



# ***A Study on Health-Related Physical Fitness across Different Socio-Economic Groups of Sportspersons and Coaches in Karnataka***

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## **Abstract**

Health-related physical fitness is a vital component of sports performance and overall health. Socio-economic status (SES) may influence physical fitness by affecting access to nutrition, training facilities, and healthcare services. The present study aimed to examine health-related physical fitness across different socio-economic groups among sportspersons and coaches of Karnataka. A total of 20 participants (10 sportspersons aged 18-25 years and 10 coaches aged 35-45 years) were selected for the study. Muscular endurance was assessed using the push-up test (maximum repetition in 30 seconds) and flexibility was measured using the sit-and-reach test. Descriptive statistics and one-way Analysis of Variance (ANOVA) were used to analyze differences across socio-economic groups. The results revealed no statistically significant differences in muscular endurance and flexibility across SES categories. The findings suggest that regular participation in training and physical activity may reduce the influence of socio-economic status on health-related physical fitness.

**Keywords:** Socio-Economic Status, Muscular Endurance, Flexibility, Sportspersons, Coaches, Physical Fitness

## **Introduction**

Health-related physical fitness plays a crucial role in enhancing sports performance, preventing injuries, and promoting lifelong health. Components such as muscular endurance and flexibility are essential for maintaining functional efficiency and sustaining athletic performance. Muscular endurance enables athletes to perform repeated movements efficiently, while flexibility contributes to optimal range of motion and injury prevention.

Socio-economic status is often considered an influencing factor in physical fitness, as it determines access to proper nutrition, quality coaching, sports infrastructure, and medical care. However, among sportspersons and coaches who are regularly engaged in structured training programs, the influence of SES may be reduced. In Karnataka, individuals involved in sports and coaching come from diverse socio-economic backgrounds, making it relevant to study whether SES significantly affects selected health-related physical fitness variables

## **Objectives of the Study**

1. To assess muscular endurance and flexibility among sportspersons and coaches.
2. To compare health-related physical fitness variables across different socio-economic groups.
3. To determine the influence of socio-economic status on selected health-related physical fitness components.

## Hypotheses (Alternative Only)

**H1:** There is a significant difference in muscular endurance across different socio-economic groups of sportspersons and coaches.

**H2:** There is a significant difference in flexibility across different socio-economic groups of sportspersons and coaches.

## Limitations of the Study

1. Small sample size, particularly in the high socio-economic group.
2. Only two health-related physical fitness variables were considered.
3. Findings are limited to sportspersons and coaches from Karnataka.

## Methodology

### Selection of Subjects

Twenty participants were selected for the study, consisting of 10 sportspersons (aged 18–25 years) and 10 coaches (aged 35–45 years) from Karnataka.

### Variables

- **Independent Variable:** Socio-Economic Status (Low, Middle, High)
- **Dependent Variables:**
  - Muscular Endurance (Push-ups – 30 seconds)
  - Flexibility (Sit-and-Reach – cm)

### Tools Used

- Push-up Test (Timer )
- Sit-and-Reach Box

### Statistical Analysis

Mean and Standard Deviation were computed for descriptive analysis. One-way Analysis of Variance (ANOVA) was used to test differences across socio-economic groups, The level of significance was set at 0.05.

