



EFFECT OF SPORTS PARTICIPATION ON PHYSICAL FITNESS OF GOVERNMENT SCHOOLS BOYS OF BUNDELKHAND REGION

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Abstract:- The purpose of the study was to study the effect of sports participation on physical fitness of government schools boys of Bundelkhand region. The study was delimited to the 120 boys of 14 -17 years of age group who were studying at Government Schools in Bundelkhand Region of Uttar Pradesh, India. To assess the physical fitness of the selected subjects, the variables which were selected are: speed, strength and endurance. Since F-statistics are significant for the growth related variables i.e., height, weight and calf girth thus the null hypothesis of no difference among the adjusted post-mean for the data on height and weight in two treatment group may be rejected at 5% level. F statistics are also significant for the physical fitness variables i.e., for speed, strength, and endurance thus the null hypothesis of no difference among the adjusted post-mean for the data on speed, strength, endurance and also in academic achievements in two treatment groups may be rejected at 5 % level. Further, it was found that there was no significant difference in the post means of some growth related variables i.e., in weight, leg length, arm length, thigh girth, and chest girth of the two treatment group.

Keywords: Physical Fitness , Government Schools Boys

INTRODUCTION

The health enhancing properties of physical activity are evidence-based and widely accepted. Physical activity includes active living, active play, sport, physical education and active transport. Current guidelines recommend that children and youth participate daily in at least 60 minutes of moderate to vigorous intensity physical activity. This activity should be developmentally appropriate, involve a variety of activities and be enjoyable. Physical activity is important to children's current and future health, and adherence to the physical activity guidelines produces a range of direct and indirect benefits. It assists in the control of body weight by increasing energy expenditure, this is important in teaching children and young people how to achieve a healthy 'energy balance', and avoid developing adult obesity. It reduces the risk of developing premature cardiovascular disease, type-2 diabetes, metabolic syndrome and some site specific cancers. In addition, physical activity reduces depression and anxiety (especially in shy children), enhances mood, self-esteem and quality of life. Participation in regular health enhancing physical activity has also been found to reduce rule-breaking behaviour, and to improve attention span and classroom behaviour. Childhood provides a great opportunity to influence attitudes and participation levels positively towards physical activity. A child who emerges from school with confidence in their physical body and skills and who has been exposed to positive experiences in physical activity is more likely to adhere to an active lifestyle as they age. The purpose of the study was to find out the effect of sport participation on the physical fitness of Government School boys of Bundelkhand region of Uttar Pradesh.

METHODOLOGY

Selection of subjects

The study was delimited to the 120 boys of 14 -17 years of age group who were studying at Government Schools in Bundelkhand Region of Uttar Pradesh, India.

Forty boys of individual games and sports (Group I) engaged in playing the activities, namely badminton, athletics, judo, table -tennis, lawn tennis. Other forty boys belonging to team games and sports (Group II) engaged in playing the games, namely hockey, football, volleyball, basketball, cricket, handball. And last forty sedentary boys (Group III) who are not participating in any games and sports will be selected randomly as control group for the study.

Selection of variables

To assess the physical fitness of the selected subjects, the variables which were selected are: speed, strength and endurance.

Limitations

Factors such as diet, daily routine, life style, etc. are beyond the control of the researcher, which are considered as limitations of the study.

Criterion Measure

S.No.	Variables	Test Items	Unit of Measurement
1.	Speed	50 meters run	In 1/10 th of Sec.
2.	Strength	Pull ups (Flexed arm hang)	1-1/2 Inches in diameter, stop watch
3.	Endurance	Cooper 12 mins. Run/ Walk	In meters

Sports Programme as Treatment Variable

S.No	Programme	Month	Contents
1	Conditioning	July to Sept	Calisthenics, circuit training, multi-gym, and other conditioning exercises of aerobic nature
2	Sports Coaching	Oct to Dec	Coaching of not less than 2 ½ months in Individual and team games.
3	Partly competitive and largely recreational	Jan to March	Some tournaments and largely which were postponed, recreational inter class matches in individual and team games, minor games, marching and preparation for sports day, recreation etc.
4	No. Sports only	April to June	Complete sports transitional period. Preparati-on and concentration on (academics) annual exams, followed by relaxation outing, tour etc.

Testing Protocol

S.No	Tests	Test Code	Time of Testing
1.	Test one (Pre-test)	T-1	Before the starting of physical training / conditioning i.e. at zero wee of training.
2.	Test two (Post-Test)	T-2	After the completion one year of physical training / conditioning.

RESULTS

SPEED: Analysis related to the variable speed is presented in the below tables.

TABLE 1 MEAN AND STANDARD DEVIATION OF DIFFERENT GROUPS MEASURED IN POST-TESTING			
TREATMENT GROUP	MEAN	STANDARD DEVIATION	N
INDIVIDUAL GAME	7.76	.514	40
TEAM GAME	7.57	.441	40
CONTROL GROUP	7.84	.428	40

The table above shows the descriptive statistics of experimental group (Individual Game), (Team Game) and Control group. The post testing observed values for Individual game group are 7.76(Mean), and .514 (Standard Deviation).

