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# Evaluation of the effects of yogic exercises on the strength development of athletes

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**Abstract**
Yogic exercises not only increase the general strength but also tone up the muscles because these exercises stretch out the muscles and due to their slow stretch and hold nature along with breathing mechanism improves the muscular tone and strength of the muscles. To achieve the purpose of the study six weeks yoga training was administered and Kraus–Weber test is framed to find out the minimum muscular strength required to participate in the training programme and also to find out the improvement in muscular strength after the training programme. The 40 athletes (Boys) who represented Ghaziabad district in the State Level Athletic Meet ranging from 15-17 years of age were drawn as subjects. The results clearly indicated that the six weeks yoga training was improved muscular strength. Hence it is concluded that there is a positive and significant effect of yogic exercises in the improvement of muscular strength of athletes.

**Keywords:** yogic exercises, muscular strength.

## Introduction
The person who is physical fit will be able to carry out the essential of his job without undue fatigue. Fitness is characterized by man's ability to function efficiently with in his potentialities. Fitness implies not only the acquisition of certain physical skills but also the ability to withstand the emergency demands training and competitions.
High level of strength is essential to good performance in all-athletic games and in some events strength is of almost important. Greater strength often results in better performance. Its relative significance varies depending on the nature of the particular activity. A person having muscular fitness can carry out his daily routine efficiently and effectively with least effort and strain. Muscular fitness plays an important role in all aspects of athlete's performance improvement.

## Yogic Exercises
Yogic practices not only make the internal organs fit but also strengthen the muscles. Yogic exercises increase the general strength and tone up the muscles because these exercises stretch the muscles, due to their slow movement and held position with breathing mechanism improves the muscle tone.
Yoga as exercise is a physical activity consisting mainly of postures, often connected by flowing sequences, sometimes accompanied by breathing exercises, and frequently ending with relaxation lying down or meditation. Yoga in this form has become familiar across the world, especially in America and Europe. It is derived from medieval Hatha yoga, which made use of similar postures, but it is generally simply called "yoga". Academics have given yoga as exercise a variety of names, including modern postural yoga and transnational anglophone yoga.
Yoga as exercise has been popularized around the world by claims about its health benefits. The history of such claims was reviewed by William J. Broad in his 2012 book The Science of Yoga; he states that the claims that yoga was scientific began as Hindu nationalist posturing. Among the early exponents was Kuvalayananda, who attempted to demonstrate scientifically in his purpose-built 1924 laboratory at Kaivalyadhama that Sarvangasana (shoulderstand) specifically rehabilitated the endocrine glands (the organs that secrete hormones).

He found no evidence to support such a claim, for this or any other asana.

The impact of yoga as exercise on physical and mental health has been a topic of systematic studies (evaluating primary research), although a 2014 report found that, despite its common practice and possible health benefits, it remained "extremely understudied". A systematic review of six studies found that Iyengar yoga is effective at least in the short term for both neck pain and low back pain. A 2015 systematic review called for more rigour in clinical trials of the effect of yoga on mood and measures of stress.

The practice of asanas has been claimed to improve flexibility, strength, and balance; to alleviate stress and anxiety, and to reduce the symptoms of lower back pain. A review of five studies noted that three psychological (positive affect, mindfulness, self-compassion) and four biological mechanisms (posterior hypothalamus, interleukin-6, C-reactive protein and cortisol) that might act on stress had been examined empirically, whereas many other potential mechanisms remained to be studied; four of the mechanisms (positive affect, self-compassion, inhibition of the posterior hypothalamus and salivary cortisol) were found to mediate the potential stress-lowering effects of yoga.

## Training

The word "Training' has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and even months and years.

## Purpose of the study

The purpose of the study is to assess the selected yogic exercises intervention on strength (muscular strength) development among the athletes. To study the effect of yogic exercises on the muscular strength of the athletes.

## Methodology

The Kraus-Weber test consists of six tests; the first five tests were used to find out the muscular strength and the last one to indicate the flexibility. All the six tests, namely Abdominal Psoas (A+), Abdominal minus Psoas (A-), Psoas and lower abdomen (P), Upper Back (UB), Lower Back (LB) and Length of back & hamstring muscles (BH) are modified and were used to test 40 athletes ranging from 15 to 17 age group. The modified Kraus-Weber test were conducted on the athletes, the pre training performance of athletes is recorded. After the training again the Kraus-Weber test was administered to find out the improvement in the muscular strength of the athletes.

