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Socio-economic analysis on health status of school going children in Jammu district

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Abstract

The purpose of current study was to ascertain the different level of socioeconomic status on selected health related physical fitness of Jammu district school-going students. Total 90 boys' students (n=90) had been selected for current study from different government schools of Jammu district, their age ranged between 14-18 yrs. All the subjects were intimated about the procedure and methodology of the study and they were agreed to participate in this study. The subjects were gone through different physical fitness test. The subjects were assessed on socioeconomic status by using scale prepared by Dr. Meenakshi which is standard questionnaire, cardiovascular endurance assessed by nine-minute run/walk test, Muscular strength by leg dynamometer flexibility by sit and reach test, muscular endurance by bend sit ups. ANOVA test was used to find the differences among three socio-economic groups. To test the hypothesis, the level of significance was set at 0.05. The results revealed that physical fitness varies in different social groups and higher social economic group and medium social economic group have better physical fitness than low social economic group.

Keywords: Socio-economic status, Health status, physical fitness

Introduction

Sports and Physical Education play an important role in human development. Games and other outdoor activities, properly planned and executed, promote social harmony, discipline and increased productivity. These activities develop right attitudes and values in students and help them grow into balanced, integrated and healthy citizens. Participation in physical activities and sports is a fundamental right of every citizen. Physical education and sports are essential elements of educational processes which promote among the participants' health, physical fitness and quality of life. Socio-economic factors play a vital role in an individual's performance in sports. The socioeconomic status of an individual plays an important role in his or her achievements in every field of life. Socio-economic status also has an influence on habitual physical activity. Socioeconomic status depends on a combination of variables, including occupation, education, income, wealth and place of residence. Sociologists often use socioeconomic status as a means of predicting behavior. Carlos Garcia-Alonso *et al.* (2013) ^[1] found that socioeconomic inequalities are present in both Western and Eastern Europe. According to this study, education had a greater impact in southern European countries followed by the northern and then the eastern European countries. Occupation did not seem to have a great impact. Overall, the study indicated that economic conditions were basic to good health but education helped preserve it. Therefore, it concluded that policies should be made to spread education and reduce income inequality. Kamphuis *et al.* (2008) ^[2] conducted a study using multilevel design in Eindhoven, Netherlands, to find out how personal, household, and neighbourhood factors influenced socioeconomic inequalities in sports participation. A stratified sample consisting of 213 neighbourhoods was used, with $N = 4785$ and the response rate being 64.4%. Multilevel logic regression analyses were performed using yes/no questionnaires. The study found that several factors like material and social deprivation among the household factors and lack of socializing or feeling unsafe in a neighbourhood among neighbourhood factors along with personal traits like low self-esteem and negative outlook were associated with lack of sports performance and were more common among low socioeconomic groups.

