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# Anthropometric and Physical Fitness Components between Volleyball and Basketball Players of Davanagere University

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**Abstract**
Sports are one of the facets of human life which contributes in the overall development of both physique and psychology. Anthropometry in sports is about the estimations of body size, piece and shape and their effect on the performance of the players. Sports psychology manages the conduct of sportspersons and groups occupied with sports. The study was conducted with 200 male sports persons 100 each from Volley ball and Basketball. The study is a comparative analysis of anthropometrical variability, Psychological Parameters and Physical variables of the selected Volleyball and Basketball players based on their performance in the south zone inter university competitions. The results of the study show that there is significant difference in all the compared parameters between Volleyball and Basketball players in the sample taken. This study has its significance for the further research, selection and training of players in Volley ball and Basket Ball sports.

**Keywords:** Anthropometric Analysis, Sports Psychology, Physical Fitness, Volley Ball, Basket Ball, Physical Education

## Introduction
Sports or sport is by and large a few types of games or competitive physical activity (Sport Accord, 2009) which keeps up coordinated investment and improves the physical ability and skills of participants, while at the same time giving delight to the participants and much of the time engage onlookers too (Council of Europe, 2001). As indicated by an international sports federation named Sport Accord (2009), sport ought to have a component of rivalry, ought not to damage any living animal whatsoever, and ought not to depend on any luck component especially planned into the sport. As per Council of Europe (2001), sport signifies "all types of physical activity which, through easygoing or coordinated interest, target communicating or improving physical fitness and mental prosperity, framing social connections or getting brings about rivalry at all levels". Regularly the game or challenge is between different sides, where each side attempts to surpass the other.

## Anthropometry in Sports
Anthropometry in sports is worried about the estimations of body size, piece and shape. It is the logical phrasing for the estimation of human. The term anthropometry was begat in 1835 by Belgian space expert A. J. Quetelet when he distributed information on the stature weight estimations of male and female subjects, all things considered. The word is produced using two Greek words: anthros implies man and metron intends to quantify (Ulajaszek, 1994). Subsequently, as per Ulajaszek (1994), anthropometry is the logical investigation which includes estimation of human body and its parts with normalized techniques.

## Psychology in Sports
Psychology is the study of study of conduct. The term psychology is gotten from two Greek words: 'mind' which implies soul‟ and 'logia' which implies to study‟. In present day world, for psychology, the word soul has been viewed as inseparable from the word cerebrum or conduct. Thus, psychology is the scientific study of human conduct alongside the mental and physiological cycles influencing it. As indicated by Reber (1995), psychology assists with comprehension "the personalities and practices of different organic entities from the most crude to the most intricate" (p. 617). Psychology is the scientific study of brain and conduct corresponding to a particular field of information or activity (Merriam-Webster Dictionary, 2018a).
In sports, the standards of psychology are applied at the levels of ability improvement of sportspersons. Sports psychology manages the conduct of sportspersons and groups occupied with sports. Singh, Bains, Gill and Brar (2012) characterize sports psychology as "that part of psychology which is personally associated with human conduct on the play field, both under

training and competitive circumstances, with the end goal of achieve subjective improvement in execution and keep up the equivalent in any event, during the burdens of rivalry.

## Methodology

### Selection of the Subjects

For the purpose of study, total number of 200 male sportspersons, 100 Volleyball and 100 Basketball each, were intentionally selected to participate in South Zone Inter University of Davanagere University players. The age range of the subjects selected was from 18 to 28 years. All subjects had least participated in south zone inter university levels.

### Statement of the Problem

The problem of this study is entitled as: "Anthropometric and Physical Fitness Components between Volleyball and Basketball Players of Davanagere University".

### Objectives of the Study

1. To compare the anthropometrical variables between male players of Volleyball and Basketball.
2. To find out the difference in psychological variables between male players of Volleyball and Basketball.
3. To analyze the difference in physical variables between male players of Volleyball and Basketball.

### Hypotheses of the Study

For the present study the hypotheses were framed. It was hypothesized that:

### Delimitations of the Study

Study was delimited to anthropometrical, psychological and physical variables which are mention below.

### Anthropometrical variables

1. Height
2. Body weight
3. Humerus bicondylar diameter
4. Femur bicondylar diameter
5. Upper arm circumference
6. Calf circumference
7. Triceps skinfold
8. Subscapular skinfold
9. Suprailiac skinfold
10. Calf skinfold

### Psychological variables

1. Self-confidence
2. Aggression
3. Socio Economic Status

### Physical variables

1. Speed
2. Agility
3. Explosive power
4. Muscular strength
5. Cardiovascular endurance
6. Flexibility

The study was delimited to 200 male players– 100 Volleyball and 100 Basketball players. The study was delimited only to male players. The study was further delimited to the age group of 18 to 28 years of the subjects. The subjects were selected to participate in the south zone inter university competitions.

### Limitations of the Study

The other variables such as home environment, daily routine, life style, diet, habits, individual's health, personal tension, socio-economic and stress could not be controlled during this study.

## Results

**Table 1:** Sample composition of the study

| Subjects | Level | No. of sample |
|---|---|---|
| Volleyball | Inter University | 100 |
| Basketball | Inter University | 100 |
| | Total | 200 |

**Table 2:** Anthropometrical variables and instruments of the study

| Sr. No. | Anthropometrical variable | Instrument | Unit |
|---|---|---|---|
| | **A. General body measurements :** | | |
| 1. | Height | Anthropometer rod | M |
| 2. | Body weight | Weighing machine | Kg |
| | **B. Skeletal diameters :** | | |
| 3. | Humerus bicondylar diameter | Sliding caliper | cm |
| 4. | Femur bicondylar diameter | Sliding caliper | cm |
| | **C. Circumferences :** | | |
| 5. | Upper arm circumference | Gulick tape | cm |
| 6. | Thigh circumference | Gulick tape | cm |
| | **D. Skin fold measurement :** | | |
| 7. | Triceps skinfold | Skinfold caliper | mm |
| 8. | Subscapular skinfold | Skinfold caliper | mm |
| 9. | Suprailiac skinfold | Skinfold caliper | mm |
| 10. | Calf skinfold | Skinfold caliper | mm |

**Table 3:** Reliability Coefficients of Test Retest Scores

| Sr. No. | Test Item | Coefficient of correlation, r |
|---|---|---|
| 1. | Height | .97* |
| 2. | Body weight | .96* |
| 3. | Humerus bicondylar | .92* |
| 4. | Femur bicondylar | .97* |
| 5. | Upper arm circumference | .99* |
| 6. | Calf circumference | .96* |
| 7. | Triceps skinfold | .96* |
| 8. | Subscapular skinfold | .95* |
| 9. | Suprailiac skinfold | .95* |
| 10. | Calf skinfold | .93* |

## Conclusions

1. There is significant difference of self-confidence between volleyball and basketball inter university male players of south zone.
2. There is significant difference of aggression between the volleyball and basketball inter university male players of south zone.
3. There is significant difference of SES between volleyball and basketball inter university male players of south

zone.

4. There is significant difference of speed between volleyball and basketball inter university male players of south zone.
5. There is significant difference of agility between volleyball and basketball inter university male players of south zone.
6. There is significant difference of muscular strength between volleyball and basketball inter university male players of south zone.
7. There is significant difference of explosive power between volleyball and basketball inter university male players of south zone.
8. There is significant difference of cardiovascular endurance between volleyball and basketball inter university male players of south zone.
9. There is significant difference of flexibility between volleyball and basketball inter university male players of south zone.

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