## Test Administration

In order to assess the muscular strength of the subjects the modified Kraus-Weber tests were administered are given below.

## Tests

Abdominal Plus Psoas muscles (A+), Abdominal Minus Psoas muscles (A-)Psoas and Lower abdomen

(P) Upper Back (UB) Lower Back (LB) Back and Hamstring (BH) Apparatus Wrestling mat Stop watch.

## Yogic Exercises

The yogic training consists of the following selected yogic exercises, Sitting yogic exercises, Paschimotanasana (The Posterior Stretch), Ardha Matsyendrasanas, Padmasana (The lotus Posture), Sawankasana (The Hare Posture), Standing yogic exercises, Tadasana (Palm Tree posture), Trikonasana (The Triangle Posture), Padahastasana (The Feet and Hands Posture) Utkatasana.

## Procedure

The modified Kraus-Weber Tests were administered to the athletes. The each test item is demonstrated correctly to the athletes and then asked them to do the same. The yogic exercises are also demonstrated correctly and asked them to do the same.

## Training Schedule

| Weeks | Morning | Evening |
|---|---|---|
| 1st week | Sitting yogic exercises 30 minutes | Standing yogic exercises 30 minutes |
| 2nd week | Sitting yogic exercises 40 minutes | Standing yogic exercises 40 minutes |
| 3rd week | Sitting & standing yogic exercises | Sitting & standing yogic exercises |
| | 50 minutes | 50 minutes |
| 4th week (6 days) | Sitting & standing yogic exercises | Sitting & standing yogic exercises |
| | 50 minutes | 50 minutes |
| 5th week (6 days) | Sitting & standing yogic exercises | Sitting & standing yogic exercises |
| | 40 minutes | 40 minutes |
| 6th week | Sitting & Standing yogic exercises | Sitting & Standing yogic exercises |
| (Alternate one session each day) | 40 minutes | 40 minutes |

## Statistical Technique

Mean, S tandard deviation and t-value were used to compute the dat

## Results and Discussions

From the data obtained the flowing are tabulated for analysis.

**Table 1:** Pre and Pos t-trainin g performan ce of athletes

| Training | | A+ (in 1mt.) | A- (in 1mt.) | P (in secs) | UB (in secs) | LB (in secs) | BH (in secs) |
|---|---|---|---|---|---|---|---|
| Pre-training | M | 24 | 29 | 12 | 13 | 11 | 13 |
| | SD | 3.4 | 4.1 | 2.8 | 3.1 | 2.6 | 3.1 |
| Post-training | M | 31 | 37 | 15 | 16 | 13 | 16 |
| | SD | 4.9 | 4.6 | 3.4 | 3.9 | 3.3 | 4.2 |
| t - value | | 9.7* | 10.78* | 5.65* | 5.00* | 3.95* | 4.77* |

*Significance at 0.05 level

Table 1 and Graph shows the mean scores of pre and post training performance in modified KrausWeber test. It clearly shows the significance difference in the performance of the athletes in two conditions. It means that the yogic asanas introduced to the athletes are responsible for bringing improvement in the muscular strength. The effect of yogic exercises intervention training the muscular strength in the athletes is proved.

## Conclusion

The selected yogic exercises intervention improved the strength (muscular strength) among the athletes. The positive and significant effect of yogic exercises on the muscular strength of the athletes. The selected yogic

exercises because of their slow movement and held position improve the muscular tone. This improved muscle tone of the abdominal, lower back, upper back and back & hamstrings is responsible for the improvement of muscular strength of the athletes.

**Recommendations**

The results of the survey taken of the muscular fitness of the athletes should be great concern to the coaches and trainers in the welfare of the athletes. The results bring out the weakness of the athletes and also suggest the importance of including suitable yogic exercises for the improvement of muscular fitness. A larger sale of study may be conducted on state, national and international athletes and also on different genders for longer periods.

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