

EFFECT OF SURYA NAMASAKAR ON HEALTH RELATED PHYSICAL FITNESS OF UNDER GRADUATE STUDENTS

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ABSTRACT

In recent times, medical fraternity is attracted towards yoga. Suryanamaskar is a part of yogic practices and is believed to be an all-round exercise. The present study tested efficacy of regular practice of ‘Suryanamaskar’ in improving the health related physical fitness. The present study was conducted on 40 male subjects studying in undergraduate course in Araria College Stadium, Araria, Ranchi (Bihar). It was observed that 6 weeks of Suryanamaskar practice increases shoulder strength, abdominal strength, flexibility, and cardio-respiratory efficiency. At the same time it decreases the fat body mass and lean body mass, as evaluated by skin-fold caliper in male under graduate subjects. From this study we conclude that Suryanamaskar practice can be advocated to improve health related physical fitness for patients as well as healthy individuals.

Key words : Suryanamaskar , Health related physical fitness, Body composition,

INTRODUCTION

India has a rich tradition of yogic practices. Now-a-days yoga, the ancient practice of postures, breathing and meditation is gaining a lot of attention from healthcare professionals. With increasing scientific research in yoga, its therapeutic aspects are also being explored. Suryanamaskar – The salutation to the God Sun, is also a part of Indian traditional yogic practices. Each cycle of suryanamaskar is a sequence of certain 'asanas', performed along with 'pranayama' [1]. The sequence of asanas is such that each asana is complimentary to the next. During Suryanamaskar, muscles of the entire body experience stretch and pressure alternately and therefore it is said to give more benefits with less expenditure of time[2]. It is claimed that suryanamaskar practice gives benefits of both- asana and pranayama and improves general health and fitness. Hence, the present study was undertaken to study effects of suryanamaskar practice on cardio respiratory fitness parameters in young, healthy subjects. Staining of cytology smear that is qualitatively as good as standard Papanicolaou stain for screening of cancer.

Yoga is a 5000-year-old Indian philosophy that combines exercise, breathing, diet, relaxation and meditation. It is a combination of physical and mental disciplines which make the body stronger and healthier and the mind calmer and more controlled, helping towards self-realization. It emphasizes the relationship of body, mind and breath, the synchronization of the breath and movement, the use of preparation, counter pose, sequences of linked postures and modification of postures to suit individual needs.

Yoga is the art of skilful living. It has many aspects. It is about getting to know yourself. Integrating the many aspects of ourselves and putting us in control of our minds; the effects are holistic, bringing about health awareness and a change of attitude towards ourselves and the world around us. We cannot practice Yoga without changes happening within ourselves, becoming more aware that it influences our life and the way we live.

The practice can be low impact but it can also be very demanding. The beauty of Yoga is that it is accessible to everyone, as the session can be adapted to each person's level of fitness or state of health. For those who love Yoga, it becomes a way of life. Whether your path is physical, mental, spiritual or a combination, yoga is for everyone. Most Yoga classes are composed of people with all abilities; these are termed as 'mixed ability' classes. There are classes especially for beginners, intermediate and advanced practitioners, enabling teachers to grade their students and plan the lesson accordingly.

Yoga is good for your posture and structural balance (leading to mental balance), it promotes flexibility and suppleness, strength and stamina, tones the internal organs, improves concentration, teaches you how to breathe more effectively, facilitates deep relaxation and calms the mind.

When you breathe slowly and deeply, more oxygen circulates through the blood. During exercise the cells of the body receive a fresh supply of nutrients and oxygen, so increasing energy, vitality and the flexibility of youth.

Yoga can help a whole range of ailments including asthma, high blood pressure, lower back pain, arthritis, ME, menopausal changes, menstrual problems, stress, anxiety and depression. Yoga movements stretch all the major muscle groups and release built up tension. Through posture work, as the body's circulation increases and bones are properly aligned, age related rheumatism and arthritis can be alleviated.

You should not expect immediate results as Yoga is a gradual, progressive process. However, some people may find instant benefit after their first session. Yoga is not a 'cure all' treatment and care should be taken to find the right teacher and class if you have any medical condition. For some conditions it may be advisable to seek advice from your doctor before commencing a yoga class. It is important that the teacher knows about your condition prior to the practice (all information is confidential).

