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Gokul U
Department Of Physical
Education, Srm University,
Chennai, Tamil Nadu, India

**Dr Jayasingh Albert
Chandrasekar**
Derector of Physical Education
SRM University, Chennai, Tamil
Nadu, India

Analysis of health related physical fitness of school students in Kollam district

Gokul U and Dr Jayasingh Albert Chandrasekar

Abstract

Today there is a growing emphasis on looking good, feeling good and leaving longer increasingly scientific evidence tells us that one of the keys to achieving these ideas is fitness and exercises. Getting moving is a challenge because today physical activity is less a part of our daily lives. there are few jobs that require physical exertion we have become a mechanically mobile society relying on machines rather than muscle to get around. in addition, we have become a nation of observers with more people (including children) spending their leisure time pursuing just that leisure consequently, statistics show that obesity and overweight the problems that come with high blood pressure diabetes, cardiac arrest etc are on the rise. but statistics also show that preventive medicine pays off so one should not wait until doctor gives an ultimatum. The purpose of the study was to analyze the health related physical fitness of school students in Kollam District. The participants of the study were total of 150 students (75 boys and 75 girls) randomly selected from government aided and private sectors schools in Kollam district.

Keywords: health related physical fitness, beep test

Introduction

Life is man's most valuable possession and next in order of value is health without health life is deprived not only of much, if not all, of its usefulness, but also of its Joy and Pleasures for if the body is not in good health one cannot do about at will; he cannot do what he would enjoy doing he cannot eat the food he would enjoy eating. One who has good physical health is able to use life more fully then one who is ill.

The quality of life is more important than the life itself. This is one he of life's real lessons and blessed child – (Alex Currel). The physical health is not only a good complexion, clean skin, bright eyes, lustrous hair, firm flash optimism fat and coo-ordinated movement but it also covers sweet breath, good aptitude with normal functioning bowel and bladder the child must get sound sleep for needed hours in relation to age.

Along with physical health the fitness is also to be kept in mind, Strength, power, flexibility, agility resting pulse rate and recovery rates after exercise etc. all special senses should word in harmony occurred within the range of normality.- (Park) Health related Physical fitness definition According to WHO – Health is a complete state of physical mental and Social well-being and not merely absence of disease or informally. It is needless to mention that school health programme was on papers in the form of medical examination of children in the beginning of this century after independence, couple of committees recommended about the need and importance of this programme. After 1960, the work started in the selected schools and now the government is planning in a big way the health and physical education activities of all levels of school education programme. Obesity is a major health problem. It affects a large proportion of the population and adversely affects health and longevity. It either is a cause or is correlated with health problems such as diabetes, coronary heart disease, and hypertension, and such physiological effects as depression, withdrawal, poor self-concept, and self-pity. Many agree that reducingthe incidence of obesity would advance public health.

Our society is tremendously preoccupied with obesity. Data from a 1985 National Health Interview Survey indicated that 45% of females and 27% of males were trying to lose weight. Weight reduction is a multibillion-dollar industry; programs specifically aimed at weight management have spread rapidly in recent years. Nevertheless, obesity persists in our society.

Correspondence
Gokul U
Department Of Physical
Education, Srm University,
Chennai, Tamil Nadu, India

The fundamental right to health articulated by the World Health Organization (WHO) in 1946 remains integral to development today. This right is strongly reflected in the Millennium Development Goals (MDGs), the guiding international development framework adopted by the United Nations (UN) in 2000, and the Human Development Index used to measure the progress of all nations against universal human development goals.

