

# A Study of Cardio- respiratory endurance in Teenaged Girls In Relation To Socio- Economic Status of Punjab

<sup>1</sup>Manjit Kaur, <sup>2</sup> Dr.Charan Singh

<sup>1</sup>Research Scholar, Guru Kanshi Uni, Talwandi Sabho, bathinda.

<sup>2</sup>Asst. Pro/ H.O.D. Department of Physical Education Guru Kanshi Uni, Talwandi Sabho, bathinda.

## **ABSTRACT**

The Purpose of the present study was to Cardio- respiratory endurance (nine minute run/walk test) in teenaged girls in relation to socio- economic status of Punjab. The subjects selected at random were teenaged girls (14 years to 18 years) studying in meritorious school of Punjab. studying in the following five selected schools (meritorious school Amritsar, Bathinda , jalandher, Patiala, sangurar) seven selected following districts of Punjab coming under the west zone of Punjab (Bathinda, Barnala, Faridkot, Fazilka, Mansa, Moga, Sri Muktsar Sahib). The measurement of 420 subjects (15 subject's form each selected age group. The four selected age groups (Groups –I: (14-15 years), Groups –II: (15-16 years), Groups -III (16-17 years), Groups -IV (17-18 years).The 7 selected following districts of Punjab. from each age category irrespective of their socio-economic status) selected at random, was recorded on all the selected Cardio- respiratory endurance (nine minute run/walk test) variables.

**Key Words:-** Socio- economic, teenaged, Punjab, Cardio- respiratory endurance (nine minute run/walk test).

**INTRODUCTION** -“A healthy mind in a healthy body” is one of the most enchanting proverbs related to our sound health, progress, and long life. It connotes that healthy body is indispensable for a sound mind. Mind allows us to think and act judiciously for our peace and progress. Thus, the body must be healthy and vigorous. This is so because our body covers our soul, and it implies healthy body will ensure a very healthy mind. To attain the harmony of body, mind & spirit the body has to be physically fit. The ultimate fate of a nation depends on the healthy youth and the health of the general population of the nation. It is true that in this era technological revolutionary machines have replaced man in many ways whereby day to day physical work has been reduced. Routine physical work, work in fields and also processing plants has become automated. Lack of physical activity adversely affects the general health condition of humans. On the contrary methodical physical exercise spares us of illness and protects it. To accomplish the requirements of routine work, enterprise, and self-realization, we need vigorous physical health. Physical activity is a medium by which individual becomes ready to adapt the demanding conditions of modern life. The physical fitness comprises of five elements, namely quality, speed, strength endurance, flexibility, and coordinative abilities. The improvement and preservation of physical fitness is the most imperative point of games preparation because each game requires a high level of physical conditioning and thus, fitness training is required for each game.

**PROCEDURE** - Again before initiating data collection process [questionnaire distribution, for classifying subjects into three selected socio-economic status and administration of various tests, for recording measurement of selected Cardio- respiratory endurance (nine minute run/walk test)] in the meritorious school of Punjab.

A socio-economic status scale (Standardized questionnaire) developed by Prof. Ashok .K. Kalia and Mr. Sudhir Sahu was distribution to teenaged girls studying in the meritorious school of Punjab to ascertain and assess socio-economic status of the subjects and classify them in the following selected socio-economic status : 1.High socio- economic status, 2. Medium socio- economic status, 3. Low socio- economic status. The four selected age groups for the present study were Age Groups –I: (15 years), Groups –II: (16 years), Groups -III (17 years), Groups -IV (18 years).

The date of birth given by the subjects in the questionnaire was consider the basis to categorize them into four selects age groups. Since the study deals with health related parameters, which were highly influenced by the menstruation of a teenaged girl, great care was taken that each selected subject must have attained her menstruation. Finally after scrutinizing menarche age and date of birth as declared by the subjects in the questionnaire, one hundred five girls against each of the four selected age groups at each of the three selected socio-economic status were taken.

### **Selection of Variables**

#### **Selection of Cardio- respiratory endurance (Health Related)**

Keeping under consideration the available literature, administrative feasibility, modern trends and advices of the experts in the field, the following health related parameters were selected:

#### **Health related parameters**

1. **Cardio- respiratory endurance**(nine minute run/walk test)

#### **Selection of variables related to socio- economic status**

Keeping in views the requirement of the present study, the following variables related to socio- economic status were selected

1. High socio- economic status
2. Medium socio- economic status
3. Low socio- economic status

#### **Selection of Questionnaire**

Keeping in view the requirement of the study, the socio-economic status scale developed by Prof. Ashok K. Kalia and Mr. Sudhir Sahu was used. This is a standardized, valid, reliable and objective test/ scale. This has

been widely used in our country. The major reason for choosing this questionnaire was that Prof. Ashok K. Kalia and Mr. Sudhir Sahuhas computed norms for the Indian population about education, occupation, income, cultural living or cultural standards and participation.

