

Effect of Surya Nainiaskar, Pranayama and Meditation on Selected Physical Fitness Variable (Strength) of State-Level Arm Wrestlers

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Abstract. The purpose of the present study was to investigate the effect of Surya Namaskar, Pranayama, and Meditation on the strength of state-level arm wrestlers. Strength is a key component in arm wrestling performance, especially grip strength and upper body force. A total of 200 female state-level arm wrestlers aged 19–25 years were selected and randomly divided into an experimental group, Group E Yog (n= 100) and a control group, C Control (n=100). The experimental group underwent a 6 months yogic training program consisting of Surya Namaskar, Pranayama, and Meditation, while the control group continued their routine training. Strength was measured by holding time in squatting hand standing (Modified Bhujangasana) test. The results indicated a significant improvement in strength among the experimental group compared to the control group. The study concludes that yogic practices are effective in enhancing muscular strength in arm wrestlers.

keywords: Surya Namaskar, Pranayama, Meditation, Physical Fitness, Strength, Muscular Strength

I. Introduction

Arm wrestling is a power and strength-oriented sport requiring high levels of muscular strength, particularly in the forearm, wrist, biceps, and shoulder muscles. Traditional strength training methods mainly focus on resistance exercises, but holistic approaches such as yoga are increasingly recognized for their benefits.

Surya Namaskar (Sun Salutation) is a sequence of 12 dynamic yoga postures that engage multiple muscle groups. It improves muscular strength through repeated weight-bearing movements. Pranayama enhances oxygen supply to muscles, thereby improving endurance and recovery, while meditation increases focus, reduces stress, and enhances neuromuscular coordination.

Integrating these yogic practices may provide a comprehensive method to improve strength performance in athletes, especially arm wrestlers.

II. Method

Squat Hand Standing (Modified Bakasana) Purpose: To measure Hands Strength
Equipment: Yoga mat and stop watch.

Administration: Sit in squinting position and bend down, place both hands before the feet with the fingers putting forward. Then pence the knee on the arms above the elbows. Keep the knee as near the armpits as possible and the toes kept together. Now bend slowly lifting the feet from the ground and balancing on the hands. Keep the head up with the breath held inside or normal breath according to your capacity. Then return S original positions.

Scoring: Holding time in final position of the posture by the subjects. One fair trial was allowed.

III. Data Collection

Focusing nature and objectives of present study researcher approached Khalsa College for women in civil line Ludhiana, Punjab and after securing permission prepared basic data for matching and group formation. Thus, two groups of 100 no. of subjects were formed. As per the details provided above, specific conditioning exercises were administrated to both experimental groups. The data collection was done on two stages. First pre-test and second post-test data of both groups i.e. the Experimental Group E YOG & Control Group i.e. Group C CONTROL. Training was conducted during evening session ie. 4:15 pm to 6:15 pm, and data was collected through electronic instruments and test battery on independent variables. Similarly, before starting of training, pre-test data was recorded, and final data was taken after completion of the training program.

Statistical Techniques

The data would have been no utility unless it was analyzed and interpreted by statistical techniques. Analysis of data meant studying the tabulated material in order to determine inherent facts and meaning to fulfil the need for research problems. This practice included breaking up off complex factors into simpler parts and putting them in new arrangements for the purpose of the investigation. Statistical techniques like mean score. Standard deviation, t-ratio, paired t-test Chi square test. Fisher's exact test, etc. Have been used. Thus, pre-test and post-test data were treated for proper analysis and interpretation.

In this case, the t-test was best suited, and two samples were related. Hence, the researcher applied a paired t-test to check pre-tests data and post-test data analysis in Experimental Group E YOG and Conool Group C Control. Value oft' checked at 0,05.

Administration of the Tests

Procedure for collecting data: The team consisting of the researcher, along with four to five co-

workers (physical education teachers, coaches), contacted the “Principal” of Khalsa College, Punjab, and the purpose of the study was explained by the investigator. The researcher requested to Principal to establish training center for Yogasana and requested to provide the subjects and taken assurance that all the subjects should be present in the training sessions and must appear for pre-tests and post tests. Firstly, the personal data regarding name, age of the participant, class were collected with the help of a performs prepared by the investigator.

Then, the investigator and her panel of co-workers conducted a test with squat Hand Standing (Modified Bakasana) to measure Hands Strength & then started the training programme. After trainkig for measuring improvements in Hands Strength, squat Hands Strength (Modified Bakasana) was conducted for post-test data.