MATERIALS AND METHODS

In the present study, under graduate students, 40 in number belong to the Araria College Stadium, Araria, Ranchi (Jharkhand) participated voluntarily. Subject were selected randomly. Their age ranged between 18 to 28 years. They all were informed regarding the nature of the study and written consent was obtained. The Following data was collected for all the subjects from the different parameters of health related physical fitness.

Muscular strength was measured by Chin-ups, Muscular endurance was measured by bent knee sit-ups, Cardio-respiratory capacity was measured by 1 minute walk/run, Flexibility was measured by sit and reach test and Body composition was measured by Skin-fold caliper.

Horizonital Bar, Carpet, 400 Meter Track, Paper, Whistle, Flexibility Measurement Scale, Skin Fold Caliper, Stop Watch and Score Board etc. means were used to conduct the test for health related fitness of the concerned respondents.

The training program for Surya Namaskar was implemented upon all the selected subjects for six weeks. Training program for six weeks have been presented as below:

Exercise	Intensity	Repetition	Time	Recovery	Volume
<u>Ist & IInd Week</u>					
SURYA NAMASKAR	50%	07	15 Min.	5 Min.	20 Min.
<u>IIIrd & IVth Week</u>					
SURYA NAMASKAR	55%	15	30 Min.	10 Min.	40 Min.
<u>Vth & VIth Week</u>					
SURYA NAMASKAR	60%	20	45 Min.	15 Min.	60 Min.

RESULTS AND DISCUSSION

To find out the significant difference between pre-test and post-test of health related physical fitness tests of undergraduate male students, Means, Standard deviations and t-ratios were computed and data pertaining to this have been presented in Table 1-7 and depicted in figure 1-6

TABLE 1

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE TEST AND POST –TEST OF CHIN UPS

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	6.18	0.83	0.7	0.20	3.5*
Post-test	6.88	0.93			

*Significant at 0.05 level , $t_{.05 (39)} = 2.021$

It evident from Table 1 that the statistically significant difference was observed between pre-test and post-test means of students in chin-ups test of health related physical fitness , as the obtained t-value of 3.5 was higher than the required $t_{.05 (39)} = 2.02$.

TABLE 2

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE TEST AND POST – TEST OF SIT UPS

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	27.25	5.40	2.48	1.20	2.07*
Post-test	29.73	5.31			

*Significant at 0.05 level

$t_{.05 (39)} = 2.02$

It evident from Table 2 that the statistically significant difference was observed between pre-test and post-test means of students in sit-ups test of health related physical fitness , as the obtained t-value of 2.07 was higher than the required $t_{.05 (39)} = 2.02$.

TABLE 3

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE TEST AND POST –TEST OF SIT AND REACH

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	23.35	5.88	2.6	1.24	2.10*
Post-test	25.95	5.16			

*Significant at 0.05 level

$t_{.05 (39)} = 2.02$

It evident from Table 3 that the statistically significant difference was observed between pre-test and post-test means of students in sit and reach test of health related physical fitness , as the obtained t-value of 2.10 was higher than the required $t_{.05 (39)} = 2.02$.

TABLE 4

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE-TEST AND POST-TEST OF 1 MILE RUN/WALK.

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	526.12	71.43	65.4	13.47	4.86*
Post-test	460.72	46.37			

*Significant at 0.05 level

t .05 (39) = 2.02

It evident from Table 4 that the statistically significant difference was observed between pre-test and post-test means of students in 1 mile run/walk test of health related physical fitness , as the obtained t-value of 4.86 was higher than the required t .05 (39) = 2.02.

TABLE 5

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE-TEST AND POST-TEST OF FAT WEIGHT.

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	13.93	3.81	0.64	0.75	0.85
Post-test	13.29	2.90			

Insignificant at 0.05 level

t .05 (39) = 2.02

It evident from Table 5 that the statistically significant difference was not found between pre-test and post-test means of students in fat weight, as the obtained t-value of 0.85 was lesser than the required t .05 (39) = 2.02.