### **Results:**

Table – 1

Two –Way Analysis of Variance of Nine Minute Run/ Walk (m) of Teenaged Girls Belonging to three Selected Socio- Economic Status Across four Selected Age Groups

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Age	1779091.542	3	593030.514	10.927	.000
SES	24628.384	2	12314.192	.227	.797
age * SES	550138.173	6	91689.695	1.690	.123

Significant at 0.05 levels

The findings regarding two –way analysis of variance of nine minute run /walk (m) of teenaged girls belonging to three selected socio- economic status across four selected age groups are presented in Table - 1 It demonstrates that:

- The teenaged girls, irrespective of socio- economic status differed significantly when comparison of nine minute run /walk (m) was made among four selected age groups (viz. Age Groups-I, Age Groups-II, Age Groups-III and Groups-IV) as the obtained F- Ratio (10.927) was much higher than the required value (.000) at 0.05 level of significance.
- The teenaged girls, irrespective of age groups were found to be non-significantly different when comparison of nine minute run/ walk (m) was made among three selected socio- economic status (viz. L.S.E.S, M.S.E.S and H.S.E.S.) as the obtained F- Ratio (.227) was much lower than the required value (.797) at 0.05 level of significance.
- The nine minute run /walk (m) of teenaged girls was found to be statistically in significant at 0.05 level of significance when interaction comparison among three selected socio- economic status (viz. L.S.E.S, M.S.E.S and H.S.E.S.) and four selected age groups (viz. Age Groups-I, Age Groups-II, Age Groups-III and Groups-IV) was made, as the obtained F-Ratio (1.690) was much higher than the required value (.123) at 0.05 level of significance.

Table - 2

L.S.D. Post-hoc Comparison of Mean Values of Nine Minute Run Walk (m) of  
Teenaged Girls in Four Selected Age Groups  
(All Three Socio-Economic Status Combined)

(I) age	(J) age	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
I	II	-175.67*	34.727	.000	-243.97	-107.36
	III	-152.22*	34.727	.000	-220.52	-83.92
	IV	-148.33*	34.727	.000	-216.64	-80.03
II	I	175.67*	34.727	.000	107.36	243.97
	III	23.44	34.727	.500	-44.86	91.75
	IV	27.33	34.727	.432	-40.97	95.64
III	I	152.22*	34.727	.000	83.92	220.52
	II	-23.44	34.727	.500	-91.75	44.86
	IV	3.89	34.727	.911	-64.41	72.19
IV	I	148.33*	34.727	.000	80.03	216.64
	II	-27.33	34.727	.432	-95.64	40.97
	III	-3.89	34.727	.911	-72.19	64.41

Based on observed means.

The error term is Mean Square(Error) = 54269.913.

\*. The mean difference is significant at the .05 level.

The findings regarding post- hoc comparison of mean values of nine minute run/walk (m) of teenaged girls in four selected age groups (all three socio-economic status combined) are presented in Table - 2 It demonstrates that:

- The nine minute run/walk (m) of teenaged girls in Age Group -I and Age Group-II was found to be negative significantly different from each other as their mean difference (-175.67) was higher than the corresponding critical difference (34.727).
- The difference between nine minute run/walk (m) of teenaged girls in Age Group -I and Age Group-III was found to be statistically negative significant as their mean difference (-152.22) was higher than the critical difference (34.727).
- The nine minute run/walk (m) of teenaged girls in Age Group -I and Age Group-IV was found to be negative significantly different from each other as their mean difference (-148.33) was higher than the corresponding critical difference (34.727).

- The nine minute run/walk (m) of teenaged girls in Age Group -II and Age Group-I was found to be significantly different from each other as their mean difference (175.67) was higher than the corresponding critical difference (34.727).
- The difference between nine minute run/walk (m) of teenaged girls in Age Group -II and Age Group-III was found to be statistically non-significant as their mean difference (23.44) was lower than the critical difference (34.727).
- The nine minute run/walk (m) of teenaged girls in Age Group -II and Age Group-IV was found to be non-significantly different from each other as their mean difference (27.33) was lower than the corresponding critical difference (34.727).
- The nine minute run/walk (m) of teenaged girls in Age Group -III and Age Group-I was found to be significantly different from each other as their mean difference (152.22) was higher than the corresponding critical difference (34.727).
- The difference between nine minute run/walk (m) of teenaged girls in Age Group -III and Age Group-II was found to be statistically non-significant as their mean difference (-23.44) was lower than the critical difference (34.727).
- The nine minute run/walk (m) of teenaged girls in Age Group -III and Age Group-IV was found to be non-significantly different from each other as their mean difference (3.89) was lower than the corresponding critical difference (34.727).
- The nine minute run/walk (m) of teenaged girls in Age Group -IV and Age Group-I was found to be significantly different from each other as their mean difference (148.33) was higher than the corresponding critical difference (34.727).
- The difference between nine minute run/walk (m) of teenaged girls in Age Group -IV and Age Group-II was found to be non-statistically significant as their mean difference (-27.33) was lower than the critical difference (34.727).
- The nine minute run/walk (m) of teenaged girls in Age Group -IV and Age Group-III was found to be non-significantly different from each other as their mean difference (-3.89) was lower than the corresponding critical difference (34.727).

