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INFLUENCE OF YOGASANA AND CORE RESISTANCE TRAINING ON A FEW HEALTH-RELATED PHYSICAL FITNESS FACTORS IN FEMALE SPORTS

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Abstract:

The aim of the research was to investigate how specific physical fitness components among female athletes are affected by core strength training and yogasana practices. In order to fulfill the study's objectives, 45 female athletes from Meerut, Uttar Pradesh, India were chosen at random to serve as subjects. The subjects were between the ages of 14 and 19. Each of the three equal groups of fifteen volunteers (n = 15) was assigned an experimental group name. Group I got core strength training, Group II underwent yogasana practices, and Group III served as the control. The trials will last no more than 15 weeks, four days a week, and 45 to 60 minutes each day with the appropriate routine for warming up and cooling down. Muscular strength and muscular endurance were among the chosen health-related physical fitness components that were examined as criteria variables. The training regimen that was chosen included both yoga and core strength training. Individuals' 1 RM will be used to determine the load for the core strength exercise, and the intensity will be adjusted between 75% and 90%. Using the analysis of covariance (ANCOVA), the pre-test and post-test means of experimental groups I, II, and the control group will be examined for significance. For significance, the degree of confidence is set at 0.05. Furthermore, when the F-ratio of the adjusted post-test means is significant, Scheffe's post-hoc test will be used to determine whether there is a paired mean difference between the groups for each variable independently. According to the study's findings, yoga and core strength training significantly improved physical fitness levels connected to health.

Keywords: *Women Athletes, Core Strength, Yogasana, Physical Fitness.*

INTRODUCTION

The pelvic floor muscles, diaphragm, multifidus, and transverse abdominus are some of the muscular groups that make up the "core." Together, these muscles provide optimal stability in the lower back and abdominal area and coordinate the movement of the arms, legs, and spine. Since most people do not

intentionally engage these muscles, it is crucial to understand how to co-contract these muscles during these rehabilitation exercises (Behm DG, 2005). The deep abdominal and lower back muscles comprise your body's core. They help your arm and leg muscles function properly and support and shield your low back (Cholewicki J, McGill SM, 1996).Researchers have identified the importance of a strong core in relation to back pain and rehabilitation and developed tools used to measure core strength and stability While the importance of the core and methods of training and assessing it has been largely publicized, few studies have been completed which quantitatively demonstrate core strength's role in strength and performance (**Cissik JM, 2002**). Running performance and economy, and core strength in high school aged touch football and basketball athletes. Groups from each study completed core training and groups that underwent training experienced improvements in core strength (**Duncan RA, McNair PJ, 2000**). Core strength of a number of sport performance variables in divisional football players and found weak to moderate correlations. Explanations for the lack of significant relationships in these studies include inconsistent methods used to measure core strength with the performance variables, the population tested, or there is no relationship (**Liemohn WP, Baumgartner TA, 2005**).

Yoga is essentially a spiritual discipline based on an extremely subtle Science, which focuses on bringing harmony between mind and body. It is an art and science for a healthy living. The word "Yoga" is derived from the Sanskrit root *yuj* meaning "to join", "to yoke" or "to unite".

According to Yogic scriptures, the practice of Yoga leads to the union of individual consciousness with universal consciousness. According to modern scientists, everything in the universe is just a manifestation of the same quantum firmament. One who experiences this oneness of existence is said to be "in Yoga" and is termed as a yogi who has attained a state of freedom, referred to as Mukti, nirvāna, kaivalya or moksha.

Yoga is a means of balancing and harmonizing the body, mind, and emotions. This is done through the practice of Asana, Pranayama, Mudra, Bandha, Shatkarma, and Meditation, and must be achieved before the union can take place with the higher reality (Kristal AR, 2005).

Asanas: "Sthiram, Suktham Aasanam" Hathasya prathamaangatvaadaasanam poorvamuchyate. Kuryattadaasanam sthairyamaarogyam chaangalaaghavam. Prior to everything, asana is spoken of as the first part of Yoga. Having done asana, one attains steadiness of body and mind, freedom from disease and lightness of the limbs - Hatha Yoga Pradipika (1:7)

The Hatha Yogis, however, found that certain specific asanas, open energy channels, and psychic centers. They found that developing control of the body through these practices enabled them to control the mind and energy. Yogasanas became tools for higher awareness, providing the stable foundation necessary for the exploration of the body, breath, mind and higher states. For this reason, asana practice comes first in texts such as Hatha Yoga Pradipika (Karunakaran .K and V. Ramesh .V, 2009).

In the yogic scriptures, it is said that there were originally 8,400,000 asanas, which represent the 8,400,000 incarnations every individual must pass through before attaining liberation from the cycle of birth and death. These asanas represented a progressive evolution from the simplest form of life to the most complex; that of a fully realized human being. Down through the ages, the great rishis and yogis modified and reduced the number of asanas to the few hundred known today.

