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Effect of yogic practices on endurance among secondary school students

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Abstract

Yoga is a way to harmonious development of mankind that is physical, mental, intellectual, emotional and spiritual aspect of life. The study was conducted on 80 secondary school students. On the variable Endurance, subjects belonging to experimental groups i.e. Asana, Pranayama and Dhyana group differed significantly than the control group. Agility indicating positive effect of selected yogic practices (Asana, Pranayama and Dhyana).

Keywords: Asana, Pranayama and Dhyana

Introduction

Yoga is a way to harmonious development of mankind that is physical, mental, intellectual, emotional and spiritual aspect of life. The development of a family, a society, a nation and the world depends upon the development of an individual. Individual is the foundation stone of the society. The concept of yoga is that each seed has an inherent capacity gifted by the nature to grow in shape of a big tree. The process of growing into a big tree, laden with flowers and fruits, needs proper soil, irrigation, sunlight, heat and other support. Likewise human beings right from childhood to the old age, need proper diet, education and other facilities in order to become a healthy person and the process of yoga is meant for the total development of an individual. It is clear that the creator of this trinity has made every material and living organism with a definite purpose in order to make the creation well managed and balanced. The human body gets enormous energy and strength. With the help of yogic treatment it gets enlightened about its potential and can make best use of power lying within. Human life is a precious gift of nature, which is not meant for purposeless stress and frustration. Therefore, one should understand responsibilities towards body to make it healthy and worthy for ourselves and for the society at large. The growing children of our society are very vulnerable to this haphazard living style prevalent in our society; therefore, it is very important and essential to impart yogic education to our children. Endurance is considered to be the capacity of an individual to sustain movement or effort over a period of time. (Eckert, Helen M 1974) [5] The muscular endurance may be defined as "the ability of a muscle to maintain a certain level of tension or to repeat identical movements or pressures over the maximal period of time with one's maximal effort. (Kansal, Devinder. K 1996)

Objective of the study

To measure the agility in the Pull-ups movement among secondary school children.

Hypothesis

There exit significant effect of yogic practices on Vital Capacity among senior secondary school children

Psychological variable

1. Pull-ups

Methodology

Sample: The present study was conducted on male subjects of 16 to 19 years of age, studying

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in XI and XII grades in Government Senior Secondary School, Sector 23, Chandigarh. To ensure the selection of subject having normally sound mind in sound body, the investigator checked the health records maintained by the school with the help of a small team of physical instructors and eliminated (20) subjects finally selecting (80) students. Further the selected subjects were assigned the following four (4) groups.

1. Experimental Group I (Asana)
2. Experimental Group II (Pranayama)
3. Experimental Group III (Dhyana)
4. Control Group

Due emphasis was laid on aspects like age, height, weight, past game / sports experience / participation and health records before allocating the groups to ensure homogeneity. Prior to the administration of pre-test; a meeting of all the selected subjects were held in which the principal and the teachers of physical education of the said school were present. The purpose of the study along with various testing procedures and training program were explained to them in detail. Later on the selected subjects were also explained the same so that, they could grasp the importance and should suffer from no confusion what-so-ever regarding the hard work and interest they would have to put in. All the subjects agreed to co-operate whole heartedly. Experimental design: A simple random group design was adopted for this study as it seemed to be the most appropriate one. The eighty (80) subjects were classified into four equal groups with twenty (20) subjects in each group. Three experimental groups (Asana, Pranayama, Dhyana) and fourth as a control group. Training design: The training lasted twelve weeks. There were three sessions of one hour for each group in a week. Time was controlled for each group and the sessions commenced at 7.00 A. M. sharp. The training design was broadly classified as follows.

1. Experimental Group I (Asana): Following exercises short listed & administered on experimental group-I

- Surya Namaskara
- Paschimotianasana
- Sarvangasana
- Halasana
- Pavan Muktasana
- Uthit Padmasana
- Shavasana

2. Experimental Group II (Pranayama): Following was practiced by experimental group-II

- Surya Bhedana
- Kapalbhati
- Sitali
- Sitakari

3. Experimental Group III (Dhyana): Following was administered to Experimental Group III.

- Dot Trataka
- Candle Trataka

Statistical Analysis

To find out the significance of the differences among the groups as a result of training, the analysis of covariance (ANCOVA) was applied since the study employed the random group design and the four groups were not equal with reference to the factors examined through the analysis of covariance, the final means and the adjusted final means were listed for significance. In the case of variables where the F-ratio (ANCOVA) was found significant with regard to paired adjusted means post-hoc test was applied. The level of significance chosen to test the hypothesis was chosen as .05 which was recognized as appropriate in relation to the research process adopted and the equipment used in the study. Finally to find out the significance of the differences between pre-test and post-test means of the two experimental groups and control group ‘t’ test was applied.

