



## PHYSICAL PERFORMANCE AS AN INDICATOR OF ACADEMIC ACHIEVEMENT EMOTIONAL INTELLIGENCE AND STRESS IN ADOLESCENT BOYS

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### Abstract

Physical activity has reduced drastically leading to hypokinetic disorders like obesity and associated problems in adolescents. Physical activity, sports and allied activities have tremendous social, cognitive, cultural and emotional values apart from enhancing physical fitness. Adolescence is a period of physical, psychological, emotional and personality change, which can lead to stress, and emotional and behavioral problems. The purpose of the study was to explore the relationship effect of physical performance on academic achievement, emotional intelligence and educational stress among adolescent boys of Karnataka. To achieve the purpose of the study necessary data was collected from 597 subjects of studying in ninth standard in Karnataka during 2016-17. Hand grip strength was used as a proxy for physical performance among school students. Standardized paper pencil tests were used to assess academic achievement, emotional intelligence, and educational stress. Apart from descriptive statistics Pearson product moment correlation coefficient was calculated using SPSS. Findings reveal a weak positive linear relationship between handgrip strength and emotional intelligence in rural boys; handgrip strength and academic achievement in urban boys; handgrip strength and academic

achievement in English medium boys; handgrip strength and academic achievement in adolescent boys.

**Keywords:** Adolescence, health, fitness, academic, emotions, stress, physical performance.

### Introduction

Physical inactivity is a major concern among adolescents in the present technology oriented era. Young boys and girls are fond of Television, Internet, Video Games and other social media. All these have become part of modern day lifestyle as part of recreation. Even parents insist on such means instead of going out for play in the open air due to safety concerns. Physical activity has reduced drastically leading to hypokinetic disorders like obesity and associated problems in adolescents.

Physical activity, sports and allied activities have tremendous social, cultural and emotional values apart from enhancing physical fitness. There has also been growing interest in the benefits of physical activity for mental health and a strong evidence base shows that regular activity and improved fitness increases psychological well-being (Biddle, Fox & Boutcher, 2001, Biddle & Mutrie, 2008). There has been substantial interest in the potential impact of improved fitness and



exercise on cognitive function and learning in children. Physical movements of the body are vital for normal development of brain (Wolfsont, 2002). Physically fit person exhibits high level of cognitive function as compared to their less fit counterparts. There is a strong linkage between physical fitness participation and cognitive development. It is believed that the child which is active in physical activity and sports is intelligent and can make quick decisions.

Emotional intelligence is a concept derived from extensive research and theory about thoughts, feelings and abilities. Emotional intelligence attracts growing interest worldwide, contributing to critical reflection as well as to various educational, health and occupational outcomes in the present context (Akerjordet and Severinsson, 2007). Emotional intelligence is the ability to use emotions effectively and productively. It is a set of abilities that pertain to emotions and emotional information. It is the ability to carry out accurate reasoning about emotions and the ability to use emotions and emotional knowledge to enhance thought (Mayer et al. 2008). Physical activity and sports provide innumerable opportunities to enhancement of emotional intelligence. The acquired quality can be carried over to real life situation in dealing day to day problems involving emotions and feelings.

Adolescence is a period of physical, psychological, emotional and personality change, which can lead to stress, and emotional and behavioral problems. The emerging consensus in the literature clearly indicates that the population of adolescents is more prone to negative health outcomes due to stress that lead to physical illness as well as behavioural and psychological

maladjustment. Stress in adolescents is a consequence of personal, environmental and social factors (Ge, et. al., 2003). In this pretext, an attempt has been made in the present study to establish relationship between physical performance and various other aspects related to adolescents.

### **Methodology**

The purpose of the study was to explore the relationship effect of physical performance on academic achievement, emotional intelligence and educational stress among adolescent boys of Karnataka. To achieve the purpose of the study necessary data was collected from 597 subjects of high schools in Karnataka during 2016-17. The subjects selected were studying in 9<sup>th</sup> standard during and their age ranged between 14 to 16 years. Hand grip strength was used as a proxy for physical performance among school students. Grip strength was measured by the help of an analogue hand grip dynamometer. Before taking the measurement, the subjects were requested to sit in a comfortable position. They were asked to squeeze the dynamometer as hard as possible without moving the body. Thus, the final grip strength was measured for both hands and the reading was taken from the dynamometer scale when the pointer no longer moved. Three trials were given to each subject and the best reading was the score of the subjects. The investigator constructed a knowledge test for assessment of academic achievement in adolescent students. The test included 50 questions from General Science (N=17), Social Science (N=16) and Mathematics (N=17) subjects of eighth standard. The duly constructed test was standardized using Item Analysis and Item Discrimination procedures. In order to assess



