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Comparative effect of physical activity and yoga on agility and aggression of school students

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Abstract

The purpose of the study was intended to assess the effect of physical exercises and yogic on Agility and Aggression of school students. For this purpose 120 male students were randomly selected out of 536 male students from the Machatora Union High School, Bankura, West Bengal, age of the subjects were ranging between 14 to 16 years. They were divided into three equal groups, each group consist of forty subjects, in which group-1 underwent physical exercises, group-2 underwent yoga practices and group-3 acted as a control group who were not allowed to participate and receive any special treatment apart from their regular curriculum activity. The training period for this study was six days a week for eight weeks, the before and after the training period, the subjects were tested for Agility and Aggression. The analysis of covariance (ANCOVA) was applied to find out which group has better in performance, whenever "F" ratio for adjusted test was found to be significant for the adjusted post-test means Scheffe's test was followed, as post hoc to determine which of the paired means differ significantly. It was drawn conclusions that after the training of physical exercise and yoga both training has improved Agility and Aggression, a significant increase found in Agility and Aggression both the physical exercise group and yoga group but not significant in case of control group. In case of criterion variables aggression, yoga group improved significantly than their counterpart physical activity group.

Keywords: yoga, physical exercise, school students

Introduction

Yoga has a special relevance. The word 'Yoga' originated from Sanskrit 'YUG' meaning connection and communion between individual soul and Supreme Being. Yoga philosophy revolves round self realization and its aim is reunion between diverse personalities. In this era of scientific dynamism yoga has a dominating place for humane development and significant in the solution of physiological, psychological and spiritual problem. Activity is life. Physical activity is the key to being active. Day to day activities of human life involve diverse organic movement, but the movement of internal organs of human body cannot be executed only through daily life physical activities. For this we need some special physical activities that help the movement of both large and small muscles. In this respect Performance is another mention worthy word. The more the performance level goes up, the more its demand is increasing. Today we see contest in every field from normal life to the arena of sports and everyone is bound to contest even though it's happen unconsciously. Success and failure of such contests mostly depend on strength, endurance, agility, aggression etc. those factors when positively exert themselves one can reach the apex of success. Students is the future prospect of the world must inhale this education of physical activity and yoga, that ultimately make them true human beings and this study is solely going to through light on this topic.

Statement of the Problem

The purpose of the present study was to find out and compare the effect of physical activity and yoga on Agility and Aggression of high school students.

Hypothesis

- It was hypothesized that Physical activity practices group and Yoga practices group would significantly improve the Agility and Aggression of the students as compared to control group.

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- It was hypothesized that there will not be any significant difference between Physical activity group as compared to Yoga practices group.

Delimitations of the study

- The study was delimited to the male students, within the age range of 14-16 years.
- The study was restricted to the Machatora Union High School (Bankura, WB) students.
- Voluntary participation of each subject.

Limitations of the study

- Subjects selected for the study were not from the same cultural inheritance, economical status, educational and family back ground, food habits, nutrition and mental growth, thus any influence on variables was beyond the control of the investigator.
- Owing to involvement of different technical persons for conducting the tests, although these testers were oriented with the whole procedure, yet human factors due to

subjective differences might not be avoided, if crept in.

Definition of the related terms

- **Physical Activity:** The term “physical activity” describes any forms of movement, including activities that involve the large skeletal muscles.
- **Yoga:** Yoga means ‘union’ or ‘connection’. A Hindu spiritual and ascetic discipline, a part of which, including breath control, simple meditation, and the adoption of specific bodily postures, is widely practiced for health and relaxation.
- **Agility:** Agility is the ability to change the body's position efficiently, and requires the integration of isolated movement skills using a combination of balance, coordination, speed, reflexes, strength and endurance.
- **Aggression:** Aggression is any form of behaviour directed towards the goal of harming or injuring another living being who is motivated to avoid such treatment.

Graphic 1: Experimental Design of the study

Random Selection	Physical Activity (Experimental Group 1)	O ₁ (40)	T ₁	O ₂ (40)
	Yoga (Experimental Group 2)	O ₁ (40)	T ₁	O ₂ (40)
	Control Group(Group 3)	O ₁ (40)	NA	O ₂ (40)

Schedule of Training Programme

Physical Activity was imparted to Experimental-1 group on three days in a week Monday, Wednesday, Friday morning, and Yoga was imparted to Experimental-2 group on three days in a week Tuesday, Thursday and Saturday for eight weeks as per specific training schedule.

Reliability

- **Reliability of the Test:** Burpee Test and Buss & Perry Aggression Questionnaire.
- **Reliability of the Instrument:** Standard instruments were from different standard companied those provided the Stop Watches, Measuring Tape, and Aggression Questionnaire.

