levels, our boys and girls can compete with the best in the world in almost every sport. However when it comes to the senior levels (college and university), where the actual capabilities of our sports person are tested, we fail miserably. This shows that it is not the lack of talent that bogs down our athletes but somewhere along the line; it is the lack of proper training that lead to their poor performances in the international arena. The fact that professional sportswoman in our country face a lot of hardships cannot be denied. There are usual problems of lack of infrastructure and funds, lethargic approach on the part of government agencies and indifference of the corporate sector in providing sponsorships. However the fundamental problem lies in the absence of a sporting culture in India. Sports in India are considered a secondary and supplementary activity (Barrow & McGee, 1978).

Sports are an important segment of our country and also it is a prestige issue. Therefore, the government should take necessary efforts to reduce the problems of sports woman. College and University should enhance the sports activity especially for female players. By doing so, Indian sports will definitely achieve a lot in future. It should make all efforts to encourage young girls to take up sports as a full time profession and not as a secondary activity (Barrow & McGee, 1978).

Components of Sports Person

One of the misconceptions in the sports world is that a sports person gets in shape by just playing or taking part in his/her chosen sport. If a stationary level of performance, consistent ability in executing a few limited skills is your goal, then engaging only in your sport will keep you there. However, if you want the utmost efficiency, consistent improvement, and balanced abilities sportsmen and women must participate in year round conditioning programs.

The fitness components are qualities that athletes must develop to physically prepare for sport competition. They are the building blocks of exercise and physical activity. Sports training programs are designed to build these components in the proper proportions that match the requirements of each sport (Cambell, 1983)

- **Physical Fitness:** Physical fitness refers to the capacity of an athlete to meet the varied physical demands of their sport without reducing the athlete to a fatigued state. The components of physical fitness are Body Composition; Endurance; Flexibility; Strength and Speed (Mohr et al., 2003).
- **Motor Fitness:** Motor Fitness refers to the ability of an athlete to perform successfully at their sport. The components of motor fitness are Agility; Balance; Co-Ordination; Power and Reaction Time.

However, the word physical fitness and motor fitness are often used interchangeably. The term motor fitness was developed to describe a broad concept than physical fitness. This extensive term means the ability to perform basic motor.

Objectives of Study

Despite the world-wide popularity of the female sports, comparatively little scientific information is available concerning the physiological characteristics and motor fitness components of the college and university female participant. This study represents an initial attempt to define the motor fitness and physiological characteristics of the college and university female participant, thereby establishing a base line to which future investigations can be compared. In present study, the scholar wanted to investigate new scientific approach for boosting up performance of female players. Thus the main objective of the study is to compare the motor fitness

skills and physiological variables of female players at College and University level.

Hypotheses

It is hypothesized that there will be significant difference between physiological and motor fitness variables of university and college female players.

Methodology

Selection of subjects: For the purpose of the study 20 Female players were selected as subjects (10 college and 10 University level female players). The ICG College, Jaipur and University Teaching Department, Jaipur was selected for the test plan (Pre and Post test plan). The subjects were thoroughly acquainted with the testing procedure as well as the purpose and significance of the study.

Selection of Variables

Following physiological and motor fitness variables were performed for analysis:

- **Physiological variables:** (a) Vital Capacity (Measured by Spirometer); (b) Blood pressure (Measured by Sphygmomanometer); (c) Resting heart rate (Measured by counting the number of heart beats) and (d) Hemoglobin (Measures with hemoglobin measuring instrument) (Singh et al., 2012 & Dey et al., 1982)
- **Motor Fitness Variables:-** (a) Muscular strength and muscular endurance of arm shoulder (Flexed arm) (b) Trunk muscular strength and endurance (sit-ups) (c) Speed and agility (Shuttle run) (d) Explosive strength of legs (Standing and broad jumps) (e) Explosive strength (50 yds run) and (f) cardio vascular endurance. (Dey et al., 2010 & Del, 1968)

A thorough orientation of requirements during the testing procedures and performance test were made for successful completion of study. Statistical analysis was made with the help of mean, standard deviation and t-test was applied.

Results and Analysis

The major findings revealed through comparative analysis of data are as follows:-

Table 1: Means and t-values of Physiological Variables of College and University Female Players:

S.No	Physiological Variables	Pre Test Mean Score		Post Test Mean Score		(t) Value	
		College Players	University Players	College Players	University Players	College Players	University Players
1.	Blood Pressure Systolic	103.10	110.80	112.00	115.20	-2.414*	-2.318
2.	Blood Pressure Diastolic	60.90	31.50	73.00	73.00	-3.833*	-2.805
3.	Pulse Rate	81.20	78.80	77.200	73.00	2.011	2.902
4.	Vital Capacity Sitting	2200.00	2140.00	2295.00	2255.00	-0.603	-2.967
5.	Vital Capacity Standing	2260.00	2240.00	2395.00	2365.00	1.307	-5.00

Graph 1: Means and t-values of Physiological variables of College and University Female Players