TABLE 6

SUMMARY OF MEAN, STANTDARD DEVIATION AND T-RATIO OF PRE-TEST AND POST-TEST OF LEAN BODY WEIGHT

Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	51.10	7.39	0.65	1.62	0.40
Post-test	50.45	7.09			

Insignificant at 0.05 level

T .05 (39) = 2.02

It evident from Table 6that the statistically significant difference was not found between pre-test and post-test means of students in lean body weight, as the obtained t-

value of 0.40 was lesser than the required $t_{.05(39)} = 2.02$.

TABLE 7

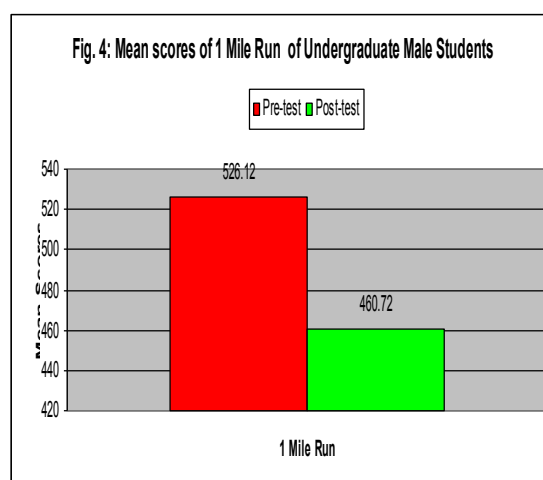
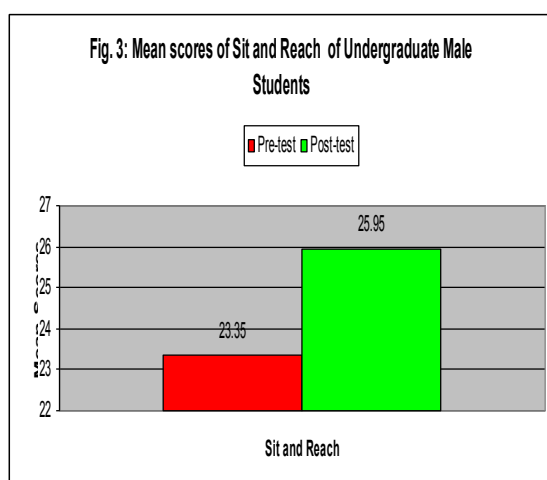
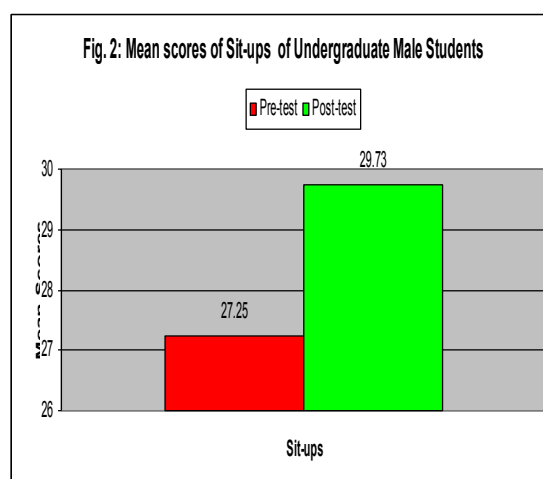
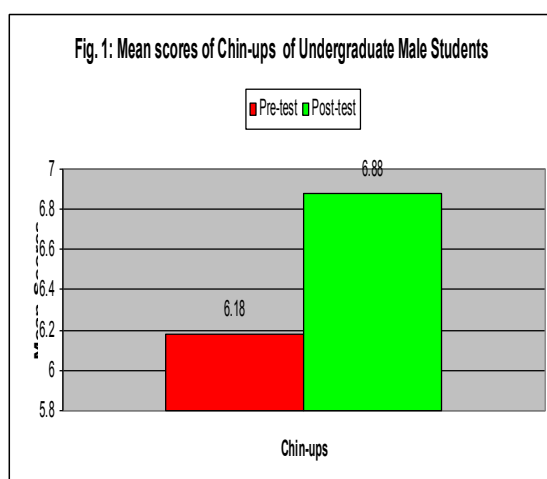
SUMMARY OF MEAN, STANDARD DEVIATION AND T-RATIO OF PRE-TEST AND POST-TEST OF COMPOSITE SCORE .