IV. Data analysis and Results of the study

1. Pre-Test Findings

Strength

Table 1: Mean Strength score of players in both groups during pre-test

Group	Mean	Std. deviation	Mean difference	t-value	p-value
Experiment	37.27	7.07	0.004	0.004	0.997 ^N
Non Experiment	37.26	7.03			

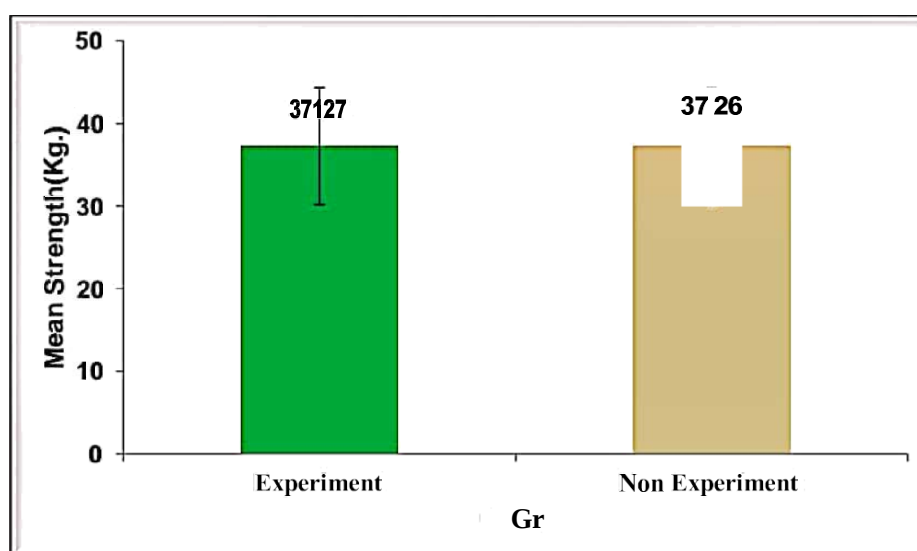


Figure 1: Mean Strength of players during pre-test

Table 2: Mean Strength of players in both groups during post-test

Group	Mean	Std. deviation	Mean difference	t-value	p value
Experiment	40.78	7.07	3.490	3.521	0.001
Non Experiment	37.29	6.94			

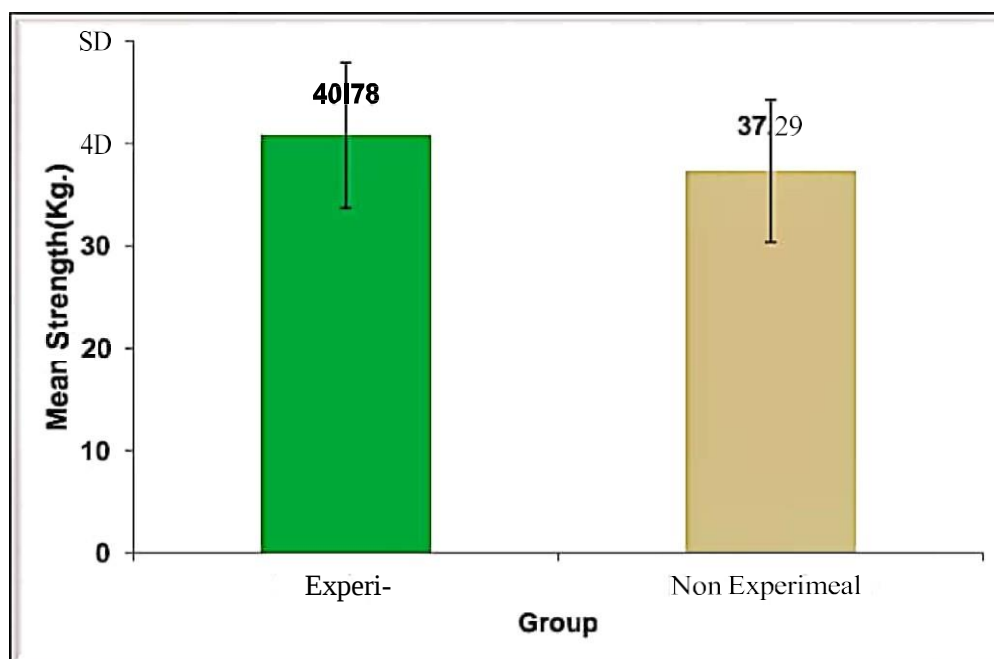


Figure 3: Change in mean Strength of players in each group

V. Discussion

1. Pre-Test Results

The results in Table 5, showed that there is no significant difference ($p > 0.05$) in Strength between Experimental Group E YOG and Control Group C Control.

2. Post-Test Results

The results in Table 6, showed that there is highly significant difference ($p < 0.05$) in Strength as compared between Experimental Group E YOG and Control Group C Control.

3. Impact of Training

S. In this section the researcher had attempted to assess the impact of training and compare Experimental Group E YOG and Control Group C Control after duration 6 months.

The results shown in Table 7, that there is a significant difference ($p < 0.001$) change in Strength of players iE Experimental Group E YOG while on the other hand Non-significant ($p > 0.05$) was seen in Control Group C Control. Thus the Hypothesis H2 'There may be a significant effect of Surya Namaskar, Pranayaina and Meditation on the strenplh of state level arm wrestlers.' Was accepted in the study.

References

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