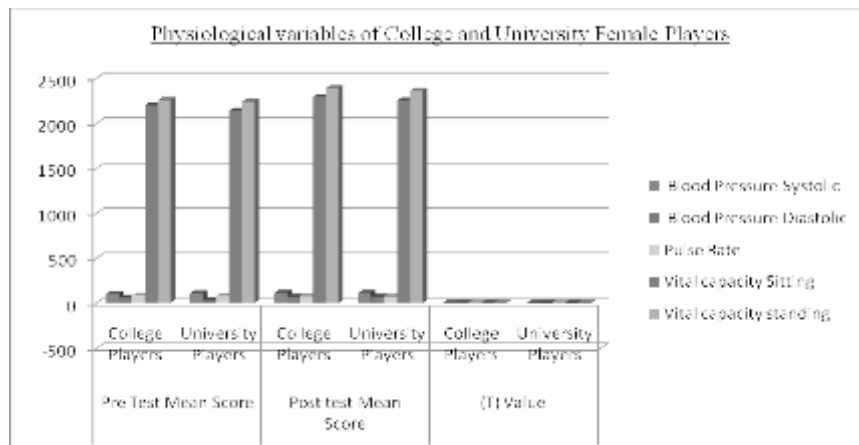


Table 2: Significance of different of means of Motor Fitness Components of College and University Female Player

S.No	Physiological variables	Pre Test Mean Score		Post test Mean Score		(t) Value	
		College Players	University Players	College Players	University Players	College Players	University Players
1.	Flexed Arm	6.800	13.400	8.700	15.6000	-5.019	-8.820
2.	Bent Knee Sit Up	26.800	29.400	30.900	32.700	-8.508	-9.851
3.	Shuttle Run 10yds	9.100	9.400	10.500	10.700	-6.332	-4.333
4.	Standing Broad Jump	1.5200	1.7270	1.562	1.7630	-5.900	-9.000
5.	50yds Run	8.527	7.4220	8.1889	7.100	3.105	3.728
6.	600yds Run	4.925	3.8540	4.800	3.7850	3.703	4.641
7.	Balance	10.600	12.650	14.600	15.400	-6.325	-4.093

Graph 2: Means and t-values of Motor Fitness Components of College and University Female Players

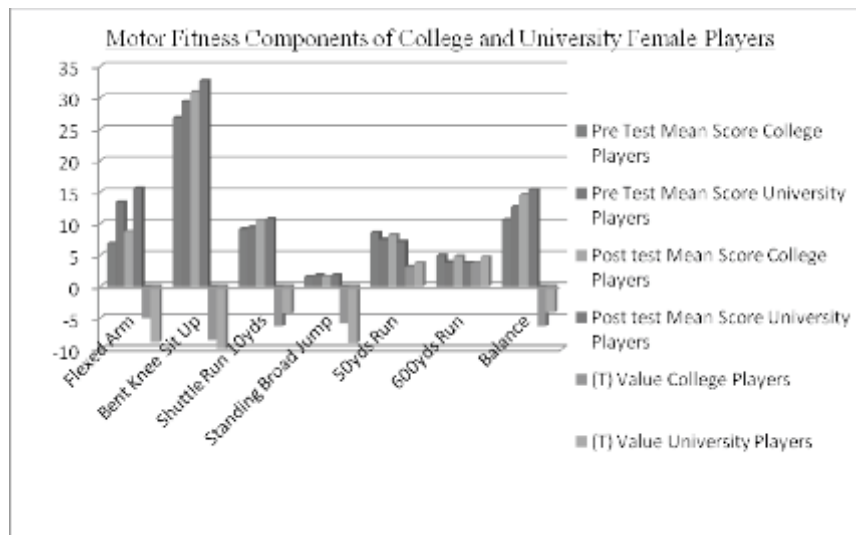


Table 3: Overall Analyses of Physiological Variables of College and University Female players Paired sample Test (Pre and Post test)

S.No	Physiological Variables	Mean	Std Deviation	t-Test	Sig(2- Tailed) Test
1.	Blood Pressure Systolic	-6.350	8.77	-3.235	0.004
2.	Blood Pressure Diastolic	-11.800	11.26	-4.684	0.000
3.	Pulse Rate	4.900	6.206	3.531	0.002
4.	Vital Capacity Sitting	105.00	-353.51	-1.328	0.200
5.	Vital Capacity Standing	130.00	-231.35	-2.513	0.021

Table 4 Overall Analyses of Moto Fitness Components of College and University Female Players Paired Sample Test (Pre and Post test)

S.No	Physiological Variables	Mean	Std Deviation	t-Test	Sig(2- Tailed) Test
1.	Flexed Arm	-2.050	0.998	-9.180-	0.000
2.	Bent Knee Sit Up	-1.3500	0.812	-7.429	0.000
3.	Shuttle Run 10yds	-0.0390	0.180	-9.671	0.000
4.	Standing Broad Jump	0.3165	0.290	4.878	0.000
5.	50yds Run	0.0915	0.075	5.406	0.000
6.	600yds Run	-3.375	2.108	-7.160	0.000
7.	Balance	-3.700	1.3416	-12.33	0.000

The Physiological variables were found to be significant at 0.05 levels. This value indicates that there was significant effect of physiological variables of College and University female players in B.P Systolic and Diastolic. The values of University players are more significant. Whereas the motor fitness components result was found to be significant at 0.05 levels, which indicates that all components are significant at college and university level female players.

Conclusion

The study shows the effect on physiological variables and motor fitness components among College and University level female players. In the present study, the players of University level showed better physical fitness and motor components, agility, speed and cardiac endurance than College level female players, though both were significant.

The results from the present study suggest that there is a strong positive association between female players at both college and university level. The

selected variables of cardiovascular endurance, speed, agility and explosive power objectively assessed physical activity. Overall, the associations observed presented a medium to large effect. These findings could be interpreted as an overall influence of female players on the physical fitness performance.

Author believe that this paper can contribute to safer and more efficient planning and programming of training with young college and university female players, because the results of tests can help to detect the basic motor abilities and physiological components that are predominantly responsible for the success of the performance of female player.

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