Healthy human development is a necessary foundation for all development progress. Without healthy populations, the achievement of development objectives will be out of reach. Good health is fundamental to the ability of individuals to realize their full human potential. It is also a crucially important economic asset. Low levels of health impede people's ability to work and earn a living for themselves and their families. When someone becomes ill, an entire family can become trapped in a downward spiral of lost income and high health-care costs.² On a national scale, poor population health diminishes productivity and impedes economic growth, while investment in better health outcomes is generally seen as an investment in economic growth. Many countries are working to improve their health-care services, but better health services alone will not improve health outcomes. The health of individuals and populations is determined to a significant degree by social factors such as poverty, income inequality, education, employment, housing, gender, social connectedness and physical activity. These social determinants of health produce widespread inequities in health within and between societies. The poor and the disadvantaged experience worse health than the rich and powerful have less access to services and die younger in all societies. Social factors have a direct impact on health status and must be addressed as part of any comprehensive health strategy. Strategies also need to be tailored to the diverse and evolving needs of each country and its specific social, economic and cultural contexts. This includes giving attention to the conditions that account for the greatest current and anticipated burden of disease and mobilizing resources to confront them. Sport's unique and universal power to attract, motivate and inspire makes it a highly effective tool for engaging and empowering individuals, communities and even countries to take action to improve their health. Sport can also be a powerful means of mobilizing more resources in the global fight against disease, but this potential is only just beginning to be realized.

According to the WHO, experience and scientific evidence show that regular participation in appropriate physical activity and sport provides people of both sexes and all ages and conditions, including persons with disabilities, with a wide range of physical, social and mental health benefits. Physical activity and sport support strategies to improve diet and discourage the use of tobacco, alcohol and drugs. As well, physical activity and sport help reduce violence, enhance functional capacity, and promote social interaction and integration. Sports generates health benefits in two primary ways — through direct participation in sport itself, and through the use of participatory and spectator sport as a platform for communication, education and social mobilization. Well-designed sport for health initiatives often work on both levels. The role of physical education in the school curriculum is to help students develop the competencies and beliefs necessary for incorporating regular physical activity into their lives. Through involvement in a well-taught physical education program, students can achieve physical and personal benefits. In the school environment,

physical education is viewed as a unifying term for a range of interrelated areas that aim to —physically educate students. Students who engage in physical education develop the knowledge, skills, understanding and motivation to seek health and physical competence through lifelong involvement in physical activity. Physical education seeks to promote healthy lifestyles among students. Physical inactivity is a primary risk factor driving the global increase in chronic disease, sport can play a critical role in slowing the spread of chronic diseases, reducing their social and economic burden, and saving lives. While physical activity includes a broader range of activities than sport alone (people can be physically active at work or engaged in domestic tasks at home), direct participation in sport is one of the most enjoyable, and therefore powerful, means of motivating and mobilizing people to become physically active. In addition to enhancing overall physical fitness, regular physical activity, active play and sports can have a positive impact on other major health risk factors, such as high blood pressure, high cholesterol, obesity, tobacco use and stress. Research has shown that body composition is directly related to health. A normal balance of body fat is associated with good health and longevity. Excess fat in relation to lean body mass, known as altered body composition, can greatly increase your risks to cardiovascular disease, diabetes, and more. Body composition analysis fosters early detection of an improper balance in your body composition, which allows for earlier intervention and prevention. Body composition analyzing are also help to the all individuals. The day to day physical activities will helps to reduce the risk factors of life. The Physical Education teachers are engaged in various physical activities in his daily life than non Physical Education teachers. The Physical Education teachers have more aware about their body composition level and its significance. So Physical Education teachers have more physical health and good physique. The study has been mainly concentrate to the Physical Education teachers and non Physical Education teachers. This study will also help the sedentary people to aware their body composition and fitness level

Methodology

The participants of the study were total of 150 students (75 boys and 75 girls) randomly selected from government aided and private sectors schools in kollam district. the students selected based on their willingness to participate in the study. abdominal strength, flexibility, upper body strength, cardio respiratory endurance and body mass index are the selected variables for the collection of data. the test battery TFPF was administrated the testes were administrated to collect the data on selected variables are set up's in 60 seconds, modified pull ups, set and reach test and body mass index. The statistical technique was used in the study is to know the distribution of the data descriptive statistics such as Mean, Standard Deviation minimum and maximum were calculated. In order to assess the difference among 3 categories of school in relation to health related physical fitness ANOVA was calculated using SPSS.

Level of significance

Based on the requirement on the study the level of significance was fixed at 0.05.

Findings

The data on abdominal strength, Flexibility, Upper body strength and endurance, Cardio respiratory endurance, Body Mass Index were collected and statistically analyzed. The details are given below.

