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The Comparative Study of Physical Growth and Flexibility Among Private and Government Secondary School Boys

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Abstract – Several studies evaluated the physical fitness profiles of people in different categories, including college students in India. However, relatively little information is available about physical fitness profiles of the Indian school students, whatever little information that is available on physical fitness in on the Indian school students documented outside Karnataka.

Keywords: Physical growth refers to the increase caused by the biological processes in which a child becomes bigger, in volume and heavier in weight. Individual differences in flexibility depend upon the physiological characteristics that influence the extensibility of muscles and ligaments surrounding a joint

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INTRODUCTION

Health filled life is the fundamental right of every child and they are the best asset on which a nation's development depends on. Though thoughtful actions are being undertaken by not only the government and the school authorities but also by the parents in making the children involve in healthful fitness activities the ground truth of the children suffering from lack of health-related fitness remains unchanged. Involvement of students in physical activates especially in India with the people obsessed with children scoring higher marks in academics and physical education not being the major integral part of our academic curriculum These are during the prenatal period and the first six months of post-natal period and then during the adolescent period. Adolescence is considered as a critical period of development at least in part, because of maturational changes in the body. The growth spurt begins before the sexual development that signals the onset of puberty.

HYPOTHESES

Based on the scholar's knowledge, expert's opinions and available research findings, the following hypotheses were formulated.

1. It was hypothesized that there would not be significant differences in physical growth (height and weight) among the Private and Government Secondary School Boys of different age groups in Karnataka.
2. It was hypothesized that there would not be significant differences in the range of motion at the trunk, hip, shoulder, trunk and neck, ankle and dynamic flexibility among Private and Government Secondary School Boys of different age groups.

SIGNIFICANCE OF THE STUDY

1. The results of the study may help coaches and physical education teachers to identify talented children for flexibility dominant sports events.
2. This study may reveal the pattern of physical growth of Private and Government Secondary School Boys boys of 10 to 14 years belonging to Karnataka state.

METHODOLOGY

For the selections of a subject, the random sampling technique was adopted. A total of 100 subjects, 50 subjects in each age group of 10-14 years among the Private and Government Secondary School Boys were selected for this study. The age of the subjects was ascertained from the school records and accordingly the age groups were classified.

SELECTION OF SUBJECTS

For the selections of a subject, the random sampling technique was adopted. A total of 500 subjects, 50 subjects in each age group of 10-14 years among the Private and Government Secondary School Boys were selected for this study. The age of the subjects was ascertained from the school records and accordingly the age groups were classified.

Table -1

Age-wise distribution of Subjects

S. No.	Age range (Years)	Measure	Private	Government
1	9.5 – 10.5	10	50	50
2	10.5 – 11.5	11	50	50
3	11.5 – 12.5	12	50	50
4	12.5 – 13.5	13	50	50
5	13.5 -14.5	14	50	50
Total No. of Subjects			500	

ANALYSIS OF DATA AND RESULTS

The findings of physical growth and development of flexibility variables such as height, weight, shoulder flexibility, shoulder and wrist flexibility, Trunk and neck flexibility, Trunk and hamstring flexibility, ankle flexibility and dynamic flexibility of Private and Government Secondary School Boys of 10-14 years age group are as shown in the tables given below.

TABLE – 1

2X5 FACTORIAL ANALYSIS OF VARIANCE FOR HEIGHT BETWEEN PRIVATE AND GOVERNMENT SCHOOL BOYS OF 10-14 YEARS OF AGE

Source	Sum of Squares	Degree of Freedom	Mean Squares	'F' Ratio	Table value
Rows (age)	78536.49	4	19634.12	**355.01***	2.42
Column (group)	25553.03	1	25553.03	**462.03***	3.86
Interaction (age and group)	4100.20	4	1025.05	**18.53***	2.38
Error	54751.87	990	55.30	--	
Total	162941.60	999	--	--	

*p<.05
$F_{.05}(4,198)=2.42$
$F_{.05}(1,490)=3.86$
$F_{.05}(4,990)=2.38$

According to the table – 1, statistically significant factors are rows (ages), column (Private and Government) and Interaction (age and groups). As the obtained 'F' ratios 355.01, 462.03 and 18.53 respectively for rows, column and interaction for height are greater than their corresponding table values (2.42), (3.86) and (2.38).

Since interaction is statistically the most significant factor, simple effects test was carried out for boys and among the boys of different age groups (10-14 years) instead of separate posthoc test for rows and column.

The average height between Government and Private boys of 10-14 years age groups and their interaction are presented in figure – 1.

