

# AN ANALYSIS OF MODERATE-INTENSITY AND HIGH-INTENSITY WORKOUT ABILITY AMONG INTERVARSITY LEVEL SPORTS PERSON

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## Abstract

*The purpose of this study is to investigate the difference between Volleyball, Football and Kabaddi players with respect to moderate intensity, workout ability and high-intensity workout ability. The case study incorporated a total of ninety male university level players of the above mentioned games, each aged between 19 to 24 years. The necessary data was collected by administering a 50 yard dash test for high-intensity workout ability and a 12 min run or walk test for moderate-intensity workout ability. The statistical technique employed is one way analysis of variance and turkey test has been applied to study significant difference at 0.05 levels.*

*Keywords: Moderate-Intensity, High-Intensity, Intervarsity, Football, Volleyball, Kabaddi.*

## Introduction

In the present day, world, games and sports are very much competitive. For the same, every competitor must enhance his technical and tactical abilities along with conditional and psychological abilities. Coaches try to help their players to maintain total fitness during the competition. Fitness is a highly pre-requisite for every sport. At present, the concept of fitness as 'an ability to carry out every day task with vigor and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies' is not being considered as an appropriate definition because of a change in life style as a direct result of influence of technology (Hockey,1993). Two phrases in common sports parlance with reference to fitness would be health related fitness and motor skill related fitness but in case of competitive sports, aerobic and anaerobic capacity is the fundamental component of fitness. Aerobic capacity describes the functional capacity of the cardio-respiratory system, (the heart, lungs and blood vessels). Aerobic capacity is defined as the maximum amount of oxygen the body can use during a specified period, usually during intense exercise. It is a function both of cardio-respiratory performance and of the maximum ability to remove and utilize oxygen from blood in circulation within the body. Anaerobic capacity is the ability to mobilize energy during activities of intense nature i.e. executing intensive work with explosive action in short duration of time, such as bursting speed in Football, Basketball, Kabaddi, Khokho, Hockey, smash of volleyball, take-off in jumps etc. But the requirement of fitness varies from game to game and games like Football and Kabaddi now are much in demand due to the promotion scheme by Indian Soccer League and Pro-Kabaddi.

**Methodology**

For the purpose of this study, ninety- (90) male players were selected from Vidyasagar University, West Bengal and Visva Bharati University, West Bengal i.e. thirty- (30) from each sport including Kabaddi, Football and Volleyball. Their age ranged between 19 to 24 years..

**Variables**

- a) Independent variables - variouss- Kabaddi, Football and Volleyball
- b) Dependent variables:-
  1. High intensity exercise ability
  2. Moderate intensity exercise ability

**Tests**

For the testing of high intensity exercise ability, “50 yard dash run” test was applied and moderate intensity exercise ability was tested by “12min run/walk (Cooper)” test.

**Analysis**

The data was analyzed and compared with the help of statistical procedure, within which descriptive statistics, one way Anova method used to compare data and to conduct further multiple comparisons, Post HOC Test Turkey test applied. The level of significance was set at  $p < 0.05$  level of confidence.

**Table 1: Descriptive Statistics and P value from the Anova Table**

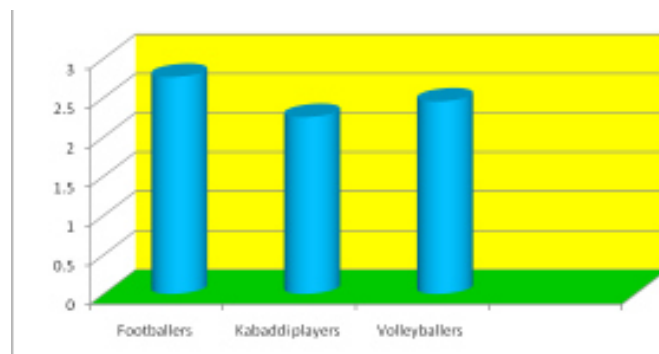
| Sports     | Mean | SD       | P value (Sig.) |
|------------|------|----------|----------------|
| Football   | 2.76 | ± .12895 | .000           |
| Kabaddi    | 2.25 | ± .07657 |                |
| Volleyball | 2.45 | ± .11219 |                |