Table -3

L.S.D. Post-hoc Comparison of Mean Values of Nine Minute Run /Walk (m) of Teenaged Girls in Three Selected Socio-Economic Status  
(All Age Groups Combined)

(I) Recode SES	(J) Recode SES	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Low	Medium	-11.09	31.325	.724	-72.70	50.52
	High	-37.12	31.943	.246	-99.95	25.70
Medium	Low	11.09	31.325	.724	-50.52	72.70
	High	-26.04	28.441	.361	-81.97	29.90
High	Low	37.12	31.943	.246	-25.70	99.95
	Medium	26.04	28.441	.361	-29.90	81.97

Based on observed means.

The error term is Mean Square(Error) = 54269.913.

The findings regarding post- hoc comparison of mean values of nine minute run/walk (m) of teenaged girls in three socio-economic status (all age groups combined) are presented in Table -3 It demonstrates that:

- The nine minute run/walk (m) of teenaged girls in Low. S.E.S. and Medium. S.E.S. was found to be non-significantly different from each other as their mean difference (-11.09) was lower than the corresponding critical difference (31.325).
- The difference between nine minute run/walk (m) of teenaged girls in Low. S.E.S. and High. S.E.S. was found to be statistically non-significant as their mean difference (-37.12) was lower than the critical difference (31.943).
- The nine minute run/walk (m) of teenaged girls in Medium. S.E.S. and Low. S.E.S. was found to be non-significantly different from each other as their mean difference (11.09) was lower than the corresponding critical difference (31.325).
- The difference between nine minute run/walk (m) of teenaged girls in Medium. S.E.S. and High. S.E.S. was found to be statistically non-significant as their mean difference (-26.04) was lower than the critical difference (28.441).
- The nine minute run/walk (m) of teenaged girls in High. S.E.S. and Low. S.E.S. was found to be non-significantly different from each other as their mean difference (37.12) was lower than the corresponding critical difference (31.943).
- The difference between nine minute run/walk (m) of teenaged girls in High. S.E.S. and Medium. S.E.S. was found to be statistically non-significant as their mean difference (26.04) was higher than the critical difference (28.441).

### **Discussion:**

The combined mean values of three selected socio-economic status (namely, low socio-economic status, medium socio-economic status and high socio-economic status) irrespective of age groups for the selected health related parameters viz. cardio-respiratory endurance (nine minutes run/walk test) were observed to follow a distinct pattern. It was reported to be highest for low socio-economic status and then medium socio-economic status.

As per the finding based on analysis of variance, the teenaged girls belonging to three selected socio-economic status (namely, low socio-economic status, medium socio-economic status and high socio-economic status), irrespective of age groups demonstrated a significant difference on the selected health related parameters viz. cardio-respiratory endurance (nine minutes run/walk test) when inter socio-economic status comparison was made.

This revealed that low socio-economic status teenaged girls had better cardio-respiratory efficiency than high and medium socio-economic status teenaged girls and high socio-economic status teenaged girls had better cardio-respiratory efficiency as compared to medium socio-economic status teenaged girls, though insignificant. The ascribing factor for such result could be more amount of physical labor done by lower class family teenaged girls.

### **CONCLUSIONS:-**

The difference between high socio-economic status versus medium socio-economic status and high socio-economic status versus low socio-economic status teenaged girls (all age groups combined) was insignificant on the selected health related parameters viz. cardio-respiratory endurance: nine minutes run/walk test, whereas the difference was significant between medium socio-economic status versus low socio-economic status teenaged girls.

Low socio-economic status teenaged girls irrespective of age groups had better cardio-respiratory efficiency than high and medium socio-economic status teenaged girls. Similarly, the teenaged girls belonging to high socio-economic status had better cardio-respiratory efficiency as compared to medium socio-economic status teenaged girls. In other words medium socio-economic status teenaged girls had poor cardio-respiratory efficiency when compared with the low and high socio-economic status teenaged girls.

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