Table 1: Analysis of the factors influencing health related physical fitness of private school students (girls)

VARIABLES	N	AM	SD	MINIMUM	MAXIMUM	RANGE
Height	25	143.98	27.418	138	158	20
Weight	25	48.58	4.6	38	57	19
Sit Up	25	14.16	5.6	6	27	21
Sit and Reach	25	22.63	4.725	14	30	16
Pull Up	25	5.52	3.991	1	12	11
Beep Test	25	2.864	.7314	2	4.5	2.5

Table 2: Analysis of the factors influencing health related physical fitness of govt: school students (girls)

Variables	N	Am	SD	Minimum	Maximum	Range
Height	25	153.82	5.361	141	162	21
Weight	25	42.76	5.939	33	55	22
Sit Up	25	27.96	5	18	35	17
Sit and Reach	25	26.7	4.546	19	36	17
Pull Up	25	6.64	3.081	2	16	14
Beep Test	25	4.6	.5686	3.6	5.8	2.2

Table 3: Analysis of the factors influencing health related physical fitness of aided: school students (girls)

Variables	N	Am	SD	Minimum	Maximum	Range
Height	25	153.59	4.8	141	166	25
Weight	25	41.28	5.9	30	53	23
Sit Up	25	23.12	6.078	12	34	22
Sit and Reach	25	24.08	5.227	11	37	26
Pull Up	25	6.32	2.688	2	13	11
Beep Test	25	3.952	.5285	3.2	5	1.8

Table 4: One Way analysis of variance of mean scores on health related physical fitness variables of private, govt: and aided school students (girls)

		Sum of Squares	DF	Mean Square	F	Sig.
Height	Between Groups	1576.609	2	788.305	2.942	.059
	Within Groups	19292.006	72	267.945		
	Total	20868.615	74			
Weight	Between Groups	744.607	2	372.303	12.100	.000
	Within Groups	2215.440	72	30.770		
	Total	2960.047	74			
Sit-Ups	Between Groups	2451.227	2	1225.613	39.840	.000
	Within Groups	2214.960	72	30.763		
	Total	4666.187	74			
Sit & reach	Between Groups	212.581	2	106.291	4.535	.014
	Within Groups	1687.634	72	23.439		
	Total	1900.215	74			
Pull up	Between Groups	16.640	2	8.320	.765	.469
	Within Groups	783.440	72	10.881		
	Total	800.080	74			
Beep test	Between Groups	40.094	2	20.047	52.871	.000
	Within Groups	27.300	72	.379		
	Total	67.39	74			

Table 5: Significant difference between paired means on weight of private, govt: and aided school students (girls)

Groups	Mean difference	Significance
Private Govt	5.82	.000
private Aided	7.30	.000
Govt Aided	1.40	0.349

Table 7: Significant difference between paired means on sit and reach of private, govt: and aided school students (girls)

group	Mean difference	significance
private govt	9.07	.004
private aided	1.45	.249
govt aided	2.62	.060

Table 6: Significant difference between paired means on sit up of private, govt: and aided school students (girls)

group	Mean difference	significance
private govt	13.80	.000
private aided	8.96	.000
govt aided	4.84	0.003

Table 8: Significant difference between paired means on beep test of private, govt: and aided school students (girls)

group	Mean difference	significance
private govt	1.78	.000
private aided	1.09	.000
govt aided	0.69	.000

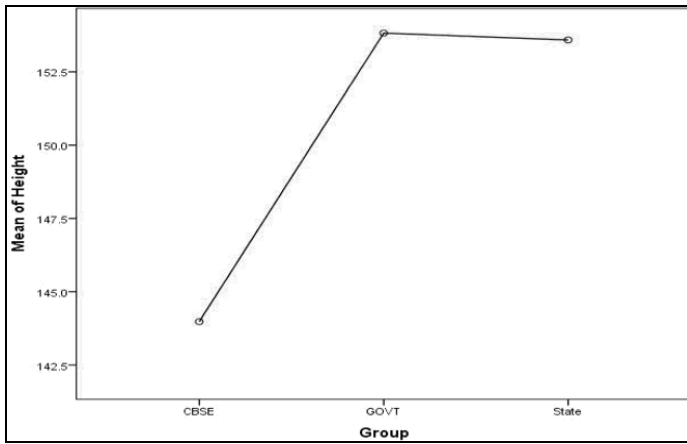


Fig 1: Mean difference of Height among Private, Govt: and Aided School students (Girls)

