COMBINED EFFECT OF ISOMETRIC STRETCHING EXERCISE AND YOASANA PRACTICES ON CALF CIRCUMFERENCE AMONG ELITE COLLEGE LEVEL SPORTSPERSON

M DHANUNJAYA, D SYMALA BAI, C LAVANYA KUMARI
ASSISTANT PROFESSOR [1,2,3]
dhanu_jay@gmail.com, dsyamala17@gmail.com, lavanya_kumari88@gmail.com
department of Physics, Sri Venkateswara Institute of Technology,
N.H 44, Hampapuram, Rapthadu, Anantapuramu, Andhra Pradesh 515722

Abstract

The present study aimed to investigate the effects of yoasana practices on calf circumference among elite college athletes by combining them with isometric stretching activities. This study aimed to recruit 30 male collegiate athletes from affiliated institutions at Bharathidasan University in Tamil Nadu, India, and complete it by 2020. People between the ages of 18 and 25 make up the sample. Athletes were randomly assigned to either an experimental group or a control group. There were fifteen athletes in each group. The control group conducted isometric stretching and yoasana for six weeks straight. The control group was not instructed in any way throughout the investigation. Calf circumference was the criterion variable used by the researchers in this investigation. As part of the testing method, the patients' calf circumference was measured using a steel tap. At the start and finish of the six-week training sessions, respectively, the pre- and post-training evaluations were given. Statistically, the 't' ratio was used to examine the means of the pre- and post-test data for both the experimental and control groups. According to the results, a notable disparity existed on the criterion variable. Thanks to the synergistic benefits of yoasana and isometric stretching, the experimental group outperformed the control group in terms of calf circumference. The "t" ratio, calves' circumference, yoasana, and combined isometric stretching are among the terminology used to characterise this kind of exercise.

INTRODUCTION

Yoga has the potential to help people of all ages. Philosophers find Yoga to be an enchanting discipline because it helps one to rest their mind, which in turn brings them to full knowledge of the intrinsic essence of the Supreme Being. Since PE boosts efficiency and performance on the pitch, it is the single most significant component when considering sports. A few of the physical benefits that may be attained via asana practices include strengthening the muscles and increasing the physical demands of the event or activity. Isometric stretching, which does not involve movement but rather the tensioning of stretched muscles, offers resistance. Isometric stretching is a far more effective way to quickly increase static or passive flexibility than either active stretching or passive stretching on its own. You should only practice one set of isometric stretches each day due to the strain it puts on your muscles, tendons, and joints.

RESEARCH METHODOLOGY

Selection of subjects

The research set intended to measure the impact of yoasana practices and isometric stretching on calf circumference in collegiate athletes at the highest level. In order to accomplish this goal of the research, collegiate athletes were chosen at random to participate.

People ranging in age from 18 to 25 made up the sample.

Selection of variable

Independent variable

- Isometric stretching exercise and yoasana practices

Dependent variable

- Calf circumference

EXPERIMENTAL DESIGN AND IMPLEMENTATION

The selected subjects were divided into two equal groups of fifteen subjects each, such as a combined isometric stretching exercise and yoasana practices group (Experimental Group) and control group. The experimental group underwent combined isometric stretching exercise and yoasana practices for five days per week for six weeks. Control group, which they did not undergo any special training programme apart from their regular physical activities as per their curriculum. The following anthropometric variable namely calf circumference was selected as criterion variable. All the subjects of two groups were tested on selected criterion variable Calf circumference was measured through steel tap at prior to and immediately after the training programme.

Statistical technique

The‘t’ test was used to analysis the significant differences, if any, difference between the groups respectively.

Level of significance

The 0.05 level of confidence was fixed to test the level of significance which was considered asan appropriate.

ANALYSIS OF THE DATA

The significance of the difference among the means of the experimental group was found out by pre-test. The data were analysed and dependent‘t’ test was used with 0.05 levels as confidence.