METHODOLOGY

In order to fulfill the study's objectives, 45 female athletes from Meerut, Uttar Pradesh, India were chosen at random to serve as subjects. The subjects were between the ages of 14 and 19. The subjects were split into three equal groups, each with fifteen members (n = 15). Group I, the experimental group, performed core strength training, Group II undertook yogasana activities, and Group III served as the control group. The trials will last no more than 15 weeks, four days a week, and 45 to 60 minutes each day with the appropriate routine for warming up and cooling down. The selected health related physical fitness components such as muscular strength (Squat) and muscular endurance (Sit-Ups) were selected as criterion variables and tested. The core strength training and the yogic practices will be selected as training protocol. The core strength training will be given based on individuals 1 RM to set the load and the intensity will be set between 75% to 90% and the training routine includes Crunches, Decline Crunch, Cable Crunch, Oblique Crunches, Jackknife Sit-Up, Barbell Side Bend, Leg lift, Leg lift - Hang Position, Oblique Leg lift, Suryanamaskar. Tadasana, Trikonasana, Paschimottanasana, Chakrasana, Bhujangasana. The pre-test and post test means of experimental groups I, II and control group will test for significance by applying the analysis of covariance (ANCOVA). All the data will analyse using a computer with SPSS statistical package. The level of confidence is fixed at 0.05, for significance. In addition to this, Scheffe's post-hoc test will be employed, when the F-ratio of the adjusted post-test means is significant, to find out the paired mean difference if any among the groups for each variable, separately.

RESULTS

ANCOVA and Post Hoc Test of Selected Physical Fitness Variables among Core Strength Training Group, Yogasana Practice Group, and Control Group

Variables	**ANCOVA**			**Scheffe's Post Hoc Test**		
	Groups	**Adjusted Post Test Mean**	**'F'**	**Pair**	**MD**	**'P' Value**
Muscular	**Ex-1**	32.32	**91.54***	**Ex-I Vs Ex 2**	0.728	0.01
	Ex-2	31.59		**Ex-1 Vs Con**	***3.056****	0.00*

Strength	**Con**	28.54		**Ex-2 Vs Con**	***3.784****	0.00*
Muscular	**Ex-1**	35.25		**Ex-I Vs Ex-2**	0.033	0.93
Endurance	**Ex-2**	35.21	**72.01***	**Ex-1 Vs Con**	***3.625****	0.00*
	Con	31.59		**Ex-2 Vs Con**	***3.658****	0.00*

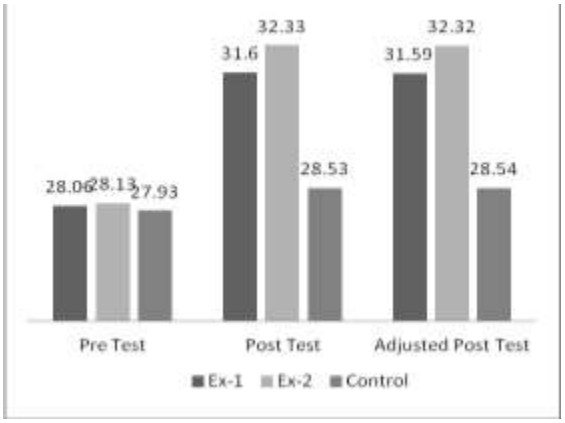
***Significant**

Ex-1 - Core Strength Training Group, **Ex-2 -** Yogasana Practice Group, **Con** – Control Group. **MD** – Mean Difference

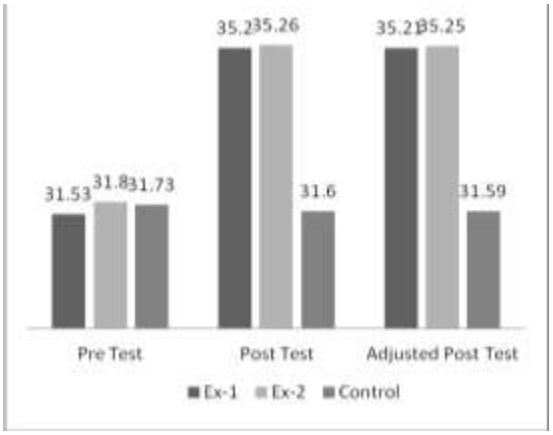
The aforementioned table demonstrates that, with regard to some characteristics like muscular strength and muscular endurance, there was a substantial difference between the Core Strength Training Group, Yogasana Practice Group, and Control Group. In terms of muscle strength and endurance, there was a notable distinction between the yogasana practice group and the core strength training group. The control group did not experience any changes in any of the components of physical fitness. The groups did not significantly differ as a result of the yogasana and core strength training.