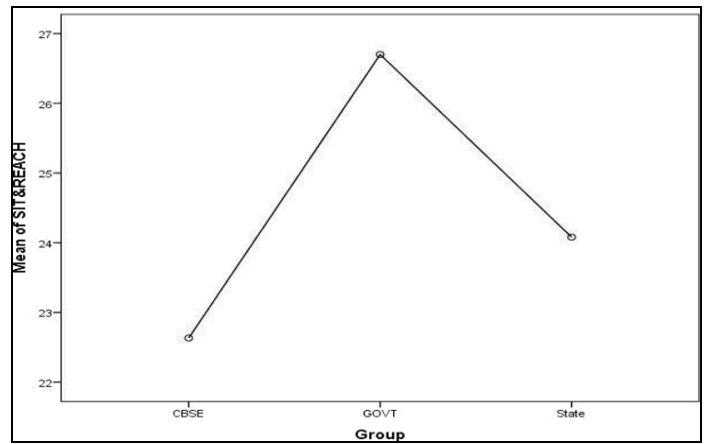


Fig 4: Mean difference of Sit and Reach among Private, Govt: and Aided School students (Girls)

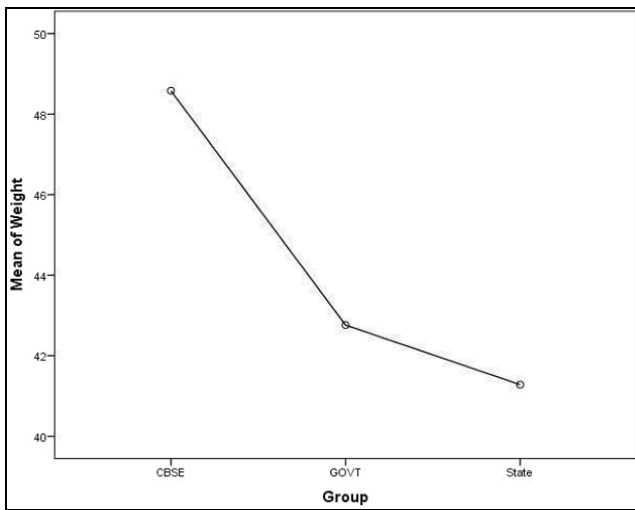


Fig 2: Mean difference of Weight among Private, Govt: and Aided School students (Girls)

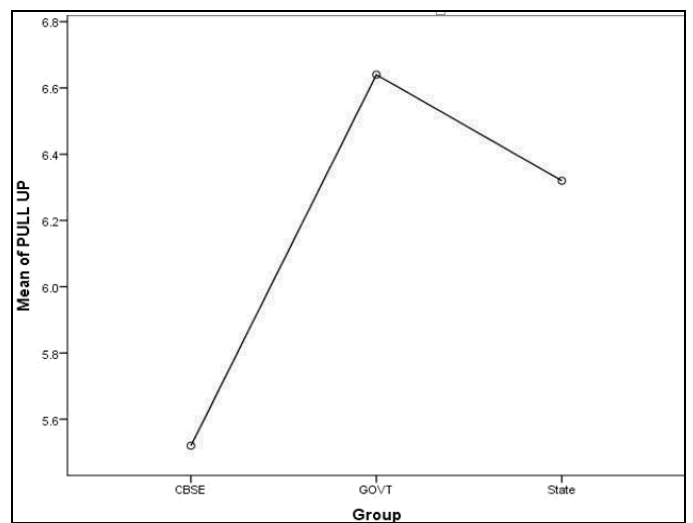


Fig 5: Mean difference of pull up among Private, Govt: and Aided School students (Girls)