Statistical Procedure

For the purpose of comparing the effect of Physical activity and Yoga on selected Agility and Aggression of high school students Analysis of covariance (ANCOVA) was applied. The Scheffe’s post hoc test was used to find out the compared difference of means.

Level of Significance

For all calculations of the present study the level of significance was fixed at 0.05 level of confidence which was deemed adequate for the purpose of the present study.

Findings

Table 1: Descriptive Statistics of the Criterion Measures Agility (Sec.) and Aggression Post

Criterion Measures	Groups Activity	Mean	Std. Deviation	N
Agility (Sec.)	Physical Activity	14.02500	1.367901	40
	Yoga Activity	14.25000	1.531716	40
	Control Group	11.92500	1.327954	40
	Total	13.40000	1.750870	120
Aggression	Physical Activity	88.50000	4.326424	40
	Yoga Activity	85.22500	4.178624	40
	Control Group	89.02500	3.696759	40
	Total	87.58333	4.380214	120

Table 2: Mean and Standard Error of the criterion Variables Agility (Sec.) Post and Aggression Post after adjusting covariate.

Criterion Measures	Groups Activity	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Agility (Sec.) Post	Physical Activity	14.025 ^a	.173	13.683	14.367
	Yoga Activity	14.250 ^a	.173	13.908	14.592
	Control Group	11.925 ^a	.173	11.583	12.267
Aggression Post	Physical Activity	88.500 ^b	.354	87.800	89.200
	Yoga Activity	85.225 ^b	.354	84.525	85.925
	Control Group	89.025 ^b	.354	88.325	89.725

- a. Covariates appearing in the model are evaluated at the following values: Reaction Time (Sec.) Pre = 12.72500.
- b. Covariates appearing in the model are evaluated at the following values: Aggression Pre = 89.35000.

Table 3: Tests of Between-Subjects Effects Criterion Variable: Agility (Sec.) Post and Aggression Post

Criterion Measures	Source	Type I Sum of Squares	Df	Mean Square	F	Sig.
Agility (Sec.)	Reaction Time (Sec.) Pre	95.078	1	95.078	79.822	.000
	Groups Activity	131.550	2	65.775	55.220	.000
	Error	138.172	116	1.191		
Aggression	Aggression Pre	1363.582	1	1363.582	272.544	.000
	Groups Activity	339.217	2	169.608	33.900	.000
	Error	580.368	116	5.003		

a. R Squared = .621 (Adjusted R Squared = .611) for Agility (Sec.)

b. R Squared = .746 (Adjusted R Squared = .739) for Aggression.

Table 4: Pair wise Comparisons Dependent Variable: Agility (Sec.) and Aggression Post

Criterion Measures	(I) Groups Activity	(J) Groups Activity	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
						Lower Bound	Upper Bound
Agility (Sec.) Post	Physical Activity	Yoga Activity	-.225	.244	.358	-.708	.258
		Control Group	2.100*	.244	.000	1.617	2.583
	Yoga Activity	Physical Activity	.225	.244	.358	-.258	.708
		Control Group	2.325*	.244	.000	1.842	2.808
	Control Group	Physical Activity	-2.100*	.244	.000	-2.583	-1.617
		Yoga Activity	-2.325*	.244	.000	-2.808	-1.842
Aggression Post	Physical Activity	Yoga Activity	3.275*	.500	.000	2.284	4.266
		Control Group	-.525	.500	.296	-1.516	.466
	Yoga Activity	Physical Activity	-3.275*	.500	.000	-4.266	-2.284
		Control Group	-3.800*	.500	.000	-4.791	-2.809
	Control Group	Physical Activity	.525	.500	.296	-.466	1.516
		Yoga Activity	3.800*	.500	.000	2.809	4.791

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Discussion of findings

Information gained from the study, results analyzed of those criterion specific standardized tests conducted for physical activity and yoga group were discussed under this heading.

It was observed from the criterion measures from scientifically and systematically physical activities that were practiced regular, significantly improved the quality of criterion measures e.g. Agility and Aggression of the subjects. It had also been found that the Agility and Aggression were significantly developed with the regular practice of Yoga. Control group was not developed significantly like physical activity group and yoga group.

It may be the reason that all the large and small muscles of a human got proper physical movements for work all the organs and systems smooth functioning, and a close bonding was found between the nerves and muscles of the body of the subjects. Moreover, to produce important ingredients of true social being physical activity and yoga were practiced in groups with friendly relation, co-operation, sympathy, and empathy. It may be concluded that regular physical activity and practice of yoga is beneficial for the development of Agility and Aggression of students.

Conclusions

On the basis of the analysis of data, within the limitations imposed on the experimental conditions, the following conclusion may be drawn:-

- Physical activity practices group and Yoga practices group were significantly developed the Agility and Aggression of the school boys as compared to control group.
- There was a significant difference between Physical activity group as compared to Yoga practices group in management of developing Aggression of the school boys.

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