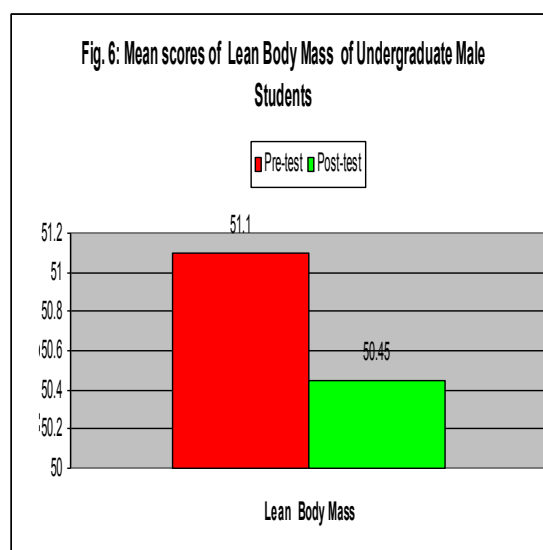
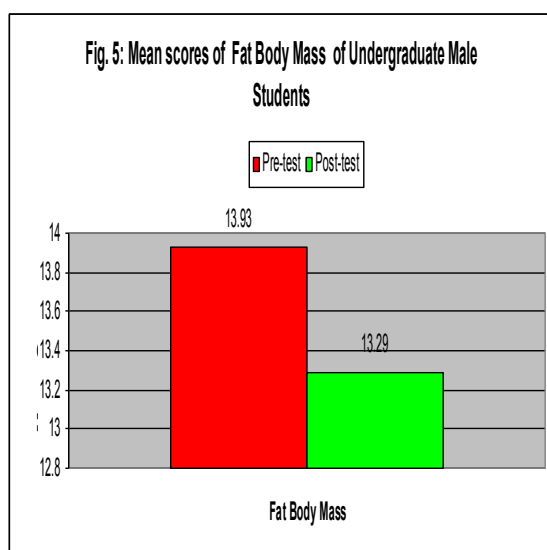
Test	Mean	S.D.	MD	σ_{DM}	t-ratio
Pre-test	286.13	25.55	27.02	5.23	5.17*
Post-test	313.15	20.98			

*Significant at 0.05 level

$t_{.05(39)} = 2.021$

It evident from Table 7 that the statistically significant difference was observed between pre-test and post-test means of students in composite score of health related physical fitness , as the obtained t-value of 5.17 was higher than the required $t_{.05(39)} = 2.02$.





DISCUSSION

As shown in table 1 to 4 the shoulder strength, abdominal strength and endurance and flexibility among undergraduate male students show statistically significant improvement with regular practice of suryanamaskar. Yogic practices also improve respiratory muscle endurance (Madan & Thombre, 1992). I mile run/walk test for endurance, which also showed statistically significant improvement, indicates better respiratory endurance in male undergraduate students after regular practice of Suryanamaskar. Statistically significant reduction in fat body mass and lean body mass after regular practice of suryanamaskaras is attributed to decreased body weight. As a whole, the high statistically significant improvement was observed among undergraduate male students after regular practice of Suryanamaskar.

CONCLUSION

1. Significant difference was observed between pre-test and post-test means of students in their chin-ups, sit-ups, sit and reach, 1 mile run/walk and composite score of health related physical fitness.
2. Under Graduate students did not differ significantly in their fat body mass and lean body mass.
3. Similar body composition was found among under Graduate students of Ranchi.
4. Effect of Surya Namaskar was observed among under Graduate students of Ranchi.

RECCOMENDATIONS

1. The present study though preliminary suggests that regular suryanamaskar practice improves cardiopulmonary efficiency in healthy adolescents and is beneficial exercise for male students. Such yogic practices can be advised to those interested in improving cardiovascular efficiency but cannot undergo strenuous physical exercise. Further research with larger sample size and for varied age groups is required for applying these results to the population in general.
2. Health related fitness can be maintained through Surya Namaskar program during vacation.
3. Similar study may be replicated on different age category students of Schools.
4. Surya Namaskar program may help to promote the physiology of human of unhealthy persons.

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