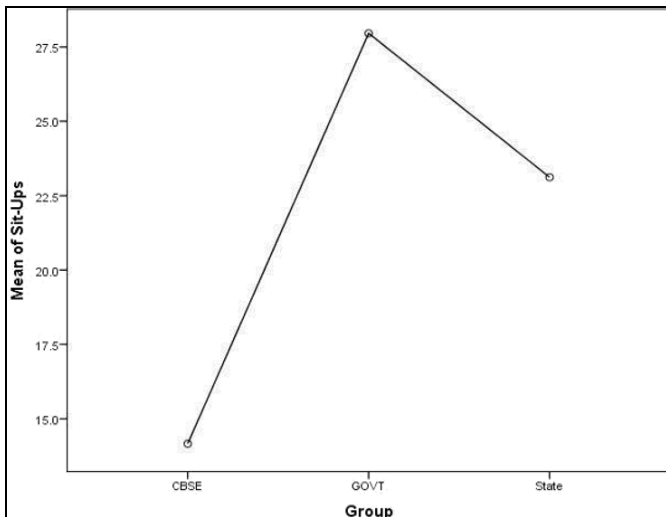


Fig 3: Mean difference of sit ups among Private, Govt: and Aided School students (Girls)

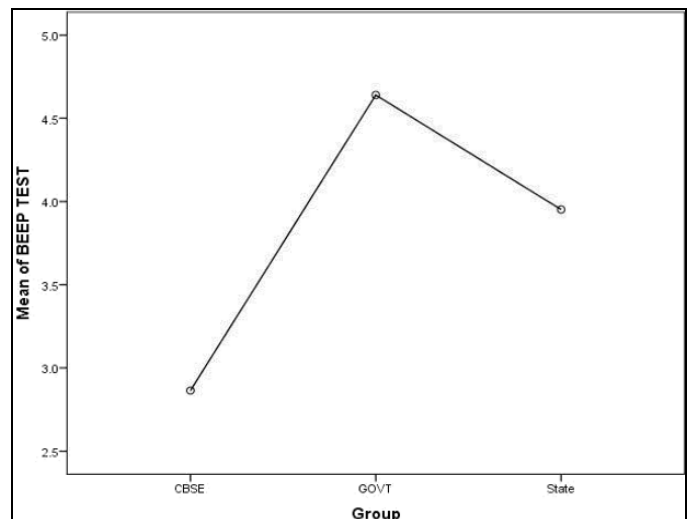


Fig 6: Mean difference of beep test among Private, Govt: and Aided School students (Girls)

Table 9: Analysis of the factors influencing health related physical fitness of private school students (boys)

Variables	N	Am	Sd	Minimum	Maximum	Range
Height	25	157.572	9.93	143.4	177	33.6
Weight	25	51.2	7.44	31	65	34
Sit Up	25	41.68	10.02	24	60	36
Sit and Reach	25	27.21	4.47	19	38	19
Pull Up	25	26.24	5.89	10	40	30
Beep Test	25	5.31	1.78	3	9	6

Table 10: Analysis of the factors influencing health related physical fitness of govt school students (boys)

Variables	N	Am	Sd	Minimum	Maximum	Range
Height	25	152.79	7.29	139	165	26
Weight	25	47.24	4.961	38	55	17
Sit Up	25	27.40	4.29	19	35	16
Sit and Reach	25	28.06	4.722	18	36	18
Pull Up	25	6.88	2.45	2	11	9
Beep Test	25	8.39	1.49	5	11	6

Table 11: Analysis of the factors influencing health related physical fitness of aided school students (boys)

VARIABLES	N	AM	SD	MINIMUM	MAXIMUM	RANGE
Height	25	163.36	8.9	144.5	177	32.5
Weight	25	47.40	9.12	31	65	34
Sit Up	25	46.52	7.258	34	61	27
Sit and Reach	25	45.63	48.63	22	75	53
Pull Up	25	24.68	5.97	10	40	30
Beep Test	25	7.15	1.064	5	10	5

Table 12: One way analysis of variance of mean scores on health related physical fitness variables of private, govt: and aided school students (boys)

