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**Full Length Research Paper**

# A Comparative Study of Lower Back Flexibility among the Students of Different Socioeconomic Status

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**ABSTRACT**

*The purpose of the study was to compare the lower back flexibility among students of different socio-economic status. Using a simple random sampling technique, the researcher selected 12 colleges with 2 colleges from each district from the Lucknow region. Again 3600 male students aged between 18-22 years were randomly selected from these 12 colleges and they were divided into three income groups, that is high-income group, middle-income group, and low-income group by using the Socio-Economic Status Scale Questionnaire developed by G. P. Srivastava (1978) and from three groups a total of 300 students, 100 students each from the high-income group, middle-income group and low-income group were selected for the purpose of this study using a stratified random sampling technique. The lower back flexibility was measured by the Modified sit and reach test. To compare the lower back flexibility among students of different socioeconomic status, one-way analysis of variance (ANOVA) was used followed by L.S.D. (least significant difference) wherever applicable. All statistical function was performed using SPSS v.16 software and the significance level was set at 0.05. It was found that Significant differences were found in Lower back flexibility between the High Income Group and Low-Income Group as well as the Middle Income Group and Low Income Group whereas no significant difference was documented between the High Income Group and Middle Income Group.*

## Introduction

Socio-Economic Status in terms of primary conditions and characteristics is determined through vocation, income and wealth, home and its locations, education, activity and associations. [1] Socio-economic status is association in family economic and social science combined total live of human work experience and individuals or family's economic and social position in reference to others supported him or her income, education and occupation also. Once analyzing family socio-economic status and household's income, education and occupation of earners are examined. As well as an individual versus combined income when their own attributes are assessed. According to Bharadwaj[2] , by the term 'Status', we mean the recognition given to an individual by his group relations. [3] As a rule of conservation in terms of the sense of belonging, [4,5] it is the result of the ranking of a role by the group of that determines for its possessions of a degree of respect, prestige and influence. [6,7] They are, thus the ancient powers and privileges of the family bestowing prestige, authority and power. [8] Societies have thus developed two types of distinct status the ascribed and the achieved. [9,6] It is assigned to individual without any reference to their innate differences or abilities. [9] It is expected and observed since by the birth. The achieved statuses are as minimum those requiring special qualities although they are not needed restricted to those. They are not assigned to an individual since birth but are left open to be filed through competitions and individual efforts.[9] So the standing is formed of as a status variable hooked in to social and economic factors, that don't seem to be organised in any constant manner. The prediction of standing can so be based mostly upon a broad sampling of such factors and can give estimates of reasonable, though not precise validity. Robert (1973) has expressed that physical fitness is a matter of fundamental importance to individual's well-being and is the basis for all other forms of excellence. With increased mechanism there has been a continue decrease in the number of tasks that require an expenditure of 3 energy and sufficient vigorous exercises. As a result individual can not maintain adequate levels of physical fitness. Adequate levels of physical fitness should be developed early in life and continuously should be maintained through regular participation in the well-designed activities and programmes to promote the total well being of an individual. Children should be fit for participation in the play activities of childhood, through which they develop organic vigour, physical strength and other fitness qualities.[10] Flexibility, or range of motion around the joints, also ranks as an important component of health-related fitness. Lack of flexibility in the lower back and posterior thigh is thought to contribute to low back pain. Extreme lack of flexibility also has a deleterious effect on the quality of life by limiting performance.Flexibility is the ability of a muscle to lengthen and to allow one joint (or more than one joint in series) to move through a range of motion (ROM) without limitations or pain (Song et al., 2015).[11]

Flexibility is an indispensable component of physical fitness for attaining an optimum musculoskeletal functioning and also for boosting performance in physical activities (Phrompaet et al., 2011).[12] Flexibility is necessary for overall health and physical condition. It forms an important assessment part in the routine practice of physiotherapy and other areas of Physical education (Marban et al., 2014).[13] Common causes of lack of flexibility are strains, sprains, and overuse injuries (Kachanathu et al., 2013).[14] Reduced flexibility of muscles leads to tightness in the muscles which may be a consequence of the low or inadequate level of physical activity or sedentary lifestyle (Lekinwala et al., 2015).[15] This reduced flexibility results in a decrease in the ability of a muscle to deform which further causes inefficiency in the workplace (Nelson et al., 2004 and Ziabari et al., 2016).[16]

The aim of the study was to compare the lower back flexibility among students of different socio-economic status groups and try to improve their life on the right track.

**Materials and Methods**

*Sample:*

For the present study total 3600 male samples from six districts in Lucknow region i.e. Hardoi, Barabanki, Lucknow, Raebareli, Sitapur and Unnao (12 colleges with two colleges from each district from the region) aged between 18-22 years were randomly selected from these 12 colleges and they were divided into three income groups that are high income group, middle income group and low income group by using socio-economic status.

*Variables:*

a) Independent variables: Sex (Male)
b) Dependent variables: Lower Back Flexibility test
2.3 Measuring Tool:

The data was collected using the Socio-Economic Status Scale Questionnaire developed by G. P. Srivastava (1978)[14] and from three groups a total of 300 students, 100 students each from high-income group, middle-income group and low income group were selected for the purpose of this study using stratified random sampling technique.