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Therefore, the study concluded that a combination of personal, household and neighbourhood factors determined participation in sports. Jorge Mota and Giuomar Silva (1999) [3] studied the association of socioeconomic status and parental partnering with participation in sports and physical activities by adolescents in Portugal. The study is important because of the relatively rare literature on the subject of the influence of socioeconomic status on sports participation. According to the study, socioeconomic status didn't have much of an impact as did the encouragement of parents. The mothers and fathers had decided to a greater extent about the participation of adolescents in sports and physical activities. Michael Duncan *et al.* (2002) [4] conducted a study on British secondary school children to examine their level of physical activity based on age, gender and socioeconomic status. A total of 301 children of 7th, 8th and 9th standards participated in the research. The subjects were asked to respond to the four by one-day recall questionnaire in order to assess their physical activity levels. The results seemed to indicate that most of the children were inactive daily but did do at least 30 minutes of moderate physical activity a day. There were significant differences in physical activity according to daily energy expenditure and moderate and vigorous physical activities. All the observed aspects declined with age. Males showed more activity, moderate or vigorous, than females. Also, students of higher socioeconomic status showed more activity than their lower socioeconomic status counterparts. Lennart Raudsepp (2006) [5] conducted a study to assess the relationship between the physical activity and socioeconomic status of adolescents in Estonia. He also examined how the social support by the parents of the subjects affected their physical activity. A total of 326 urban adolescents and their parents were selected to participate in the study. 7-day physical activity recall was used to measure the physical activity. Questionnaires were given to assess the participants' socioeconomic status. The results of the study showed that boys were significantly more active than girls and fathers' explicit modelling was towards the former. But both parents' logistic support was towards girls. More than socioeconomic status, parental support determined the physical activity level of adolescents. Verity Cleland (2009) [6] conducted a study to establish the relationship between childhood socioeconomic status and social mobility on fitness levels from childhood to adulthood in Australian adults. A sample of 2185 people, aged between 26 and 36 years, were first examined in 1985 at ages 7 to 15 years about self-reported physical activity; and cardiorespiratory fitness was measured. Those with high socioeconomic status in childhood had 59% higher chances of being physically fit while those of medium socioeconomic status showed a 33–36% decreased likelihood of physical fitness. Increased physical activity and fitness seemed associated with upward social mobility; and high socioeconomic status throughout childhood to adulthood showed correspondingly high physical activity and fitness. So the study concluded that high socioeconomic status and social mobility had a positive impact on physical fitness and activity. Toftegaard-Støckel *et al.* (2011) [7] studied the relationship between adolescent sports participation and demographic factors, socioeconomic status and cultural factors in Denmark. A cross-sectional sample of 6356 Danish school children of 5th and 9th standards were chosen for the study. Generally, the male gender and those being in the younger age participated in sports. On the other hand, girls were only half as likely as boys to participate in sports. The adolescents were more likely to participate if they had

parental guidance. The subjects whose parents were unemployed were less likely to participate in sports. Parents' employment status was more of a factor in the case of girls. Also, the location of the municipalities was another significant factor. Thus there were various factors which determined adolescents' participation in sports.

Methods

Total 90 boys' students (n=90) had been selected for current study from different government schools of Jammu district, their age ranged between 14-18 yrs. The subjects were divided into three groups LSEG (low social economic group), MSEG (Medium social economic group) and HSEG (high social economic group). The measurements of different variables are done by following procedure:

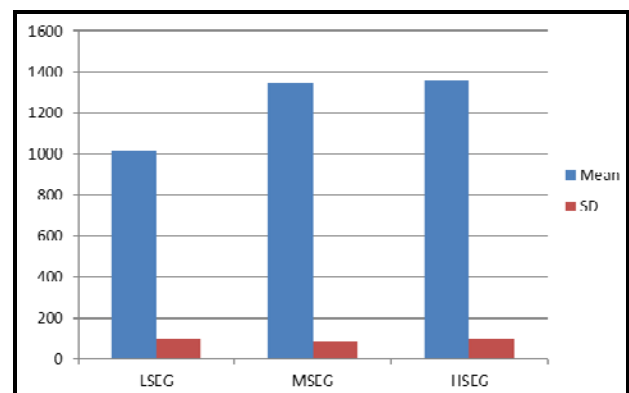
1. Modified Dr. Meenakshi's Socioeconomic Status Scale was used to assess the socioeconomic status of the sample.
2. The nine-minute run/walk test was conducted to assess the cardio-respiratory endurance using the stop watch and recorded in metres.
3. The muscular strength test was conducted to test the leg muscular strength using a leg dynamometer.
4. The sit-and-reach test was conducted to measure the individual's hip flexibility using the sit-and-reach box.
5. The bent knee sit-up test was conducted to test the abdominal muscular endurance and the scores were recorded by count.

Results

Table 1: Analysis of Variance on Cardiovascular Endurance among the Different Socioeconomic Status Groups

	LSEG	MSEG	HSEG	F
Mean	1013.70	1344.80	1359.40	907.33*
SD	94.01	81.72	98.78	

*Significant at 0.05 level of confidence.



Graph 1

The table shows the mean, SD and *F* ratio values of cardiovascular endurance of the three SES groups. The mean and SD values of cardiovascular endurance of the LSEG, MSEG and HSEG are 1013.70 ± 94.01 , 1344.80 ± 81.72 and 1359.40 ± 98.78 , respectively.

The obtained *F* ratio is 907.33. The table indicates that there is a significant difference in cardiovascular endurance among the three groups. Since the results show a significant difference among the three groups, Scheffe's post hoc test was used to find the significant difference between the paired means.