## Results and Discussion

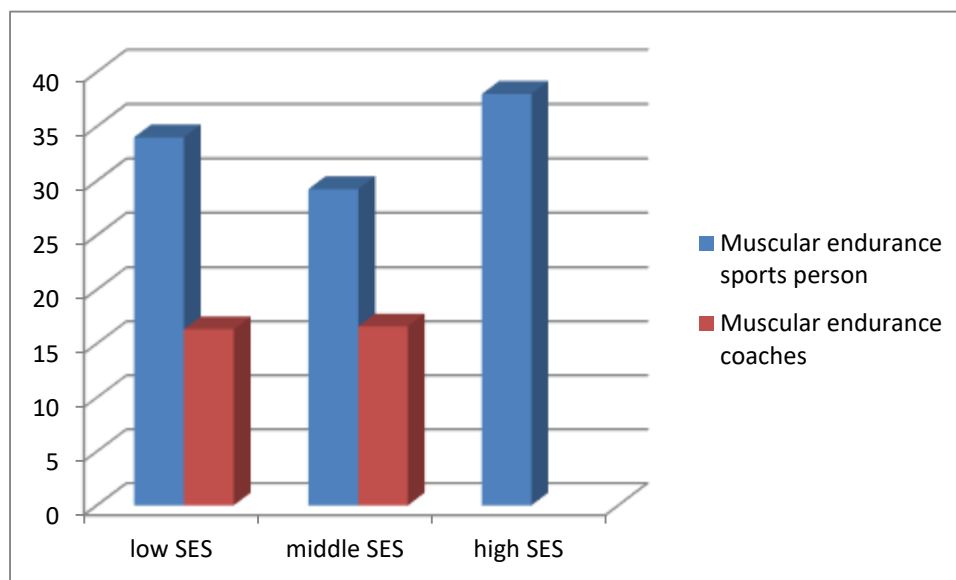
**Table 1**

**Descriptive and ANOVA Results of Muscular Endurance across Socio-Economic Status**

Group	SES	Mean	SD	F-value	p-value
<b>Sportspersons</b>	Low	34.00	2.94		
	Middle	29.25	4.03		
	High	38.00	–		
<b>Coaches</b>	Low	16.33	6.35	<b>1.30</b>	<b>0.298</b>
	Middle	16.60	3.58		
	High	–	–		

significance was set at 0.05.

### Graphical representation



### Discussion and Hypothesis Decision (Table 1)

Table 1 reveals that sportspersons demonstrated higher muscular endurance than coaches across all socio-economic groups. Although participants from higher socio-economic status showed comparatively higher mean push-up scores, the ANOVA results indicated that the differences were not statistically significant ( $p > 0.05$ ).

Since the obtained p-value (0.298) is greater than the 0.05 level of significance, the alternative hypothesis is rejected. The rejection may be attributed to regular training schedules and habitual physical activity followed by both sportspersons and coaches, which may reduce disparities arising from socio-economic differences.

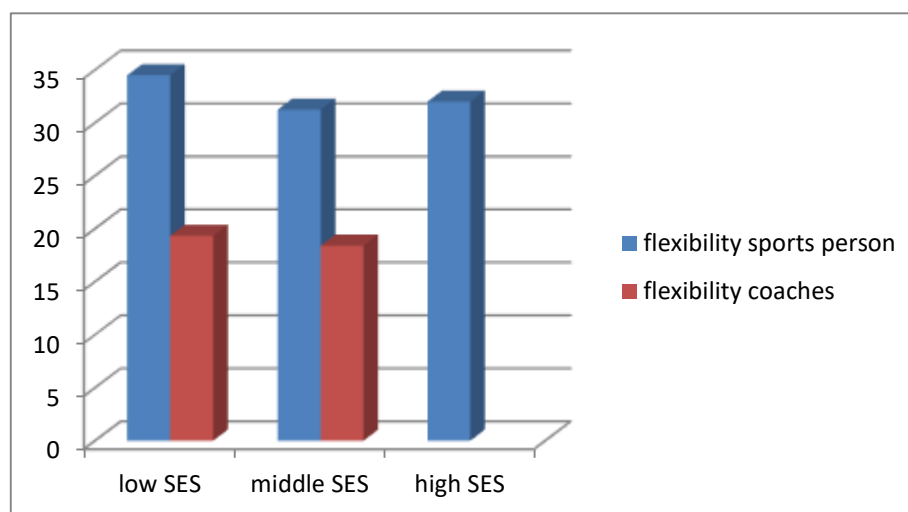
### Table 2

#### Descriptive and ANOVA Results of Flexibility across Socio-Economic Status

Group	SES	Mean	SD	F-value	p-value
Sportspersons	Low	34.50	2.12	0.33	0.721
	Middle	31.25	4.85		
	High	32.00	—		
Coaches	Low	19.33	2.52	0.33	0.721
	Middle	18.40	2.07		
	High	—	—		

significance was set at 0.05.

### Graphical representation



### Discussion and Hypothesis Decision (Table 2)

Table 2 indicates that sportspersons exhibited greater flexibility than coaches across all socio-economic categories. Although slight variations were observed among SES groups, the ANOVA findings revealed no statistically significant differences in flexibility ( $p > 0.05$ ).

As the obtained p-value (0.721) exceeds the level of significance, the alternative hypothesis is rejected. This suggests that flexibility levels among sportspersons and coaches are more strongly influenced by regular stretching routines and training practices rather than socio-economic status.

### Conclusion

The study concluded that socio-economic status does not significantly influence muscular endurance and flexibility among sportspersons and coaches of Karnataka. While sportspersons performed better than coaches in both fitness variables, differences across socio-economic groups were not statistically significant. Regular training and active engagement in sports appear to play a more decisive role in maintaining health-related physical fitness than socio-economic background.

### Recommendations

1. Future studies should include a larger sample size.
2. Additional health-related fitness components should be examined.
3. Sports authorities should continue promoting equal access to training facilities irrespective of socio-economic status.

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