



AN INVESTIGATION ON SOCIO-ECONOMIC STATUS AND SELECTED ANTHROPOMETRIC VARIABLES ON SPORTS PERFORMANCE OF GULBARGA UNIVERSITY AND DAVANAGERE UNIVERSITY ATHLETES

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ABSTRACT :

In sport, the characteristics of physical, physiological, psychological, sociological and anthropometrical are functionally associated with the performance of a player or an athlete. Considering the requirements of these characteristics in sport, each sport has its own entity since they differed from one another in nature. Meanwhile, though a particular sport has been defined in the requirements of these characteristics, within variance in spot may arise because of variations exist among the players of particular



sport in terms of physical, sociological and anthropometric aspects. Today it has been widely accepted by the experts that top performance in sports is achieved if an athlete possesses the basic anthropometric characteristics suitable for the event. There are numerous factors which are responsible for the performance of a sportsman. Socio-economic status (SES) and Anthropometric measurements are important determinants of sports performance and various studies shown that lower SES and higher SES have significant effect on the sports performance in the background of socio-economic conditions of athletes and also body anthropometric measurements are the predictors of sports performance and various studies shown that players with same height and weight may not be similar in the efficiency of execution of movement and sustainable capacities since the segments of body part are varied in terms of its length, width, and circumference. The main purpose of the study is to compare the selected anthropometric measurements and socio-economic status of intercollegiate sports persons of Gulbarga University and Davanagere University respectively. Further to find out the relationship of anthropometric measurements and socio-economic status in relation to their performance between Gulbarga University and Davanagere University respectively.

To achieve the purpose of the study 80 inter-collegiate athletes in the age group 18 to 28 years studying in UG and P.G. Colleges affiliated to Gulbarga University and Davanagere University respectively were selected as subjects by random sampling method. The socio-economic status and selected anthropometric variables such as body arm length and leg length, calf and thigh circumferences of inter collegiate sportsman were measured. The performance of 100 mtrs Running event is taken in form of time.

It is concluded that there is a significant difference between in Calf and Thigh circumference, Arm length and Leg length among Gulbarga University and Davanagere University athletes. There is no influence of Socio economic status on the performance in the 100 mtrs event of Gulbarga University and Davanagere University athletes. Further there is a significant relationship between Socio economic status, Anthropometric variables and performance of Gulbarga University and Davanagere University athletes.

KEYWORDS : *Anthropometric measurements, Socio-economic status, Sports performance.*

INTRODUCTION

In sport, the characteristics of physical, physiological, psychological, sociological and anthropometrical are functionally associated with the performance of a player or an athlete. Considering the requirements of these characteristics in sport, each sport has its own entity since they differed from one another in nature. Meanwhile, though a particular sport has been defined in the requirements of these characteristics, within variance in sport may arise because of variations exist among the players of particular sport in terms of physical, sociological and anthropometric aspects.

In athletes, body composition measures are widely used to prescribe desirable body weights, to optimize competitive performance, and to assess the effects of training (Sinning, 1996). It is generally accepted that a lower relative body fat is desirable for successful competition in most of the sports. This is because additional body fat adds to the weight of the body without contributing to its force production or energy producing capabilities, which means a decrease in relative strength. It is obvious that an increased fat weight will be detrimental in sporting activities where the body is moved against gravity (e.g. high jump, pole vault, volleyball spiking action) or propelled horizontally (e.g. running).

Today it has been widely accepted by the experts that top performance in sports is achieved if an athlete possesses the basic anthropometric characteristics suitable for the event. There are numerous factors which are responsible for the performance of a sportsman.

The physique and body composition, including the size shape and form are known to play a significant role in this regard. At present, sportsman for superior performance in any sports is selected on the basis of physical structure and body size. Structural measurement include anthropometric measurements which consist of objective measurement of structures such as height, weight, width, depth and the circumference of the various part of body.