Table 2: Paired Mean Difference in Cardiovascular Endurance between Different Socioeconomic Groups

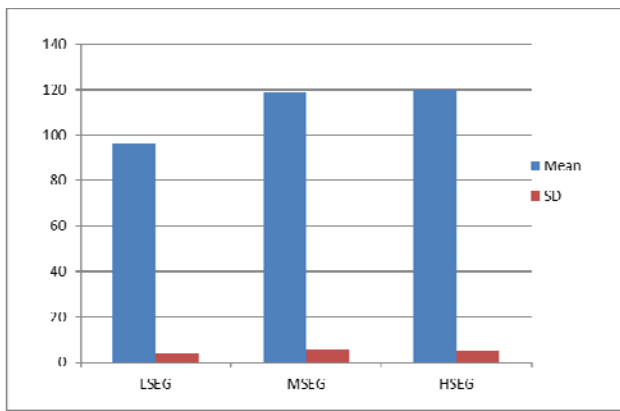
LSEG	MSEG	HSEG	Mean difference	CI
1013.70	1344.80		331.1*	23.32
1013.70		1359.40	345.7*	
	1344.80	1359.40	14.6	

The adjusted means of cardiovascular endurance in the order of magnitude and the differences between the means among the groups are given in Table III. The mean difference between the LSEG and MSEG is 331.1, which is significant at 0.05 level. The mean difference between the LSEG and HSEG is 345.7, which is significant at 0.05 level. The mean difference between the MSEG and HSEG is 14.6, which is not found to be significant at 0.05 level. The results indicate that the HSEG and MSEG are significantly better than the LSEG on cardiovascular endurance.

Table 3: Analysis of Variance on Muscular Strength among the different Socioeconomic Status Groups

	LSEG	MSEG	HSEG	F
Mean	96.55	118.87	119.84	134.4*
SD	4.28	5.63	5.22	

*Significant at 0.05 level of confidence.



Graph 2

The table shows the mean, SD and *F* ratio values of muscular strength of the three SES groups. The mean and SD values of muscular strength of the LSEG, MSEG and HSEG are 96.55 ± 4.28 , 118.87 ± 5.63 and 119.84 ± 5.22 , respectively. The obtained *F* ratio is 134.4. The table indicates that there is a significant difference in muscular strength among the three groups. Since the results show a significant difference among the three groups, Scheffe's post hoc test was used to find the significant difference between the paired means.

Table 4: Paired Mean differences in Muscular Strength between different Socioeconomic Groups

LSEG	MSEG	HSEG	Mean difference	CI
96.55	118.87		22.32*	1.52
96.55		119.84	23.29*	
	118.87	119.84	0.97	

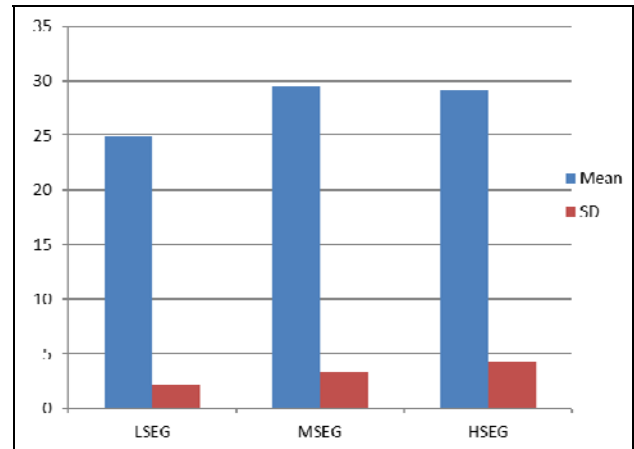
The adjusted means of muscular strength in the order of magnitude and the differences between the means among the groups are given in the table. The mean difference between the LSEG and MSEG is 22.32*, which is significant at 0.05 level. The mean difference between the LSEG and HSEG is

23.29*, which is significant at 0.05 level. The mean difference between the MSEG and HSEG is 0.97, which is not found to be significant at 0.05 level. The results indicate that the HSEG and MSEG are significantly better than LSEG on muscular strength.