		Sum of Squares	Df	Mean square	F	Sig
height	Between groups	1414.707	2	707.354	9.132	.000
	Within groups	5576.778	72	77.455		
	Total	6991.495	74			
weight	Between groups	251.227	2	125.613	2.309	.107
	Within groups	3916.560	72	54.397		
	Total	4167.787	74			
Sit-ups	Between groups	5143	2	2571.773	44.958	.000
	Within groups	4118.640	72	57.203		
	Total	9262.187	74			
Sit and reach	Between groups	5406.589	2	2703.295	3.368	.040
	Within groups	57785.701	72	802.579		
	Total	63192.290	74			
Pull up	Between groups	5784.027	2	2892.013	113.496	.000
	Within groups	1834.640	72	25.481		
	Total	7618.667	74			
Beep test	Between groups	120.080	2	60.040	27.494	.000
	Within groups	157.227	72	2.184		
	Total	277.307	74			

Table 13: Significant difference between paired means on height of private, govt: and aided school students (boys)

Groups		Mean difference	Significance
Private	Govt:	4.83	.056
Private	Aided	5.79	.023
Govt:	Aided	10.62	.000

Table 14: Significant difference between paired means on sit up of private, govt: and aided school students (boys)

Groups		Mean difference	Significance
Private	Govt:	14.60	.000
Private	Aided	4.84	.027
Govt:	Aided	19.48	.000

Table 15: Significant difference between paired means on sit and reach of private, govt: and aided school students (boys)

Groups		Mean difference	Significance
Private	Govt:	0.85	0.916
Private	Aided	18.42	0.024
Govt:	Aided	17.57	0.023

Table 16: Significant difference between paired means on pull up of private, govt: and aided school students (boys)

Groups		Mean difference	Significance
Private	Govt:	19.36	.000
Private	Aided	17.80	.000
Govt:	Aided	17.80	.000

Table 17: Significant difference between paired means on beep test of private, govt: and aided school students (boys)

Groups		Mean difference	Significance
Private	Govt:	3.08	.000
Private	Aided	1.84	.000
Govt:	Aided	1.24	.004

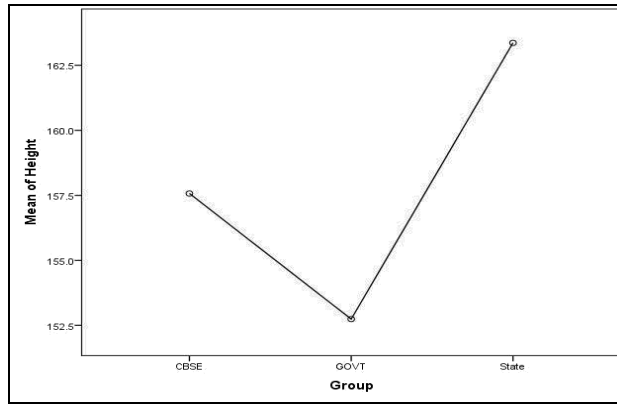


Fig 7: Mean difference of Height among Private, Govt: and Aided School students (Boys)

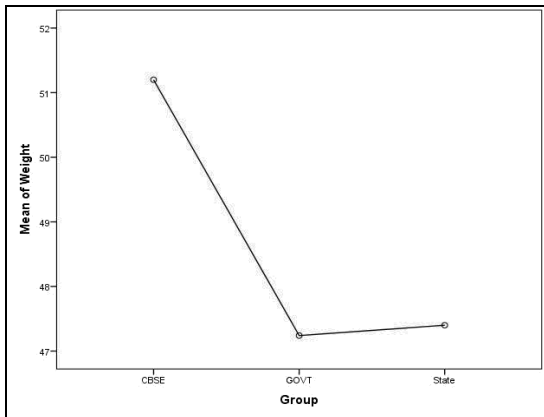


Fig 8: Mean difference of weight among Private, Govt: and Aided School students (Boys)

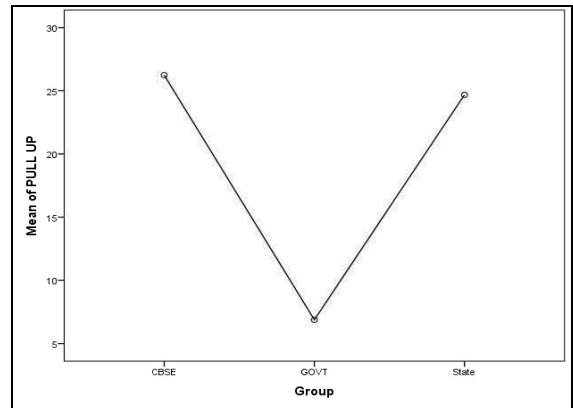


Fig10: Mean difference of pull up among Private, Govt: and Aided School students (Boys)

