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A COMPARATIVE STUDY OF AEROBIC/CARDIORESPIRATORY FITNESS LEVEL AMONG THE STUDENTS OF DIFFERENT SOCIO ECONOMIC STATUS

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Abstract:- The purpose of the study was to compare the aerobic/cardiorespiratory fitness level among the students of different socio economic status. By using simple random sampling technique researcher had selected total 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 Socio-Economic Status Scale Questionnaire developed by G. P. Srivastava (1978) 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. The aerobic/cardiovascular fitness level was measured by 1 mile run. To compare aerobic/cardiorespiratory fitness level among the 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 by the use of SPSS v.16 software and the level of significance was set at 0.05. It was found that significant differences were found in aerobic/cardiorespiratory fitness level between high income group, middle income group and low income group also.

Key words – Aerobic/cardiorespiratory, fitness level, students, socio-economic status.

I. 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.[9,10] 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.

Physical fitness as a whole is the basis of all capacity of the cardiovascular and respiratory systems and its ability to carry out exercise for a prolonged period of time. So the cardiovascular fitness is taken in to account as a right way and correct live of the physiological status of an individual. A inactive life style and low condition of physical fitness, those are two units the most rife modifiable risk issue and predictor of both each upset and everyone causes of morbidity and mortality. It's tested and located that prime levels of cardio respiratory fitness provides sturdy and freelance prognostic data concerning the risk of unwellness, associated with vessel causes.[10]

Cardiorespiratory endurance is that the level at that your heart, lungs and muscles work together when you are exercising for an extended period of time. This shows however expeditiously your cardiorespiratory system functions associate degree is an indicator of however physically fit and healthy you're. Cardiorespiratory fitness (CRF) refers to the capability of the metabolic process system to supply oxygen to muscle mitochondria for energy production required throughout physical activity.[11,12]

Participation in aerobic exercise develops increased cardiorespiratory fitness, which protects from cardiovascular morbidity and mortality. Maximal oxygen consumption (VO2max) provides a live of the maximal oxygen volume that the body consumes via the system of respiratory and is

transported through the blood to be accustomed unharnessed energy within the cell. VO2max is presently the simplest indicator to assess cardiorespiratory fitness and it is directly associated with vessel health and its improvement has been joined to decreases in risk of death from cardiovascular upset.[13]

Cardiovascular endurance training indicates the subject's level of aerobic health and well physical fitness. Physical fitness training includes jogging, walking, treadmill training, swimming, cycling, sprinting etc. Cardiorespiratory endurance training can be given at three levels that is mild, moderate and high intensity exercise.

The aim of the study was to compare the aerobic/cardiorespiratory fitness level among the students of different socio economic status group and trying to improve their life in a right track.

II. METHODS AND MATERIALS:

2.1 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.

2.2 Variables:

a) Independent variables : Sex (Male)

b) Dependent variables : Aerobic/Cardiorespiratory fitness 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.

2.4 Procedure: The aerobic/cardiovascular fitness level was measured by 1 mile run. Aerobic/cardiorespiratory fitness level performance during exercise can be measured by a running performance over a distance of 1 mile. Warm-up for several minutes, then run/walk as rapidly as possible for 1 mile. Time recorded to the nearest of second.

2.5 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 aerobic/cardiorespiratory fitness level status. The level of significance was set at 0.05.

III. RESULT AND DISCUSSION:

Table No. 1

Descriptive statistics

Variable	Groups	N	Mean	S.D.	Std. Error
Cardiovascular Fitness Level	High	100	6.07	0.41	0.4
	Middle	100	7.24	0.50	0.5
	Lower	100	5.36	0.31	0.3