Table 5: Analysis of Variance on Flexibility among the different Socioeconomic Status Groups

	LSEG	MSEG	HSEG	F
Mean	24.86	29.55	29.12	116.50*
SD	2.18	3.33	4.33	

*Significant at 0.05 level of confidence.



Graph 3

The table shows the mean, SD and *F* ratio values of flexibility of the three SES groups. The mean and SD values of flexibility of the LSEG, MSEG and HSEG are 24.86 ± 2.18 , 29.55 ± 3.33 and 29.12 ± 4.33 , respectively. The obtained *F* ratio is 116.50. The table indicates that there is a significant difference in flexibility among the three groups. Since the results show a significant difference among the three groups, Scheffe's post hoc test was used to find the significant difference between the paired means.

Table 6: Paired Mean Difference on Flexibility between different Socioeconomic Groups

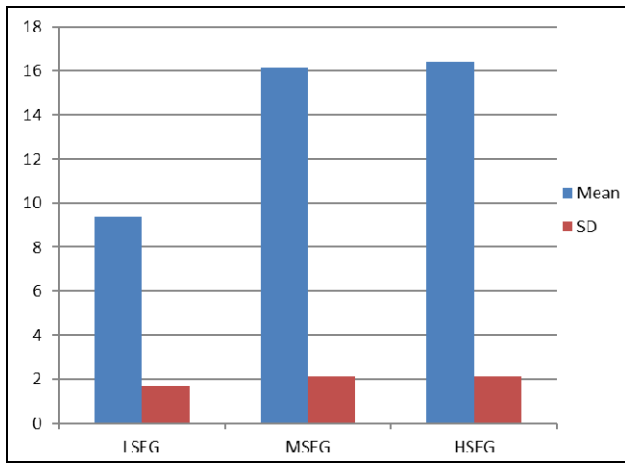
LSEG	MSEG	HSEG	Mean difference	CI
24.86	29.55		4.69*	0.87
24.86		29.12	4.26*	
	29.55	29.12	0.43	

The adjusted means of flexibility in the order of magnitude and the differences between the means among the groups are given in the table. The mean difference between the LSEG and MSEG is 4.69*, which is significant at 0.05 level. The mean difference between the LSEG and HSEG is 4.26*, which is significant at 0.05 level. The mean difference between the MSEG and HSEG is 0.43, which is not found to be significant at 0.05 level.

Table 7: Analysis of Variance on Muscular Endurance among the Different Socioeconomic Status Groups

	LSEG	MSEG	HSEG	F
Mean	9.40	16.15	16.40	790.80*
SD	1.68	2.14	2.12	

*Significant at 0.05 level of confidence.



Graph 4

The table shows the mean, SD and *F* ratio values of muscular endurance of the three SES groups. The mean and SD values of muscular endurance of the LSEG, MSEG and HSEG are 9.40 ± 1.68 , 16.15 ± 2.14 and 16.40 ± 2.12 , respectively. The obtained *F* ratio is 790.80. The table indicates that there is a significant difference in muscular endurance among the three groups. Since the results show a significant difference among the three groups, Scheffé’s post hoc test was used to find the significant difference between the paired means.

Table 8: Paired Mean Difference in Muscular Endurance between different Socioeconomic Groups

LSEG	MSEG	HSEG	Mean difference	CI
9.40	16.15		6.75*	0.50
9.40		16.40	7*	
	16.15	16.40	0.25	

The adjusted means of muscular endurance in the order of magnitude and the differences between the means among the groups are given in the table. The mean difference between the LSEG and MSEG is 6.75, which is significant at 0.05 level. The mean difference between the LSEG and HSEG is 7, which is significant at 0.05 level. The mean difference between the MSEG and HSEG is 0.25, which is not found to be significant at 0.05 level. The results indicate that the HSEG and MSEG are significantly better than LSEG on muscular endurance.

Conclusion

The purpose of the study was to find out the differences in physical fitness in various social economic groups. The results revealed that physical fitness varies in different social groups and higher social economic group and medium social economic group have better physical fitness that low social economic group. The results of current study are similar with those found by (D. J. Pavon *et al.* 2010) [8] and (C. Drenowatz *et al.*, 2010) [2]. Higher social economic group might have participate more in sports and physical activities and have better nutrition, which results in better physical fitness as compared to other social economic group.

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