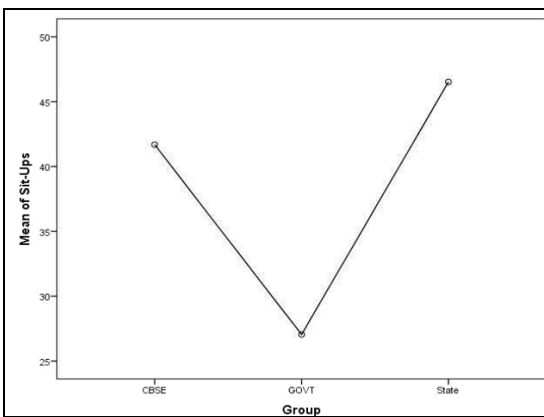


Fig 9: Mean difference of sit up among Private, Govt: and Aided School students (Boys)

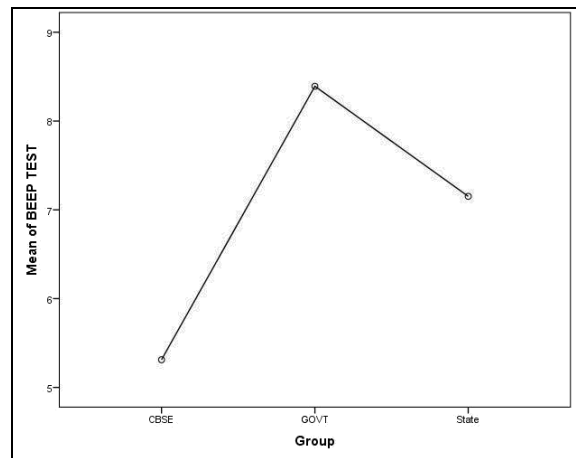


Fig 11: Mean difference of Beep Test among Private, Govt: and Aided School students (Boys)

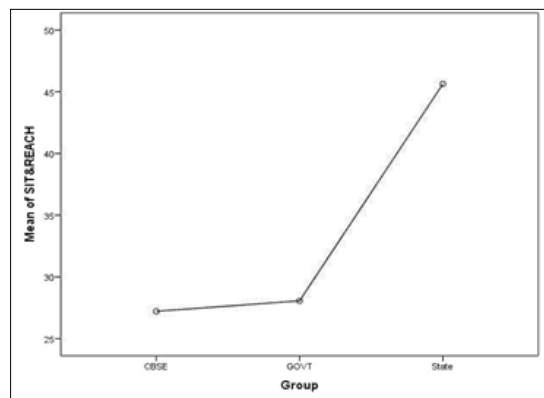


Fig 10: Mean difference of sit and reach among Private, Govt: and Aided School students (Boys)

Conclusions

Within the limitation of the study and on the basis of the obtained results the following conclusions may be drawn:

1. The analyze of health related physical fitness of school students in Kollam District revealed that there is a significant difference exists among the students of different categories of schools (private, aided and govt:) in relation to the selected health related physical fitness variables.
2. There was a significant difference between Private and govt school girls in relation to their body weight.
3. There was a significant difference among all the three group girls in relation to their sit up performance.
4. There was a significant difference between Private and

govt school girls in relation to their sit and reach performance.

5. There was a significant difference between Private and govt school, govt and aided school boys in relation to their height.
6. There was a significant difference among all the three group boys in relation to their sit up performance.
7. There was a significant difference between Private and aided, govt school boys in relation to their sit and reach performance.
8. There was a significant difference among all the three group boys in relation to their performance in pull up and beep test performance.

Recommendations

1. Further research may be done on analyzing difference in physical fitness of college students.
2. Further research may be done on analyzing the physical fitness of children of other age groups.

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