Socio-economic status (SES) and Anthropometric measurements are important determinants of sports performance and various studies shown that lower SES and higher SES have significant effect on the sports performance in the background of socio-economic conditions of athletes and also body anthropometric measurements are the predictors of sports performance and various studies shown that players with same height and weight may not be similar in the efficiency of execution of movement and sustainable capacities since the segments of body part are varied in terms of its length, width, and circumference.

Keeping in view of above facts the present study is designed as an investigation on socio-economic status and selected anthropometric variables in relation to sports performance of inter-collegiate sportsmen.

PURPOSE OF THE STUDY:

The main purpose of the study is to compare the selected anthropometric measurements and socio-economic status of intercollegiate sports persons of Gulbarga University and Davanagere University respectively. Further to find out the relationship of anthropometric measurements and socio-economic status in relation to their performance between Gulbarga University and Davanagere University respectively.

OBJECTIVES OF THE STUDY:

- To compare the selected anthropometric measurements and socio-economic status of intercollegiate sports persons of Gulbarga University and Davanagere University respectively.
- To find out the anthropometric measurements relationship to their performance between Gulbarga University and Davanagere University respectively.
- To find out the socio-economic status relationship to their performance between Gulbarga University and Davanagere University respectively.

MATERIALS AND METHODS:

To achieve the purpose of the study 80 inter-collegiate athletes in the age group 18 to 28 years studying in UG and P.G. Colleges affiliated to Gulbarga University and Davanagere University respectively were selected as subjects by random sampling method.

The socio-economic status and selected anthropometric variables such as body arm length and leg length, calf and thigh circumferences of inter collegiate sportsman were measured. The performance of 100 mtrs Running event is taken in form of time.

RESULTS AND DISCUSSIONS:

1. The comparisons (paired t-test) on Calf Circumference among Gulbarga University and Davanagere University athletes.

Table.No.1

The comparisons (paired t-test) on Calf Circumference between Gulbarga University and Davanagere University athletes

Paired Samples Statistics (Calf Circumference)						
Pair	Groups	Mean	N	Std. Deviation	t-value	Sig. (2-tailed)
Pair 1	GUK	22.83	40	8.02	4.26*	.000
	DU	18.56	40	6.12		

*Significant at the 0.05 level.

It can be observed from the table.No.1 that the value t-statistics 4.26 of paired samples test between the Gulbarga University and Davanagere University athletes respectively. The t-value is significant as the p-value (.000) is less than 0.05. Thus, it can be concluded that the mean value of calf circumference between Gulbarga University and Davanagere University athletes is not similar. In other words there is significant difference in calf circumference between above said university athletes.

2. The comparisons (paired t-test) on Thigh Circumference among Gulbarga University and Davanagere University athletes.

Table.No.2

The comparisons (paired t-test) on Thigh Circumference between Gulbarga University and Davanagere University athletes

Paired Samples Statistics (Thigh circumference)						
Pairs	Groups	Mean	N	Std. Deviation	t-value	Sig. (2-tailed)
Pair 2	GUK	44.56	40	2.48	6.05*	.000
	DU	39.04	40	1.82		

*Significant at the 0.05 level.

It can be observed from the table.No.1 that the value t-statistics (6.05) of paired samples test between the Gulbarga University and Davanagere University athletes respectively. The t-value is significant as the p-value (.000) is less than 0.05. Thus, it can be concluded that the mean value of thigh circumference between Gulbarga University and Davanagere University athletes is not similar. In other words there is significant difference in thigh circumference between above said university athletes.

3. The comparisons (paired t-test) on Arm length among Gulbarga University and Davanagere University athletes.

Table.No.3

The comparisons (paired t-test) on Arm length between Gulbarga University and Davanagere University athletes

Paired Samples Statistics (Arm length)						
Pairs	Groups	Mean	N	Std. Deviation	t-value	Sig. (2-tailed)
Pair 3	GUK	56.24	40	1.24	8.12*	.000
	DU	52.14	40	1.07		

*Significant at the 0.05 level.

