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A relationship of health related physical fitness and sedentary life style on health risk of secondary school male students

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Abstract
Current health issues like increase in Sedentary Lifestyle, Over Weight, Cardio vascular disease and obesity are serious concerns plaguing children. Intervention in the form of Quality Physical Education programs then is the need of the hour. Quality Physical Education programs would help change quality of life by changing the harmful habits and promoting healthy lifestyles. If we invest in Quality Physical Education programs today we would be saving ourselves health care costs in the future. The present study was conducted by adopting the Multiple Regression Analysis. The Research Designs of the present study was predicting new values for the dependent variable from the given independent variables (Predictive Modelling Technique). A sample of Two Hundred (n=200) School Students was selected from Aseema Charitable Trust Mumbai suburban. Independent Variable was Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style and dependent variable was Health Risk. All five variables viz. Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style of Secondary School Male Students jointly as well as individually contributed in Predicting Health Risk.

Keywords: Muscular strength, muscular endurance, cardiovascular endurance, flexibility, sedentary life style, health risk, secondary school and male students

1. Introduction
Physical Education should be an experience that guides youngsters in the process of becoming physically active for a lifetime. We all have bodies, and failure to educate them has serious consequences. Scientific evidence concludes that people of all ages both male and female, who are physically active, derive many benefits, especially health benefits by improving health related quality of life. This indicates youngsters who are physically active stand to gain enormous health benefits or is however important so re emphasize that this does not happen automatically. Our need is to devise specific customized programs for the same.
Current health issues like increase in Sedentary Lifestyle, Over Weight, Cardio vascular disease and obesity are serious concerns plaguing children. Intervention in the form of Quality Physical Education programs then is the need of the hour. Quality Physical Education programs would help change quality of life by changing the harmful habits and promoting healthy lifestyles. If we invest in Quality Physical Education programs today we would be saving ourselves health care costs in the future.

1.1 Objectives of the Study
This study was under taken with following objectives:
- To study joint contribution of Health Related Physical Fitness and Sedentary Lifestyle in predicting Health Risk of Adolescent Students
- To study individual contribution of Health Related Physical Fitness and Sedentary Lifestyle in predicting Health Risk of Adolescent Students
- To establish Regression Equation for Predicting Health Risk on the basis of Health Related Physical Fitness and Sedentary Lifestyle of Adolescent Students

1.2 Hypotheses of the Study

On the basis of the above stated objectives of the study, following Hypotheses were formulated:

H01: There is no significant joint contribution of Health Related Physical Fitness and Sedentary Lifestyle in predicting Health Risk of Adolescent Students

H02: There is no significant individual contribution of Health Related Physical Fitness and Sedentary Lifestyle in predicting Health Risk of Adolescent Students

1.3 Delimitation of the Study

1. The study was delimited to the Secondary School Male Students aged 12 to 14years.
2. Research study was delimited to Aseema Charitable Trust.
3. The study was delimited to Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility as predictor.
4. The study was delimited to Health Risk (Body Mass Index) as Dependent factor.

2. Materials and Methods

2.1 Research Design

The present study was conducted by adopting the Multiple Regression Analysis. The Research Designs of the present study was predicting new values for the dependent variable from the given independent variables (Predictive Modelling Technique).

2.2 Selection of the Sample

A sample of Two Hundred (n=200) School Students was selected from Aseema Charitable Trust Mumbai suburban.

2.3 Criterion Measure

Variable	Test	Unit
Physical Fitness		
Muscular Strength	Push-Ups/Modified Push-Ups	Count/Min
Muscular Endurance	Bent Knee Sit Ups	Count/Min
Cardiovascular Endurance	Harvard Step Test	Fitness Index
Flexibility	Sit and Reach	CM
Health Risk		
Body Mass Index	BMI	Ratio (Ht & Wt)
Sedentary Life Style		
Adolescent Sedentary Activity	Adolescent sedentary activity questionnaire (ASAQ)	No. of Hours

The data of all the variables were primarily processed for descriptive statistics. Further, by using IBM SPSS-22 Software the data were analysed by employing Linear Regression Analysis (Analysis of Variance).

