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A comparative study of vital capacity between urban and rural cricket players of Lucknow region

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Abstract

In the present study, an attempt has been made to compare vital capacity of physiological component between urban and rural cricket players of Lucknow region. The study was carried out on 100 male urban cricket players and 100 male rural cricket players in the age group of 18-25 years. The subjects were selected from different urban and rural cricket academies of Lucknow region, Uttar Pradesh. The data was collected by use of peak flow meter. The data was analyzed and compared with the help of statistical procedures in which arithmetic mean, standard deviation, t-test were employed. Urban and rural cricket players vital capacity was found a significantly difference.

Keywords: Vital capacity, physiology, urban cricket player, rural cricket player

Introduction

Physical education in both urban and rural areas of India plays a significant role in promoting health, fitness, and overall well-being among individuals of all ages. Urban areas typically have better access to modern sports facilities, fitness centers, and sports clubs, gyms, swimming pools, tennis courts, and other specialized facilities are more commonly found in urban regions. Rural regions might preserve and engage in traditional sports and games that are deeply rooted in their culture. These activities promote physical activity and social interaction.

Vital Capacity

Vital capacity is the total volume of air that can be exhaled from the lungs after taking the deepest possible breath. It represents the maximum amount of air you can move in and out of your lungs with a single breath. Vital capacity is calculated by adding together the inspiratory reserve volume (the extra air you can inhale after a normal breath), the tidal volume (the amount of air you breathe in and out with each normal breath), and the expiratory reserve volume (the extra air you can exhale after a normal breath).

Strukic (1981) defines vital capacity as a pulmonary measure that is frequently utilized to represent the capacity of the lungs. It is a vital fraction of the total lung capacity. It is also defined as the gigantic volume of air that can be blown out after the deepest attainable inhalation. It most likely represents a constitutional component of the body, similar to other anthropometric evaluations of body size, since it is known to co-ordinate well with a wide range of strength tests in young boys.

In the past, cricket was known by various names in different countries. It evolved from a basic game where an object was hit with a piece of wood. At its core, cricket is a contest between the bat and the ball, but its methods have changed over time. Today, cricket is played in many formats, including Test matches, One Day Internationals, First Class games, Twenty 20, Super Six, Indoor Cricket, as well as Double Wicket and Single Wicket matches. It is played in over 105 countries worldwide.

Objective

The purpose of the study was to compare the Vital Capacity between Urban and Rural Cricket Players of Lucknow Region.

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Methods

For the purpose of the investigation, the sample for the study were 100 male urban cricket players and 100 male rural cricket players in the age group of 18-25 years. The subjects were selected from different urban and rural cricket academies of Lucknow region, Uttar Pradesh. To test the vital capacity of the subjects, they were divided into two groups, find the vital capacity of urban and rural cricket players researcher used the peak flow meter. The test data had been collected, Vital Capacity was measured of every subject with the help of peak flow meter.

To examine the hypothesis of the study that there will be no significant difference in the vital capacity between urban and rural cricket players of Lucknow region, descriptive statistics and t-test analysis was employed for the present data.

Descriptive Statistics of Vital Capacity: Table no. 1 indicates the values of descriptive statistics of the urban and rural cricket players for vital capacity, which shows that the mean and Std. Dev. Values of urban and rural cricket players were 434.8 & 59.1 and 475.34 & 62.3 respectively.

Table 1: Vital capacity comparison between urban and rural cricket players

| Group | N | Mean Vital Capacity (ml) | Std. Dev. | T-Statistic | P-Value |
|-------|-----|--------------------------|-----------|-------------|---------|
| Urban | 100 | 434.8 | 59.1 | -3.409 | 0.0008 |
| Rural | 100 | 475.34 | 62.3 | | |

The t-test shows a significant difference in vital capacity ($t = -3.409$, $p < 0.05$) between urban and rural cricket players, with rural players having a higher average vital capacity.

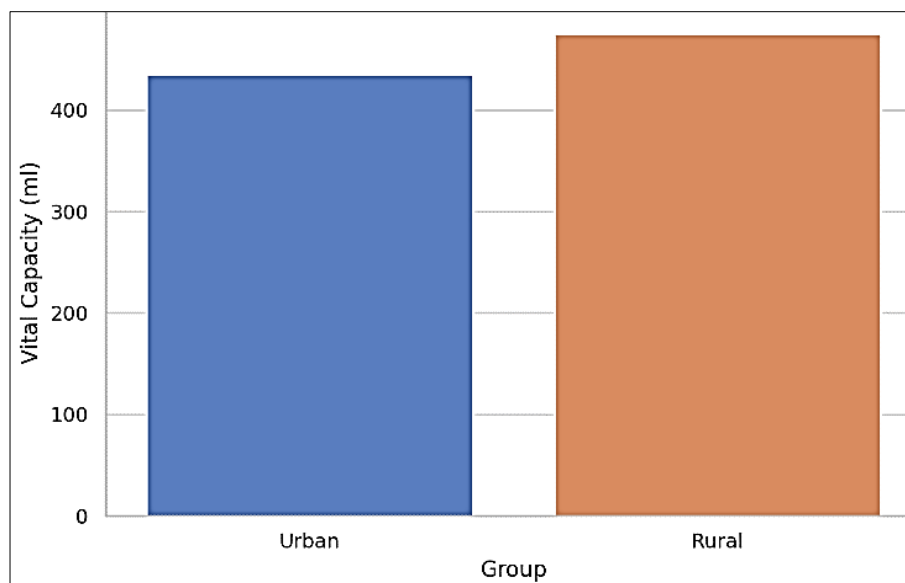


Fig 1: Comparison of vital capacity between urban and rural cricket players

Conclusion

In the present study it was concluded that Vital capacity is a crucial indicator of respiratory health and endurance. The significantly higher vital capacity in rural cricket players suggests that they might benefit from a lifestyle that promotes better lung function, such as frequent engagement in physical activities in cleaner air environments. Enhanced lung capacity can be a critical factor in athletic performance, as it allows for better oxygen delivery to muscles during intense physical activities, thus improving endurance and recovery.

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