the academic stress of adolescents, Educational Stress Scale for Adolescent (ESSA) developed by Sun, Dunne, Hou and Xu (2010) is comprised of 16 questions using 5-point scale from 1 (strongly disagree) to 5 (strongly agree) with higher scores indicating greater stress. The study included 33-item Emotional Intelligence Scale (Schutte et al., 1998) comprised of six factors where items are rated on a 5-point scale anchored by 1=strongly agree to 5=strongly disagree. The model of emotional intelligence of Salovey and Mayer (1990) provided the conceptual foundation for the items used in the scale. The investigator personally visited various schools of Karnataka state and collected data. The questionnaires and hand grip strengths were conducted in the class room setting. Apart from descriptive statistics Pearson product moment correlation coefficient was calculated using SPSS.

### Findings

The descriptive statistics on handgrip strength, academic achievement, emotional intelligence and educational stress is given in table 1.

TABLE No. 1  
RESULTS OF ADOLESCENT BOYS ON HANDGRIP STRENGTH, ACADEMIC ACHIEVEMENT, EMOTIONAL INTELLIGENCE AND EDUCATIONAL STRESS

Variables	Rural (N=274)	Urban (N=323)	Kannada Medium	English Medium	Overall
Handgrip strength	26.67 ±6.25	26.73 ±6.69	26.13 ±6.41	27.96 ±6.50	26.71 ±6.49
Academic Achievement	21.80 ±5.17	22.58 ±6.17	21.73 ±5.07	23.31 ±6.88	22.22 ±5.74
Emotional Intelligence	114.12 ±16.41	112.34 ±20.15	113.22 ±18.14	113.02 ±19.40	113.16 ±18.53
Educational Stress	48.20 ±9.16	46.30 ±10.06	47.62 ±9.19	46.18 ±10.68	47.17 ±9.70

Table 1 makes it clear that the results are homogenous and normally distributed. Results on relationship between physical performance, academic achievement, emotional intelligence and educational stress are provided in table 2.

TABLE NO. 2.

SUMMARY OF PEARSON PRODUCT MOMENT CORRELATION COEFFICIENT REGARDING RELATIONSHIP BETWEEN HANDGRIP STRENGTH, ACADEMIC ACHIEVEMENT, EMOTIONAL INTELLIGENCE AND EDUCATIONAL STRESS OF ADOLESCENT BOYS

	Hand grip strength	Academic Achievement	Emotional Intelligence	Educational Stress
Rural	Pearson Correlation	1	.109	.132*
	Sig. (2-tailed)		.072	.029
Urban	Pearson Correlation	1	.148**	.048
	Sig. (2-tailed)		.008	.394
Kannada	Pearson Correlation	1	.039	.072
	Sig. (2-tailed)		.435	.520
English	Pearson Correlation	1	.246**	.101
	Sig. (2-tailed)		.001	.170
Overall	Pearson Correlation	1	.132**	.080
	Sig. (2-tailed)		.001	.050

\*. Correlation is significant at the 0.05 level (2-tailed).  
\*\*. Correlation is significant at the 0.01 level (2-tailed).

From table 2 it is evident that there is weak positive linear relationship between handgrip strength and emotional intelligence in rural boys; weak positive linear relationship between handgrip strength and academic achievement in urban boys; weak positive linear relationship between handgrip strength and academic achievement in English medium boys; weak positive linear relationship between handgrip strength and academic achievement in adolescent boys.

### Discussion

It has been observed that the significant relationship observed in the present study is weak positively linear in nature. The present results are contrary to popular belief on the benefits of physical fitness on adolescents. It has been found that the emotional intelligence of rural boys is positively correlated to handgrip strength. Although weak, a similar relationship is not observed in urban boys. It has to be noted that the rural boys are benefitted greatly through physical fitness and possess higher emotional intelligence. The



urban boys demonstrated significantly positive relationship between handgrip strength and academic achievement. Due to stressful lifestyle in urban setup the adolescent boys who are fit through physical activities do well in academics. A similar association was not found in rural boys. Hand grip strength was also correlated positively with academic achievement in English medium school boys. The economic status of English medium school students usually is better off than Kannada medium school students. This means that the economic status has a role to play in deriving benefits of physical fitness in academic endeavors. Moreover, English medium schools focus mainly on academic advancements of students. In this scenario those students who are physically active gain higher scores in academics. Overall it has been found that the adolescent boys of Karnataka demonstrated significantly positive relationship between handgrip strength and academic achievement. This clearly conveys that the boys who are active and fit will obtain good scores in their academic accomplishments.

### Conclusions

Emotional intelligence is positively associated with physical performance in rural adolescent boys. Adolescent boys possessing higher physical performance perform well academically in rural setup and studying in English medium schools.

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