*Procedure:*

The lower-back flexibility was measured by sit and reach test. The subject sit on a mat with his legs extended. The feet should rest against the base of a box on which a yard stick is mounted with the 9 inch (23cm) mark on the near side of the box. After a general warm-up that includes stretching of the lower back and thighs slowly reach forward with both hands as far as possible and hold the position momentarily. The distance reached on the yard stick by your fingertips were recorded. We Used the best of four trials as flexibility score.

*Data Analysis:*

For the statistical treatment in this study one way analysis of variance (ANOVA) was applied to find out the significance difference among different socio-economic groups in relation to their lower back flexibility level status. The level of significance was set at 0.05.

**Result and Discussion**

**Table 1.** Descriptive statistics

| Variable | Groups | N | Mean | S.D. | Std. Error |
|---|---|---|---|---|---|
| | High | 100 | 9.32 | 3.59 | .36 |
| | Middle | 100 | 9.00 | 3.11 | .31 |
| | Lower | 100 | 7.45 | 1.94 | .19 |

**Table- 2.** Analysis of Variance (ANOVA) for the variable"Lower Back Flexibility"

| | **Sum of Squares** | **Df** | **Mean Square** | **F** |
|---|---|---|---|---|
| **Between Groups** | 199.09 | 2 | 99.54 | |
| **Within Groups** | 2613.13 | 297 | 8.79 | |
| **Total** | 2812.21 | 299 | | 11.31* |

**Significant at 0.05 level of confidence; Tab $F_{(0.05)}$= 2.99*

From the above cited Table 2 it is found the calculated F value (11.31) found more than tabulated F (2.99), hence there is significant difference exist among High Income Group, Middle Income Group and Low Income Group in the variable Lower back flexibility. Further Least significant difference (LSD) was carried out to know the mean significance difference among the selected income groups and itis presented in the following Table 3

**Table- 3.** Mean wise comparison among High Income Group, Middle IncomeGroup and Low Income Group for the variable "Lower back flexibility"

| High | Middle | Low | MD | Sig. |
|---|---|---|---|---|
| 9.32 | 9.00 | | 0.32 | 0.44 |
| 9.32 | | 7.45 | 1.86* | 0.00 |
| | 9.00 | 7.45 | 1.55* | 0.00 |

**Significant at 0.05 level of confidence.*

Mean wise comparison for the variable Lower Back Flexibility is presented in the above cited Table 4, and from the table it is found that significant difference exists between students of High Income Group and Middle Income Group, High Income Group and Low Income Groupwhereas no significant difference exist between High Income Group and Middle Income Group.

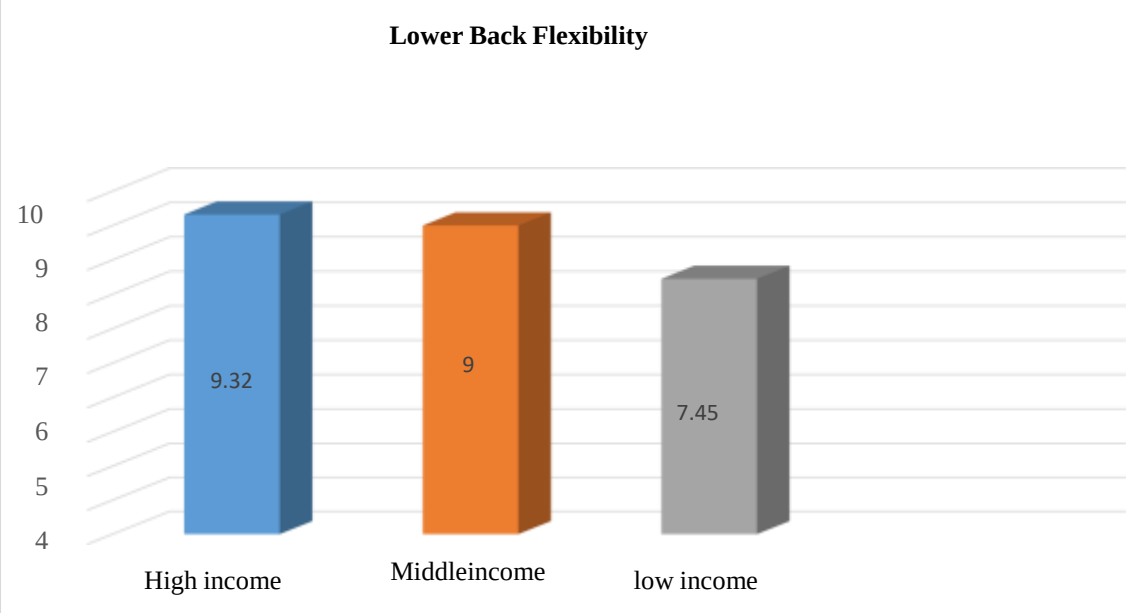


**Fig 1.** Difference of mean among High Income Group, Middle Income Group and Low Income Group on "Lower Back Flexibility"

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