Table 1: Analysis of Covariance for three experimental and Control groups on Pull-up

	Asana	Pranayama	Dhyana	Control	Ss	DF	MS	F
Pre-test means	3.10	2.65	2.10	3.50	A: 21.7 W: 253.1	3 76	7.2 3.3	2.18
Post-test means	3.90	3.25	2.70	3.30	A: 14.4 W: 298.0	3 76	4.8 3.9	1.23
Adjusted post-test means	3.65	3.43	3.41	2.67	A: 10.8 W: 65.6	3 75	3.6 0.9	4*

P < .05 = 2.73*

Table presents the pre-test, post-test and adjusted post-test means of asana group, Pranayama, Dhyana group and Control group. The pre-test means for the above same group are 3.10, 2.65, 2.10 and 3.50 respectively. The resultant ‘F’ ratio 2.18 has not been found statistically significant (p < .05)

The proper test means for the same groups are 3.90, 3.25, 2.70 and 3.30 respectively. The resultant ‘F’ ratio 1.23 is not found significant at (p < .05).

The adjusted post-test means for Asana, Pranayama, Dhyana and Control groups are 3.65, 3.43, 3.41 and 2.67 respectively. Hence the analysis of covariance resulted in ‘F’ ratio of 4 which has been found statically significant (p < .05). This indicates that the groups differed at the end of twelve weeks training on Yogic practices. Scheffe’s post-hoc analysis was applied to study the significance of the difference between the paired adjusted final means.

Table 2: Paired Adjusted Final means and differences between the means for three experimental groups and Control group on Pull-up

Adjusted Means				Differences Between Means	Scheffe’s Post-hoc
Asana	Pranayama	Dhyana	Control		
3.65	3.43	-	-	.22	.86
3.65	-	3.41	-	.24	.86
3.65	-	-	2.67	.98	.86
-	3.43	3.41	-	.02	.86
-	3.43	-	2.67	.76	.86
-	-	3.41	2.67	.74	.86

From the description presented in table 2 it has been found that there is no statistical significant differences in the adjusted means between groups of Asana and pranayama, Asana and Dhyana, Pranayama and Dhyana, Pranayama and control, Dhysns and Control groups. The adjusted mean value of Pranayama (3.43) and Control group (2.67) indicates Pranayama better as compared to control group on the variable Pull-up.

However, Asana group is significantly differed in comparison to Control group as the difference between the adjusted means .98 of this group was found greater than the obtained critical ratio.

Table 3: Significance of the difference between pre-test and post-test of experimental groups and control group on Yogic treatment (Pull-up)

Groups	Pre-Test		Post-Test		Pairst 't' Value
	Mean	S.D.	Mean	S.D.	
Asana	3.10	2.25	3.90	2.65	2.78*
Pranayama	2.65	1.69	3.25	1.68	3.35*
Dhyana	2.10	1.59	2.70	1.78	3.35*
Control	3.50	1.70	3.30	1.63	1.49

* t .05 (df .38) = 2.02

In table 3 significance of the differences between pre-test and post-test means of three experimental groups (Asana, Pranayama, Dhyana and Control group) in performance are shown. The pre-test mean values of three experimental and control group viz., Asana, Pranayama, Dhyana and Control group were: 3.10, 2.65, 2.30 and 3.50 respectively. Whereas, the post-test mean values of Asana, Pranayama, Dhyana and Control group were: 3.90, 3.25, 2.70 and 3.30 respectively. The respective t-value were: 2.78, 3.35, 3.35 and 1.49 respectively. The t-values of Asana, Pranayama and Dhyana were found statistically significant at .05 (df .38) level. Whereas, no differences was found between the pre-test and post-test means of the control group on the variable Pull-up. The intra-group differences between the means of pre and post on yogic practices are graphically represented in Figure.

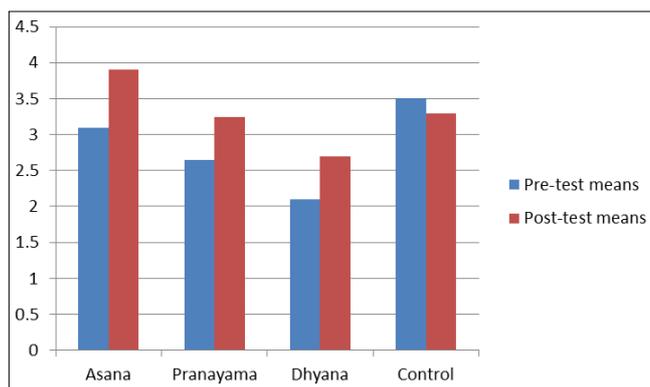


Fig 1: Pre-test and Post-test means of Asana group, Pranayama group, Dhyana group and Control group on the Pull-up

The results of covariance demonstrated significant inter group differences in the variable of pull-up. Therefore to know the direction of differences post-hoc analysis was conducted on pull-up. The finding of the present investigation is in line with the findings of Mahinder (2000) which demonstrated regular practice of Yoga Asana improved the physical fitness component of Endurance. The results of this investigation are to be used with caution because it also presents several contradictions. This study could not demonstrate significant

post-test improvement in motor fitness components.

The subjects belonging to experimental groups i.e., Pranayama group and Dhyana Group differed significantly in their respective level of performance (post-data results). However, experimental group (II); i.e. Pranayama group was better than experimental group (III); i.e. Dhyana group on the variable Shuttle-run. Significant difference was found on pull-ups between the pre-test and post-test levels of both Asana and Pranayama groups. Whereas, no significant difference was found between the pre-test and post-test results of Dhyana and Control groups.

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