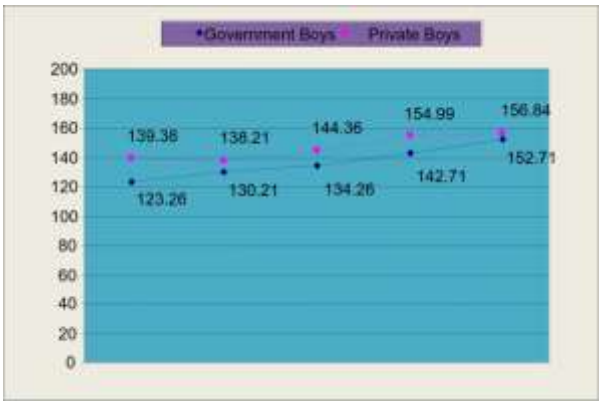

Figure-1: Interaction Effect of Height Among 10-14 years Private and Government Secondary School Boys of Karnataka

TABLE – 2

SIMPLE EFFECTS TEST FOR HEIGHT AMONG PRIVATE AND GOVERNMENT SECONDARY SCHOOL BOYS OF 10-14 YEARS OF AGE GROUP

Source of Variance	Sum of Squares	Degree of Freedom	Mean Squares	F - Ratio	Table value
Government	52370.09	4	13092.52	**236.75***	2.39
private	67078.4	4	16769.60	**303.25***	
10 years	12992.72	1	12992.72	**234.95***	3.89
11 years	3200.00	1	3200.00	**57.87***	
12 years	5100.50	1	5100.50	**92.23***	
13 years	33230.42	1	33230.42	**600.91***	
14 years	820.12	1	820.12	0.148	
Error	54751.87	990	55.30	--	--

*p<.05
$F_{.05}(4,495)=2.39$
$F_{.05}(1,198)=3.89$

From table - 2 above, it is evident that the obtained 'F' ratio 236.75 and 303.25 for the height of Government and Private boys respectively are found to be statistically significant, as obtained 'F' ratio of Private and Government Secondary School Boys are more than the table value (2.89). This result shows that the height differs among 10-14 years age groups of the said groups. Due to this, simple effects, the post-hoc test was applied to compare the paired means of Private and Government Secondary School Boys and also between different age groups (10-14 years) which are presented in table -2.

TABLE – 3

ANALYSIS FOR VARIANCE FOR SHOULDER ROTATION FLEXIBILITY BETWEEN PRIVATE AND GOVERNMENT SECONDARY SCHOOL BOYS BOYS OF 10-14 YEARS OF AGE

Source	Sum of Squares	Degree of Freedom	Mean Squares	'F'Ratio	Table value
Rows (age)	466.01	4	116.50	**11.20***	2.42
Column (group)	1265.62	1	1265.62	**121.69***	3.86
Interaction (age and group)	2319.25	4	579.81	**55.75***	2.38
Error	9940.49	990	10.04	--	
Total	13971.37	999	--	--	

*p<.05
$F_{.05}(4,198)=2.42$
$F_{.05}(1,490)=3.86$
$F_{.05}(4,990)=2.38$

Table-13 demonstrates that there were significant differences in rows (age), column (group) and Interaction (age and groups). The obtained 'F' ratios 11.20, 121.69 and 55.75 for shoulder rotation flexibility are greater than corresponding table values (2.42), (3.86 and 2.38) respectively.

Since interaction was statistically a highly significant factor, simple effects test was carried out for **shoulder rotation flexibility** of Private and Government Secondary School Boys in the age group of 10-14 years, instead of separate post-hoc test for rows and columns.

The average of shoulder rotation flexibility between Private and Government Secondary School Boys of 10-14 years age groups and their interaction are illustrated figure-2.

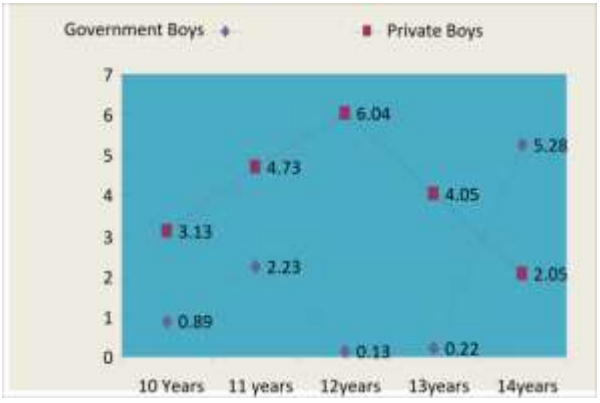

Figure-2: Interaction effect of Shoulder Rotation Flexibility among 10 – 14 years Private and Government Secondary School Boys of Karnataka.

CONCLUSIONS:

Based on the findings of the study, the following conclusions have been drawn.

1. In physical growth of Private boys were found superior in height compared to their Government counterpart in all the age groups.
2. Private boys were found heavier in 12, 13, and 14 years. However, Government boys were found heavier than their Private counterparts in 10 and 12 years.
3. Government boys were found superior in trunk and hamstring flexibility compared to their Private counterparts in all the age groups.

REFFERNCES

Alter, Michael J. (2004). Science of Flexibility, 3 rd ed. United States: Human Kinetics.

Atwater, E. (1983). Adolescence. Englewood Cliffs: Prentice Hall Inc.,

Caissy, G.A. (1994). Early Adolescence: Understanding the 10 to15 year old. New York: Plenum Publication.

Crafty, B.J. (1979). Perceptional and Motor Development in Infants and Children, New Jersy: Prentice Hall Inc.

Furman, W and Buhrmester, D. (1985). "Children's Perceptons of the Persnal Relationship in their Social Network."Development Psychology, 21:6

Maning, M.L. (1986). Developmentally Appropriate Middle Level Schools. Wheator, I.L: Association

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