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## The effect of yoga and physical exercise on leg explosive strength and agility variables of secondary school students

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### Abstract

The purpose of the study was intended to assess the effect of yogic and physical exercises on leg explosive strength and agility, for this purpose hundred fifty students studying in various classes of Government high school Nagathan of Vijayapura in Karnataka state in age group of 14-16 years were selected. They were divided into three equal groups, each group consist of fifty subjects, in which group-I underwent yoga practices, group-II underwent physical exercises and group-III acted as a control group who were not allowed to participate and receive any special treatment apart from their regular curriculum classes', The training period for this study was six days a week for twelve weeks, the before and after the training period, the subjects were tested for leg explosive strength and agility ability. 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 a post hoc to determine which of the paired means differ significantly. it was drawn conclusions that after the training of yoga and physical exercise both training has improved leg explosive strength and agility, significant increases found in explosive strength among the physical exercise group comparing their counterpart and agility has ability has been increased in the yoga group comparing to physical exercises'

**Keywords:** Yoga, physical exercise, school students

Yoga is the art and science of maintaining physical and mental wellbeing that has its origin in India, is among the most ancient yet vibrant living traditions that is getting increasingly popular today. A potent stress buster, yoga is an instrument of self-evolvement and enlighten, through physical and mental well-being. Math-dimension it enhances the quality of our lives at so many levels. One aspect of yoga's benefits is to explore the bond between health and beauty.

The word Yoga derived from Sanskrit word "YUJ" meaning to yoke, join or unite. This implies joining or integrating all aspects of the individual body with mind with soul- to achieve a happy, balanced and useful life, and spiritually, uniting the individual with the supreme,

Physical exercise in any organised activity that involves continuous participation and effects on the whole body. Exercise occupies a leading role in keeping a person fit. It will be quite difficult to adjunct one's life in terms of stress, diet, and sleep and so on without proper exercise.

Regular practices of asana maintain the physical body in an optimum condition and promote health even in an unhealthy body. Through asana practice, the dormant energy potential is released and experienced as increased confidence in all areas of life, yogasana have a deeper significance value in the development of the physical, mental and spiritual personality, whereas pure exercise only has physical effect on muscles and bones

Physical exercises are performed quickly and with a lot of heavy breathing, yogasana are performed slowly with relaxation and concentration. The benefits of various yoga techniques have been professed to improve body muscular strength, performance, stress reduction, attainment of inner peace and self-realization

Schools are dynamic setting for promoting health and wellness through various correlated areas such as physical education and sports. There is a growing awareness that the health and psycho-social wellbeing of young children is of paramount importance and schools can

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provide a strategic means of children’s health, self-esteem, life skills and behaviour

The yoga and physical exercise are the means to notice all round and harmonious development among school students in the modern society, hence scholar made an attempt explore the “The Effect of Yoga and Physical Exercise on Selected Physical Variables of Secondary School Students “The present study was carried out in the background of the experimental method.

**Hypothesis**

There would be a significant effect of yoga and physical exercises, training on improvement of motor variables of secondary school students.

1. The training of physical exercises leads to better in leg explosive power and agility comparing to yoga training
2. There is no significant difference of yoga and physical exercise training in improving motor and physical fitness abilities among students

**Objectives**

1. To assess the effect of yoga and Physical exercises on motor and physical fitness variables of secondary school students

**Methodology**

The purpose of the study was to find out the effect of yogasana on selected physical variables such as flexibility and explosive power between yoga and Physical exercises group, to achieve the purpose of the study 100 students studying in the Government High School Nathan of Bijapur district of Karnataka has selected randomly as subject for the experiment, they were divided into two equal groups, each group consists of the 50 students. Group I and Group II underwent yogasana and physical; exercises training for six days per week for twelve weeks. Group III Acted as control that did not undergo any special training programme apart from their regular physical education classes programme. The following variables namely explosive power and agility were selected as criterion variables. All the subjects of two groups were tested on selected depended variables at prior to and immediately after the training programme. The analyses of covariance were used to analyze the significant difference, if any among the groups. The 0.05 level of confidence was fixed at the level of significance to test the ‘F’ ratio obtained by the analysis of covariance, which was considered as an appropriate.