It can be observed from the table.No.1 that the value t-statistics (8.12) of paired samples test between the Gulbarga University and Davanagere University athletes respectively. The t-value is significant as the p-value (.000) is less than 0.05. Thus, it can be concluded that the mean value of thigh circumference between Gulbarga University and Davanagere University athletes is not similar. In other words there is significant difference in thigh circumference between above said university athletes.

4. The comparisons (paired t-test) on Leg length among Gulbarga University and Davanagere University athletes.

Table.No.4

The comparisons (paired t-test) on Leg length between Gulbarga University and Davanagere University athletes

Paired Samples Statistics (Leg length)						
Pairs	Groups	Mean	N	Std. Deviation	t-value	Sig. (2-tailed)
Pair 4	GUK	85.68	40	3.14	5.58*	.000
	DU	82.14	40	2.90		

*Significant at the 0.05 level.

It can be observed from the table.No.1 that the value t-statistics (5.58) of paired samples test between the Gulbarga University and Davanagere University athletes respectively. The t-value is significant as the p-value (.000) is less than 0.05. Thus, it can be concluded that the mean value of thigh circumference between Gulbarga University and Davanagere University athletes is not similar. In other words there is significant difference in thigh circumference between above said university athletes.

5. Influence of Socio Economic Status on the performance of Gulbarga University and Davanagere University athletes.

To find out the influence of socio economic status on the performance of Gulbarga University and Davanagere University athletes the researcher used the descriptive statistical method like paired t-test with the help of socio economic status scores and performance scores of athletes and presented in the following ways,

Table.No.5

Mean, Std. Deviation and t-values between 100 mtrs performance scores of Gulbarga University and Davanagere University athletes

Level of Factor	Groups	N	Mean in secs	Std. Deviation	t-value
High SES	GUK	40	12.59	0.92	1.46
Low SES	DU	40	13.35	0.80	

Table.No.5 presents the paired samples Mean, Std. Deviation and t-values between 100 mtrs performance scores of Gulbarga University and Davanagere University athletes. The mean score of GUK athletes in 100 meters event (12.59) is lower than the mean score of DU athletes (13.35) and t-values (1.46) is not significant at 0.01 level. In other words it is interpreted that the Gulbarga University and Davanagere University athletes' performance in 100 meters event is almost similar.

6. Relationship between Socio Economic Status, Anthropometric Variables and 100 mtrs Performance of Gulbarga University and Davanagere University athletes.

To find out the relationship between Socio Economic Status, Anthropometric variables and 100 mtrs performance of Gulbarga University and Davanagere University athletes the researcher used the Pearson correlation co-efficient (r-values) statistical method with the help of Anthropometric variables scores and 100 mtrs performance scores presented in the table 1 following ways,

Table.No.6
Correlation co-efficient (r-values) of variables

S.N	Variable and Performance	r-values
	Anthropometric variables & 100 meters scores	0.82**
	Socio Economic Status & 100 meters scores	0.76**

**Significance at 0.01 level

Table.No.6 shows the r-values between the Socio Economic Status, Anthropometric variables and 100 mtrs performance of Gulbarga University and Davanagere University athletes. It can be observed that the correlation co-efficient (r-values) between Socio Economic Status 100 mtrs performance scores, Anthropometric variables and 100 mtrs performance scores of athletes are significant at 0.01 level. Thus the significant r-values clearly indicates that the significant relationship between these independent variable and dependent variables. It means that the Socio Economic Status and Anthropometric variables have positive significant influence on the performance of Gulbarga University and Davanagere University athletes.

CONCLUSIONS:

- There is a significant difference between in Calf and Thigh circumference, Arm length and Leg length among Gulbarga University and Davanagere University athletes.
- There is no influence of Socio economic status on the performance in the 100 mtrs event of Gulbarga University and Davanagere University athletes.
- There is a significant relationship between Socio economic status, Anthropometric variables and performance of Gulbarga University and Davanagere University athletes.

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