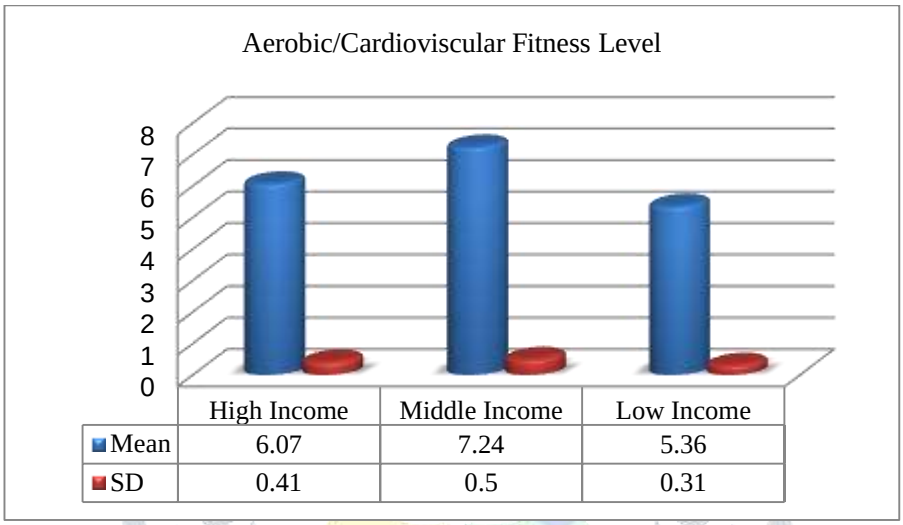

Fig. no.1 - Difference of Mean and SD among High Income Group, Middle Income Group and Low Income Group.

Table No. 2

Analysis of Variance (ANOVA) for the variable "Aerobic/Cardiorespiratory fitness level"

	Sum of Squares	Df	Mean Square	F
Between Groups	181.0	2	90.50	**52.431**
Within Group	51.26	297	0.17	
Total	232.26	299	90.67	

*Significant at 0.05 level of confidence; Tab f(0.05)=2.99

From the above cited table no.2 it is found the calculated 'F' value (52.431) 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 aerobic/cardiorespiratory fitness level.

Further Least significant difference (LSD) was carried out to know the mean significance difference among the selected income groups and it is presented in the following table no.3.

Table No. 3

Mean wise comparison among High Income Group, Middle Income Group and Low Income Group on"Aerobic/Cardiorespiratory Fitness Level"

High	Middle	Lower	MD	Sig.
6.07	7.24	--	1.17	0.00
6.07	--	5.36	0.71	0.00
--	7.24	5.36	1.88	0.00

*Significant at 0.05 level of confidence

Mean wise comparison for the variable of aerobic/cardiorespiratory fitness level is presented in the above cited table no. 3, and from the table it is found that significant difference exists between high income group and middle income group, high income group and low income group, middle income group and low income group also.

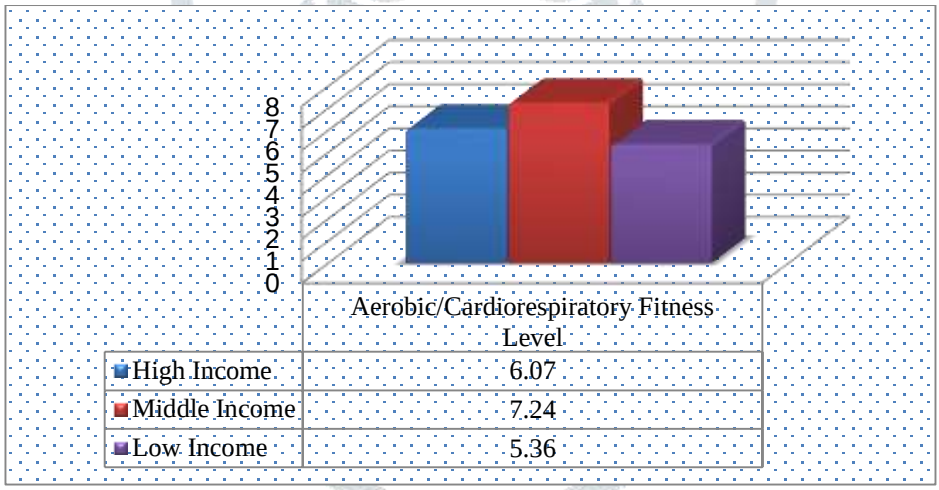

Fig. no.2 - Difference of mean among High Income Group, Middle Income Group and Low Income Group on "Aerobic/Cardiorespiratory Fitness Level"

The comparison of the selected variable of aerobic/cardiorespiratory fitness level showed that significant difference exists between the various income groups considered.

Fahlman MM, Hall HL & Lock R (2006) recommended that influence of socioeconomic status on health-related fitness in female high school students. He found that there is a significant on the following dependent variables: percent fat, mile run, activity level and perceived barriers to exercise. The result of this study was suggested that minority and low socioeconomic student groups should be given separate and different interventions regarding health-related fitness also.[15]

Jimenez et. al., (2010) suggested that influence of socioeconomic on health related fitness in adolescents. He found that there is a significant difference in speed-agility, muscular strength and cardiorespiratory fitness in adolescents at FAS (family affluence scale).[16]

It was observed that mean aerobic/cardiovascular fitness among all three income groups showed that differences were found among students of high income group, middle income group and low income group.

IV. CONCLUSION:

Significant difference existed in aerobic/cardiovascular fitness between high income group and middle income group, between high income group and low income group and between middle income group and low income group also.

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