



A COMPARATIVE STUDY ON VITAL CAPACITY OF UNIVERSITY LEVEL BASKETBALL AND VOLLEYBALL Players"

KEYWORDS

Vital Capacity, Basketball players, volleyball players.

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ABSTRACT

Purpose of the study was to compare the mean vital capacity of male basketball and volleyball players of STM University Nagpur and Gondwana University Gadchiroli. For this purpose (N=50) fifty male subjects (25 each basketball and volleyball) were selected from various stadiums and degree colleges. The vital capacity assessed by Dry Spiro - meter. One tailed 't' test was applied on gathered data. Finding of study revealed that significant difference was exist in mean vital capacity between male basketball and volleyball players of University Players.

Introduction

Excellence in sports is, indeed, an aspect of complex human performance, which has several dimensions. Hence, several disciplines of sports science are required to work in a coordinated manner to explore the nature of sports performance and the process of its improvements. In the last few decades, several disciplines of sports sciences have been established. They are Kinanthropometry, Sports physiology, Sports medicine, Sports training, Sports psychology, Sports pedagogy, Biomechanics etc. these sports sciences work as an integrated whole to give a superb sports performance.

Vital capacity (VC) is the maximum amount of air a person can expel from the lungs after a maximum inhalation. A person's vital capacity can be measured by a wet or regular spirometer. In combination with other physiological measurements, the vital capacity can help make a diagnosis of underlying lung disease. Lung volumes and lung capacities refer to the volume of air associated with different phases of the respiratory cycle. Lung volumes are directly measured, whereas lung capacities are inferred from volumes. Exercising will increase vital capacity because the muscles require additional nutrients when they perform tough exercise, which requires the lungs to take in more oxygen. The lungs will need to expand further to take in this extra oxygen which will increase vital capacity. Consistent exercises can also improve the overall health of your lungs. High elevation exercise is another great way to increase vital capacity because there is a lack of oxygen readily available. High altitude training is training that occurs around 2,500 meters above sea level and will force your lungs and the rest of the body to work at a much harder pace in order to support the body.

Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to engage in leisure pursuits and to meet emergency situations.

Volleyball is a widely played game in India. It is played out door and indoor between teams, in which six members in each side seek to score points in the course of hitting a ball back and forth across the net within the playing area.

Manilal et al (1990) compared the coordinative abilities of female junior Indian basketball (N=21) and junior Indian volleyball (N=21) players. The findings revealed that the basketball players had better differentiation ability and were also superior in balance ability than the volleyball players. The volleyball players were found to be better in space orientation and reaction ability than the basketball players.

Sreejit (1983) compared basketball, volleyball and badminton players in reaction time and multilimb coordination. The findings of the study revealed that basketball and volleyball players had marked

difference in their hand reaction timings. The basketball, volleyball and badminton players did not show any variation in their multilimb coordination.

Shamim and Singh (2002) carried out a study to ascertain the difference between physical and physiological variables of high and low performance basketball players and found that the high performance basketball players had greater height, weight, lower leg, thigh, upper arm and lower arm length. They had greater shoulder and hip width and greater calf and biceps muscle girth with greater diameter of humerus and femur biepicondyle. They are meso-ectomorph and their sitting height is greater than low performance basketball player. They had lesser sum of four-skin folds measurement than that of low performance basketball players. High performance basketball player had better body proportionality in relation to mechanical advantage. They also had lesser heart rate and greater vital capacity. However there was no significant difference in the blood pressure of high and low performance basketball players.

Khan and Singh (2005) Carried out a study to ascertain the differences between high and low performance volleyball players in relation to their Anthropometrical and physiological variables and found that the selected National or high level performance volleyball players were taller, heavier in proportion to stature, broader shoulder, wider hip, longer upper and lower extremities than the low performance volleyball players. They had lesser rating of endomorphic and mesomorphic components but a higher rating of ectomorphic component. The fat free mass was also greater in the high performance volleyball players.

Bag A., Borman. A. S., Das. S., and Chawdhury Binod (2015) conducted study to investigate the level of physical fitness of volleyball player and football player in university level. For the present study 15 male volleyball players and 15 male football players were selected randomly and they had participated in university competition in 2004 from Jadavpur University. Age group of the subjects was 18-24 years. To find out the physical fitness APHERED Youth Physical Fitness Test were conducted. For comparison of various physical fitness components of volley ball players and football player independent t-test has done and level of significance has verified at 0.05 levels. Finding reveals that cardiovascular endurance of football player (1.82 min.) was higher than volleyball player. Thus concluding The physical fitness of football player was higher than the volleyball player.

SELECTION OF SUBJECTS:

For the purpose of the study district level (N=50) fifty male basketball and volleyball players (25 each of Basketball and volleyball) were selected from SRTM University Nagpur and Gondwana University, Gadchiroli. There age range between 20-28 years.

ADMINISTRATION OF TEST

To assessing the Vital Capacity of University level male basketball and volleyball players the Dry Spirometer was used. The dry Spirometer was holding with both the air was inhaling forcefully after the mouth piece of spirometer was place inside the mouth and forcefully exhale air inside the spirometer. The lung capacity was calculated in cubic centimeter.

ANALYSIS OF DATA

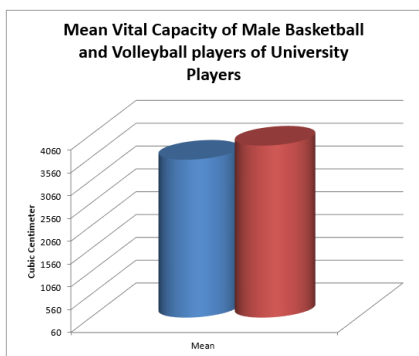
Retreating the objective of the study for comparing mean vital Capacity of University level male basketball and volleyball players, T – test was applied on gathered data. The level of significance was .05 percent.

Table – 1

	Basketball Players	Volleyball Players	T-Value
Standard Deviation	518.0090089	626.178888	1.894986971
Mean	3520	3828	

Insignificant at .05 level of significance Tab. $t_{.05} = [2.000]$
 Since calculated 't' (1.894) is less than tabulated 't' value (2.00) at .05 level of significance. We may accept our hypothesis. Thus we are able to concluded that vital capacity of Male Basketball players and volleyball players are same.

Figure – 1



DISCUSSION OF FINDINGS

Since one tailed 't' test revealed that mean vital capacity of basketball players is insignificantly greater than mean vital capacity of volleyball players.

Similar results also find by **Tiwari & Singh (2012)** in their study were to compare the physical and physiological variables among the inter district and Inter State level of Basketball players. The data collected on the different levels of basketball players were analyzed by independent "t" test. It was found that the inter state level players were better than inter district players with respect to speed, power and endurance. Greater training adaptations are more likely to occur due to a potentially detrained state during preparatory phase. Secondly, the difference could also be due to the shorter duration training programme in the present study compared to others (Chamari et al. 2005).

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