TABLE 2 ANCOVA TABLE FOR THE DATA ON SPEED					
Source	Sum of Squares	df	Mean Square	F	Sig. (p-value)
Pre	23.546	1	23.546	1745.864	.000
Group	2.215	2	1.107	82.110	.000
Error	1.564	116	.013		
Corrected total	26.635	119			

•R Squared = .941 (adjusted R Squared = .940)

Since p-value of groups is less than 0.05, which indicates that there is significant difference in adjusted means of speed between the three groups.

TABLE 3 PAIR WISE COMPARISON			
Treatment Group (I)	Treatment Group (J)	Mean Diff. (I-J)	Sig. a (P- Value)
Individual Game Group	Team game	.040	.132
	Control game	-.268*	.000
Team Game Group	Individual game group	-.040	.132
	Control group	-.307*	.000
Control group	Individual game group	.268*	.000
	Team game group	.307*	.000

Based on estimated marginal means. *The mean difference is significant at the 0.05 level. a. Adjustment for multiple comparisons: Least significant Difference (equivalent to no adjustments).

STRENGTH: Analysis related to the variable strength is presented in the below tables.

TABLE 4 MEAN AND STANDARD DEVIATION OF DIFFERENT GROUPS MEASURED IN POST-TESTING			
TREATMENT GROUP	MEAN	STANDARD DEVIATION	N
INDIVIDUAL GAME	58.17	5.66	40
TEAM GAME	60.15	6.07	40
CONTROL GROUP	48.92	11.75	40

Table 4 shows the descriptive statistics of experimental group (Individual Game, Team Game) and Control group. The post testing observed values for Individual game group are 58.17(Mean), and 5.66(Standard Deviation).For Team game group, observed values are 60.15 (Mean), and 6.07 (Standard Deviation).For Control group, observed values are 48.92 (Mean), and 11.74(Standard Deviation).

Source	Sum of Squares	df	Mean Square	F	Sig. (p-value)
Pre	7845.274	1	7845.274	3984.886	.000
Group	176.847	2	88.423	44.913	.000
Error	228.376	116	1.969		
Corrected total	10946.500	119			

R Squared = .976 (adjusted R Squared = .979)
 Since p-value of groups is less than 0.05, which indicates that there is a significant difference in adjusted means of strength between the three groups.

Treatment Group (I)	Treatment Group (J)	Mean Diff. (I-J)	Sig. a (P- Value)
Individual Game Group	Team game	-.022	.945
	Control game	2.794*	.000
Team Game Group	Individual game group	.022	.945
	Control group	2.816*	.000
Control group	Individual game group	-2.794*	.000
	Team game group	-2.816*	.000

Based on estimated marginal means

*The mean difference is significant at the 0.05 level.

a. Adjustment for multiple comparisons: Least significant Difference (equivalent to no adjustments).

ENDURANCE: Analysis related to the variable endurance is presented in the below tables.

TREATMENT GROUP	MEAN	STANDARD DEVIATION	N
INDIVIDUAL GAME	2591.25	312.944	40
TEAM GAME	2936.25	253.434	40
CONTROL GROUP	2320.00	265.735	40

The table above shows the descriptive statistics of experimental group (Individual Game, Team Game) and Control group. The post testing observed values for Individual game group are 2591.25(Mean), and 312.944(Standard Deviation).For Team game group, observed values are 2936.25 (Mean), and 253.434 (Standard Deviation).For Control group, observed values are 2320.00 (Mean), and 265.735(Standard Deviation).

TABLE 8
ANCOVA TABLE FOR THE DATA ON ENDURANCE

Source	Sum of Squares	df	Mean Square	F	Sig.
Pre	7753875.13	1	7753875.13	679.08	.000
Group	5098829.10	2	2549414.55	223.27	.000
Error	1324499.86	116	11418.10		
Corrected tot.	16709916.66	119			

R Squared = .921 (adjusted R Squared = .919)

Since p-value of groups is less than 0.05, which indicates that there is significant difference in adjusted means of endurance between the three groups.

TABLE 8
PAIR WISE COMPARISON

Treatment Group (I)	Treatment Group (J)	Mean Diff. (I-J)	Sig. a (P- Value)
Individual Game Group	Team game	-33.693	.210
	Control game	419.828*	.000
Team Game Group	Individual game group	33.693	.210
	Control group	453.521*	.000
Control group	Individual game group	-419.828*	.000
	Team game group	-453.521*	.000

Based on estimated marginal means. *The mean difference is significant at the 0.05 level. a. Adjustment for multiple comparisons: Least significant Difference (equivalent to no adjustments)

CONCLUSIONS

Since F-statistics are significant for the growth related variables i.e., height, weight and calf girth thus the null hypothesis of no difference among the adjusted post-mean for the data on height and weight in two treatment group may be rejected at 5% level.

F-statistics are also significant for the physical fitness variables i.e., for speed, strength, and endurance thus the null hypothesis of no difference among the adjusted post-mean for the data on speed, strength, endurance and also in academic achievements in two treatment groups may be rejected at 5 % level.

Further it was found that there was no significant difference in the post means of some growth related variables i.e., in weight, leg length, arm length, thigh girth, and chest girth of the two treatment group.

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