**Table 2: Result of Post HOC test - Tukey HSD (Multiple Comparisons)**

Dependant Variable: Moderate intensity exercise ability

| (I) Various Sports | (J)Various Sports | Mean Difference (I-J) | P Value (Sig.) |
|--------------------|-------------------|-----------------------|----------------|
| Football           | Volleyball        | .31567* .000          | .000           |
|                    | Kabaddi           | .50800* .000          |                |
| Volleyball         | Football          | -.31567*              |                |
|                    | Kabaddi           | .19233* .000          |                |
| Kabaddi            | Football          | -.50800*              |                |
|                    | Volleyball        | -.19233*              |                |

**Figure 1: Mean plot of Moderate Intensity Exercise ability**



In the same way to find out high intensity exercise ability, Anova and Post HOC Turkey test were applied and result is displayed in table no.3 and table no. 4

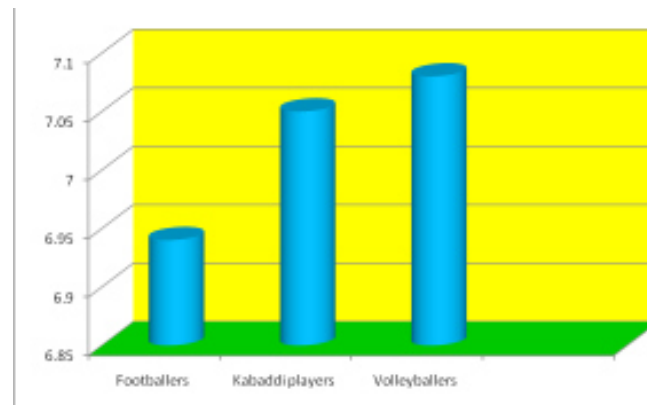
**Table 3: Descriptive Statistics & P value from the Anova Table**

| Sports     | N  | Mean | SD       | P value (Sig.) |
|------------|----|------|----------|----------------|
| Football   | 30 | 6.94 | ± .11224 | .000           |
| Kabaddi    | 30 | 7.05 | ± .07998 |                |
| Volleyball | 30 | 7.08 | ± .10128 |                |

**Table 4: Result of Post HOC test - Tukey HSD**

Dependent Variable: High intensity exercise ability

| (I) Various Sports | (J) Various Sports | Mean Difference (I-J) | P Value (Sig.) |
|--------------------|--------------------|-----------------------|----------------|
| Football           | Volleyball         | -.14067*              | .000           |
|                    | Kabaddi            | -.10800*              | .000           |
| Volleyball         | Football           | .14067*               | .000           |
|                    | Kabaddi            | .03267                | .410           |
| Kabaddi            | Football           | .10800*               | .000           |
|                    | Volleyball         | -.03267               | .410           |

**Figure 2: Mean Plot of High Intensity Exercise Ability**

### Discussion of Findings

After applying Anova, according to table no.1, we get P value of .000 which is less than 0.05. We can thus conclude that there is a difference in moderate intensity exercise ability among three sports. Again, HOC Turkey test was applied to find out the difference in moderate intensity exercise ability as per difference sports. In table no.2, we arrived at a P value, which in all cases, remained at .000 less than moderate intensity exercise ability. Lastly in descriptive statistics, (mean) we traced the game which accrues better ability to perform moderate intensity exercise. The Kabaddi players were shown to exhibit least moderate intensity workout ability.

After applying Anova, according to table no. 3, we got a P value of .000 which is less than 0.05 so, there can be traced a difference in high intensity exercise ability among the three sports. Then again, post HOC Turkey test was applied to substantiate the above claim. In table no.4, the results show a P value .000 less than 0.05 in most cases, but the comparison of Volleyball and Kabaddi, give us a P value of .410 which is greater than 0.05. We can conclude that there is no significant different in high intensity exercise ability among these three groups. Lastly, the outcome of descriptive statistics mean helped us discover that Volleyball and Kabaddi players are better equipped for a high intensity workout than footballers.

### Conclusion

This kind of a study is helpful in terms of practical application for coaches and sport researchers. In-season testing can provide coaches with useful information about the player's workout ability and characteristics so that they could place their member in specific training for better performance as an individual or as a team in a competition. The result shows a significant difference among these three game players in terms of moderate intensity, workout ability and high intensity workout ability. But in the case of high intensity workout ability, the difference between Volleyballers and Kabaddi players was statistically insignificant. Moderate and high intensity workout ability is equally important for total fitness so this study affords a clear view of the ability

of intervarsity level, different game players which can prove to be significant in chalking out training schedules for preparatory as well as transitional periods.

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