The Bar Diagram Shows the Pre, Post and Adjusted Post Test Mean Values of Muscular Strength and Muscular Endurance of Core Strength Training Group, Yogic Practice Group and Control Group

MUSCULAR STRENGTH



MUSCULAR ENDURANCE



DISCUSSION

Based on the result of the study the core strength training imporves physical fitnaess components such as muscular strength and endurance among women athletes when compared with yogasana practice. Moreover, the yogasann apractice have been the posivtive influnce on physical fitness components. In-line with previous results of various field of scientific studies will comforme the present of the result of the study discussed below. **Sato, K, and Mokha, M. (2009)** examined core strength training influence running

kinetics, lower-extremity stability. The study was to determine the effects of 6 weeks of Core strength training on ground reaction forces. Core strength training may be an effective training method for improving performance in runners. **Sekendiz, B, Cuğ, M, and Korkusuz, l, 2010** investigate the effects of Swiss-ball core strength training on trunk extensor. Results of the multivariate analysis revealed a significant difference between pre and post measures of 60 and 90° s−1 trunk flexion. **Tracy, BL, and Hart, CEF, 2013** revived the effects of yoga on general physical fitness, despite the widespread participation in this form of exercise. Yoga subjects exhibited increased dead lift strength, substantially increased lower back/hamstring flexibility, increased shoulder flexibility, and modestly decreased body fat. There were no changes in handgrip strength, cardiovascular measures, or maximal aerobic fitness. In summary, this short-term yoga training protocol produced beneficial changes in musculoskeletal fitness that were specific to the training stimulus. **Clark et al, 2017**, examined the effect of pelvic and core strength training on running performance. Clinically significant findings reveal a 6-week pelvic and core stability strengthening program 3 times a week in addition to coach led team training may help decrease race times. There were no studies combined core strength and yogasana practice on the influence of any fitness variables. Some studies conformed that the yogasana practice improved fitness variables among young athletes such as the study conferred by **Dhananjai et al. (2010)** and **Saremil et al. (2010). Slawta et al. (2008)** stated that 12-weeks yoga intervention, significant improvements were observed in body composition, fitness.

CONCLUSIONS

According to the study's findings, yoga and core strength training significantly altered the indices of physical fitness. Certain aspects of the control group's physical fitness remained unchanged. When compared to yogasana practice, the core strength training program among female athletes demonstrates superior fitness improvement. Regarding certain physical fitness metrics, there was no discernible difference between the yoga practice group and the core strength training group. Certain physical fitness components demonstrate a positive improvement in the yogasana practice when compared to baseline data.

REFERENCES

1. Sato, K, and Mokha, M. Does core strength training influence running kinetics, lower-extremity stability, and 5000-m performance in runners? J Strength Cond Res 23(1): 133-140, 2019-
2. Abstract: Clark, AW, Goedeke, MK, Cunningham, SR, Rockwell, DE, Lehecka, BJ, Manske, RC, and Smith, BS. Effects of pelvic and core strength training on high school cross-country race times. J Strength Cond Res 31(8): 2289–2295, 2017—
3. Abstract: Tracy, BL and Hart, CEF. Bikram yoga training and physical fitness in healthy young

adults. J Strength Cond Res 27(3): 822–830, 2013—

4. Sekendiz, B, Cuğ, M, and Korkusuz, F. Effects of Swiss-ball core strength training on strength, endurance, flexibility, and balance in sedentary women. J Strength Cond Res 24(11): 3032-3040, 2020-
5. Dhananjai, S., et al., (2020), "Effect of Yogic Practices on Physical and Biochemical Parameters in Obese", *International Symposium on Yogism*, p.3.
6. Saremil A., et al., (2020), "Twelve-Week Aerobic Training Decreases Chemerin Level and Improves Cardiometabolic Risk Factors in Overweight and Obese Men", *Asian Journal of Sports Medicine*, 1(3), pp.151-158.
7. Behm DG, Leonard AM, Young WB, Bonsey WAC, Mackinnon SN. Trunk muscle electromyographic activity with unstable and unilateral exercises. J Strength Cond Res 2005; 19:193-201.
8. Cholewicki J, McGill SM. Mechanical stability of the in vivo lumbar spine: Implications for injury and chronic low back pain. Clin Biomech 1996; 11:1-15.
9. Cissik JM. Programming abdominal training, part one. Strength Cond J 2022; 24(1):9-15.
10. Duncan RA, McNair PJ. Factors contribution to low back pain in rowers. Br J Sports Med 2000; 34:321-322.
11. Hodges PW, Richardson CA. Inefficient muscular stabilization of the lumbar spine associated with low back pain: A motor control evaluation of transversus abdominis. Spine 1996; 21:2640-2650.
12. Liemohn WP, Baumgartner TA, Gagnon LH. Measuring core stability. J Strength Cond Res 2005; 19(3):583-586.
13. Kristal AR, Littman AJ, Benitez D. and White E., (2005), "Yoga Practice is Associated with Attenuated Weight Gain in Healthy, Middle Aged Men and Women", *Alternative Therapies Health and Medicine.* 11(4), pp.28-33.
14. Karunakaran .K and V. Ramesh .V Effect of Raja Yoga and Pranayama on elected Physical and Physiological Variable of Adults, *Indian Journal of Scientific Yoga*, 2019:2(2), pp.5-13.
15. Elangovan E.R. and S. Babu, (2021), "Effect of Yogic Practices on Selected Bio-Chemical Variables of Obese College Man",*Facts of Sports Science*, Krishna Publications, Tirunelveli. pp. 22 – 26.