

# Comparative Study of Cardio-Vascular Endurance, Flexibility and Body Composition Parameters of Male Physical Education Teachers of Different Districts in Gujarat

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## Abstract

The present study has been conducted with a view to investigate the trend of academic research in Physical Education in Indian Universities, submitted by Post-Graduate students during their master's programme. In this research, it was found that though the academic research made in various Indian Universities has been centered on individual practice, yet research title have been transformed from theoretical translation to step in an intensive study on objective facts. This study was conducted on master's dissertations submitted by the Post-Graduate students during their master's programme in various Indian Universities for their academic purposes.

**Key words: Physiology, Psychology and Sports Training**

## Introduction

Cardio-respiratory fitness is a major component of health-related fitness and depends on a large number of phenotypes associated primarily with cardiac, vascular and respiratory functions. Measurements of sub-maximal exercise capacity and maximal aerobic power are generally performed to assess cardio-respiratory fitness. Body mass index (BMI) is a statistical measure of an individual's weight scaled according to his height. It is a simple index of weight-for-height and is widely used by medical, health and fitness professionals to classify underweight, overweight and obesity in adults. BMI is a useful tool and for most individuals is an accurate way to classify weight, but it should be used along with other measurements as it does have limitations. However, individuals can calculate their BMI without the use of expensive equipment or special knowledge. BMI is calculated by dividing weight (in kilograms) by height (in

meters) squared. The World Health Organization defines overweight as a BMI of 25.0 to 29.9 and obesity as a BMI greater than 30. A BMI value of 19.5 to 24.9 is considered normal, and less than 18.5 is defined as underweight. For children and adolescents, weight status must be determined through comparison of the child's BMI with age- and gender-specific values (BMI growth curves). Our bodies are made up of a lot of different kinds of tissues (plus a lot of water). There is muscle, fat, bone, and specialized tissue such as is in our various organs. The body fat percentage is just that – the percentage of our weight which is made up of fat. Body fat percentage is similar to terms such as *body fat ratio* and *body composition*. The review of literature indicates that with an increase in age there is a decline Cardio respiratory fitness that is related to cardiovascular endurance, flexibility and body composition parameters of male physical education teachers of different districts in Gujarat.

### Delimitations

The study was delimited to ninety physical education teachers those who came to attend the state level orientation course for physical education teachers, sponsored by Sports Authority of Gujarat and organized by Mahadev Desai Sharirik Shikshan Mahavidyalay, Gujarat Vidyapith, Sadra Dist. Gandhinagar, (Gujarat). Those who volunteered to participate in the study were selected randomly and divided into three groups districtwise respectively viz. Ahmedabad (N=30), Gandhinagar (N=30) and Sabarkantha (N=30) district.

### Limitations

Previous abilities, individual's capabilities and effect of individuals difference was considered as limitation of this study.

### Materials & Methods

Initially selected ninety male physical education teachers who volunteered participated in this study. All the participants those who came in state level orientation course for physical education a teacher (granted by Sports Authority of Gujarat) that was organized by Mahadev Desai Sharirik Shikshan Mahavidyalay, Gujarat Vidyapith, Sadra

Dist. Gandhinagar, (Gujarat). All the important and required information was given to participants and age was checked by their service record. All the subjects were screened and homogenized for absence of any diseases like cardiovascular disease, cardio-respiratory disease and any serious diseases and then divided into three groups districtwise respectively viz. Ahmedabad (N=30), Gandhi nagar (N=30) and Sabarkantha (N=30), their cardiovascular endurance was measured by Cooper's 12 minute run and walk test, flexibility measured by sit and reach test and body composition like Body mass index (BMI), Fat Mass (FM), Fat Percentage (Fat%), Total Body Water (TBW), Impedance( $\Omega$ ) and Body Weight (W) measured by Body Composition Analyzer, height measured by stadiometer

### Statistical Analysis

For statistical analysis of data to find out the comparison of cardiovascular endurance, flexibility and body composition parameters of male physical education teachers of different districts in Gujarat, One way analysis of variance (ANOVA) F-test was applied. The level of significance in the study was chosen at 0.05.

**Table-1: Cardiovascular Endurance, Flexibility and Body Compositional Parameters Characteristics of the Physical Education teachers (PET) of different Districts in Gujarat**

Sr. No.	Parameters	Ahmedabad District (PET)	Gandhinagar District (PET)	Sabarkantha District (PET)	F- Value
		Mean	Mean	Mean	
1	Cardiovascular Endurance	1713.8	1773	1763.9	0.28
2	Flexibility	25.7	20.86	23.96	3.62*
3	Body Mass Index	24.23	24.23	23.2	1.12
4	Body Weight	68.4	69.73	67	0.76
5	Fat Mass	14.39	14.27	13.18	0.49
6	Age	42.9	37.83	40.56	3.75*
7	Total Body Water	39.62	40.18	39.34	0.50
8	Impedance	532.3	538.26	549.76	0.66
9	Fat Percentage	20.68	20.04	19.21	0.58
10	Height	168	169.3667	169.03	0.54

### Results & Discussion

Table 1 enlists the mean values of various health related measures and also

compares the means statistically using ANOVA. Findings of the study demonstrate significant difference between the three groups of physical education teachers of three districts of Gujrat in flexibility (Ahmedabad (Amd) = 25.7, Gandhinagar (GN) = 20.86 and Sabarkantha (SK)= 23.96 and f-value 3.62 ) and age parameter (Amd = 42.9, GN = 37.83 and SK = 40.56 and f-value was 3.75) but no significant differences were observed in cardio-vascular Endurance, Body Mass Index, Body Weight, Fat Mass, Total Body Water, Impedance, Fat Percentage and Height between physical education teachers of different districts in Gujarat.

The obtained result suggested that there was significant difference between Ahmedabad, Gandhinagar and Sabarkantha physical education teachers in flexibility and age parameters but there were non significant differences in cardio-vascular Endurance, Body Mass Index, Body Weight, Fat Mass, Impedance, Fat Percentage and Height between physical education teachers of different districts in Gujarat. The reason behind this was age factor because average of age was 38 to 43 when the age of all the physical education teachers was approximately same then all the parameter can be same that's why maximum body

composition parameters indicate no significant difference in all the groups. An other reason can be that, state government selected experienced middle age physical education teacher for orientation course. The Body Mass index, Body Weight, Fat Percentage, Total Body Water, Impedance and Fat Percentage of all the Physical Education Teachers was in normal range. So according to result of the study we can say that all the Physical Education Teachers of different districts in Gujarat neither have neither more Physical fitness nor less physical Fitness.

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