**Analysis of the data**

The data collected prior and the after the experimental period on leg explosive strength and agility of yoga and physical exercise group were analyzed and presented in the following Table –I

**Table I:** showing Computation of Covariance of Leg Explosive Power of control Group, Experimental group I(Yogic Exercises) and Experimental group 2 (Physical Exercises) of Secondary school students.

Source Variance	df	Sum of the square	Mean square	Remarks
Between the group	2	11237.293	5618.647	Sig
Within the group	146	20898.500	142.167	

Significant at 0.05 level

**Table II:** showing Leg Explosive Power mean differences of control group (A), group 1(B)( Yogic Exercise) and experimental group 2(C)(Physical Exercise)

GROUP	M1	M2	Diff
Group C & E1	164.960	173.220	-0.260
Group C & E2	164.960	186.00	-21.040
Group E1 & E2	173.220	186.00	-12.780

**Results and findings (Leg Explosive Power)**

Table- II shows the ‘F’ ratio of 39.522 which was greater than the table value of 0.05 level. Hence Scheff’s Post Hoc test was employed for the data the score is 28.72 which was also found significant. Table-III(A) (shows Scheff’s Post Hoc test) shows the mean difference between the three groups. The difference between Group A (control group) and Group B (Yogic exercise) was -0.260. The difference between the Group A (control group) and Group C Experimental group (Physical Exercise) was -21.040. The difference between Group B Experimental groups I (Yogic Exercise) and Experimental group II (Physical exercise) was -12.780. It is greater than table value that is 0.05 level.

**Discussion and findings of Leg Explosive Power**

When we refer TABLE-III it was reveals that computed F ratio was greater than the table value and data was employed to find-out the adjusted paired means that was also significant. From the statistical analysis of the data, it was found that physical exercise has improved speed than their counterpart (Yogic exercise and control group). It may be due to the reason that physical exercise is going to develop fitness qualities and motor factors among the regular practitioners, and they have performed more jumps than yoga group, , hence formulated hypothesis is statistically proved and stated is accepted.

**Table III:** Showing Computation of Covariance of Agility of control Group, Experimental group 1(Yogic Exercises) and Experimental group 2 (Physical Exercises) of Secondary school students.

Source Variance	df	Sum of the square	Mean square	Remarks
Between the group	2	358.694	179.347	Sig
Within the group	147	233.422	1.588	

Significant at 0.05 level

**Table III-A:** Showing the Agility mean differences of control group (A), Experimental group 1(B) (Yogic Exercise) and experimental group 2(C) (Physical Exercise)

GROUP	M1	M2	Diff
Group C & E1	18.836	17.479	1.357
Group C & E2	18.836	15.095	3.741
Group E1 & E2	17.479	15.095	2.384

**Results and findings (Agility)**

Table- IV shows the ‘F’ ratio of 112.946 which was greater than table value of 0.05 level. Hence Scheff’s Post Hoc test was employed to the data the score is 89.474 which was also found significant. Table-IVA (shows Scheff’s Post Hoc test) shows the mean difference between the three groups. The difference between Group A (control group) and Group B (Yogic exercise) was 1.357. The difference between the Group A (control group) and Group C Experimental group (Physical Exercise) was 3.741. The difference between Group B

Experimental groups I (Yogic Exercise) and Experimental group II (Physical exercise) was 2.384. it is greater than table value that is 0.05 level.

### **Discussion and findings of Agility**

When we refer TABLE-IV it reveals that computed F ratio was greater than the table value and data was employed to find-out the adjusted paired means that was also significant. From the statistical analysis of the data, it was found that physical exercise has improved speed than their counterpart (Yogic exercise and control group). It may be due to the reason that physical exercise is having quick nature in performing activities and strenuous these factors might be contributed to develop the agility ability among the trainees, because agility requires the capacity to change their body position speedily in shortest time with limited space, but yoga would be performed in slow phase and steadily, as Patanjali has stated that Asana sthira sukshma, hence asana is expected to perform very slowly and steadily, that nature of activity gradually develops extension in muscles and joints that automatically creates elastic ability in the body that results in free and flexible movement among the practitioners, hence formulated hypothesis is rejected alternative hypothesis is accepted.

### **Conclusion**

The practice of physical exercises and yoga asana were played a significant role in developing and improving the agility factors among the secondary school students, hence was recommended to that the curriculum and yoga syllabus must teach and practice effectively to notice the harmonious development of personality of students.

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