3. Results and Discussions

3.1 Joint Contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style In Predicting Health Risk of Secondary School Male Students

The first objective was to study joint contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style in predicting Health Risk of Secondary School Male Students. The data were analysed with the help of Linear Regression Analysis and results are given in Table 4.1.

Table 1: Multiple Correlation coefficient of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style of Higher Secondary School Boys Students

Variable	R1(23456)	$R^2$1(23456)	Remark
Muscular Strength Muscular Endurance Cardiovascular Endurance Flexibility Sedentary Life Style	0.8261	0.6824	p<0.01

From Table 4.1 it is evident that Multiple Correlation Coefficient is 0.897 which is significant at 0.01 level with df = 5/194 it indicates that there is a significant joint contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style of Secondary School Male Students in predicting Health Risk in this context the null hypothesis that there is no significant joint contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style in predicting Health Risk of Secondary Male Students is rejected. Further, the multiple correlation efficient is 0.8261 and the percentage joint contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style of Higher Secondary Male Students in predicting Health Risk is 68.24 percent which is low. It may therefore be said that all five Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style of Secondary School Male Students jointly can contribute in Predicting Health Risk.

3.2 Individual Contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style In Predicting Health Risk of Secondary School Male Students

The Second objective was to study individual contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style in predicting Health Risk of Secondary School Male Students. The data were analyzed with the help of Linear Regression Analysis and results are given in Table 4.2.

Table 2: Variable vise Beta Coefficient, t-value and Percentage Contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style of Secondary School Male Students

Variable	Beta Coefficient	t-value	Remark	r	Percentage Contribution
Muscular Strength	0.17	5.47	P<0.05	0.73	12.24 %
Muscular Endurance	0.19	7.13	p<0.05	0.62	11.78 %
Cardiovascular Endurance	0.31	3.02	p<0.05	0.51	15.81 %
Flexibility	0.13	3.12	p<0.05	0.49	06.37 %
Sedentary Life Style	-0.38	-8.11	P<0.01	0.58	22.04 %

From Table 4.2 it can be seen that the Beta coefficient for Muscular Strength -0.17, Muscular Endurance 0.19, Cardiovascular Endurance 0.51 Flexibility 0.13 and Sedentary Life Style 0.38 respectively which are significant at 0.05. The contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance and Flexibility was positive where Sedentary Life Style was negative. It indicates that Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style individually contribute significantly in predicting Health Risk of Secondary School Male Students. Thus, the null hypothesis that there is no significant individual contribution of Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style in predicting Health Risk of Secondary School Male Students is rejected. Since Beta Coefficients for Muscular Strength, Muscular Endurance, Cardiovascular Endurance and Flexibility are positive it shows that higher values in all these variables predicts low Health Risk where Sedentary Life Style is negative it shows that lower the value predicts low Health Risk of Secondary School Male Students. The individual contribution of Sedentary Life Style 22.04 percent which is very higher whereas Cardiovascular Endurance 15.81 which is moderate Lastly, the individual contribution of Flexibility is very low. It may therefore be said that Muscular Strength, Muscular Endurance, Cardiovascular Endurance and Sedentary Life Style individually was found to be good predictor of Health Risk of Secondary School Male Students.

4. Conclusion

With the above analysis and interpretation of data the following findings may be drawn-

1. All five variables viz. Muscular Strength, Muscular Endurance, Cardiovascular Endurance, Flexibility and Sedentary Life Style of Secondary School Male Students jointly can contribute in Predicting Health Risk.
2. Beta Coefficients for Muscular Strength, Muscular Endurance, Cardiovascular Endurance and Flexibility are positive it shows that higher values in all these variables predicts low Health Risk where Sedentary Life Style is negative it shows that lower the value predicts low Health Risk of Secondary School Male Students.
3. Muscular Strength, Muscular Endurance, Cardiovascular Endurance and Sedentary Life Style individually was found to be good predictor of Health Risk of Secondary School Male Students.

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