TABLE I
Analysis of t-ratio for the pre and post tests of experimental and control group on Calf circumference
(Scores in centimeters)

Variables	Group	Standard Deviation		Sd Error	
		Pre	Post	Pre	Post
Calf circumference	Control Group	0.727	0.750	0.187	0.193
	Experimental Group	0.740	0.739	0.191	0.190

TABLE II

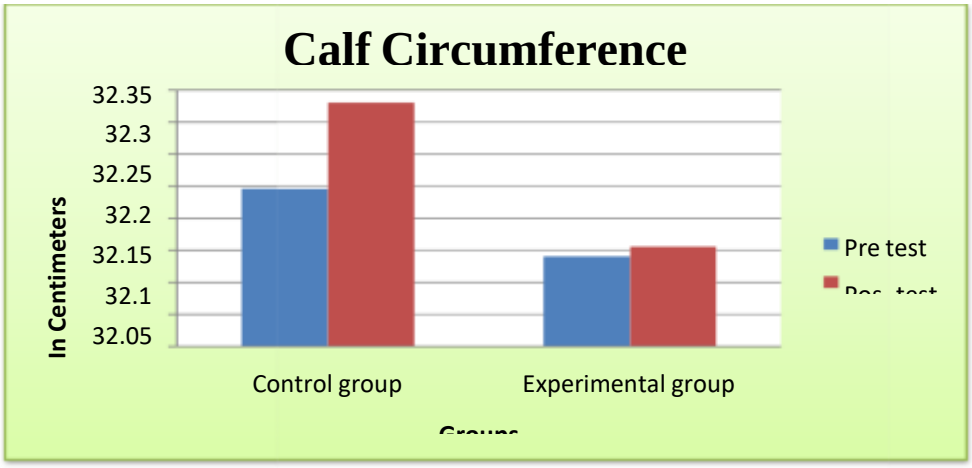
Variables	Group	Mean		Degree of freedom	't' ratio
		Pre	Post		
Calf circumference	Control Group	32.20	32.33	14	1.48
	Experimental Group	32.09	32.10	14	**7.99***

**Significance at .05 level of confidence.*

The Table-I and II shows that the mean values of pre-test and post-test of the control group on calf circumference were 32.20 and 32.33 respectively. The obtained 't' ratio was 1.48, since the obtained 't' ratio was less than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of the experimental group on calf circumference were 32.09 and 32.10 respectively. The obtained 't' ratio was 7.99* since the obtained 't' ratio was greater than the required table value of 2.14 for significance at level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in calf circumference. It may be concluded from the result of the study that experimental group improved in calf circumference due to six weeks of combined isometric stretching exercise and yoasana practices.

Figure-1

Bar Diagram Showing the Pre and Post Mean Values of Experimental and Control Group on Calf circumference



DISCUSSIONS ON FINDINGS

The result of the study indicates that the experimental group, namely combined isometric stretching exercise and yoasana improvement caused by combined isometric stretching exercise and yoasana compared to the control group.

CONCLUSION

We conclude the following based on the data we collected: routines while

1. Following the training period, there was a notable difference in calf circumference between the experimental and control groups.

Calf circumference showed a significant improvement. Nevertheless, after six weeks of combining yoasana with isometric stretching exercises, the experimental group showed more progress.

REFERENCE:-

The authors of the article are Parthasarathy, S., Alaguraja, K., and Selvakumar, K. (2020). Reduced stress levels in middle-aged males with the use of shambhavi mahamudra and pranayama. Volume 11, Issue 6, pages 795–798 of the Indian Journal of Public Health Research and Development.
2. Dhanaraj and Parthasarathy. Research on the impact of yoga postures and shambhavi mahamudra on blood pressure readings taken at the end of the day. Print version: 2019 in the Indian Journal of Applied Research, volume 9, issue 11, pages 45–46.
As stated by Binodh and Danaraj (2016). Bulgarian bag training's effect on some volleyball players' strength metrics and performance indicators. Journal of Multidisciplinary Research Review, International Edition, 1(19), pages 22–24.
4. In 2020, Dhanraj. Impact of a yoga and meditation programme on psychological well-being. The aegaeum journal, volume 8, issue 6, pages 850 to 854.
5. Bevinson Perinbaraj, S. Dhanraj, and A. Palanisamy (2012). Examining the impact of harness training on certain power metrics in collegiate male athletes. Pages 18–22 of the Journal of Physical Education and Sport, volume 7, issue 2.
6. The authors are Palanisamy and Dhanraj (2012). Impact of yoga on stress management among collegiate female football players. Pages 15–18 of the 7th edition of the Indian magazine for research in PE and sports sciences.
Seventh, Dhanraj, S. (2012). Article titled "The Impact of Ladder Training on Specific Motor Fitness Attributes in Handball Players" published in the International Journal of Scientific Research, includes pages 406-407.
Marinar Rai et al. (2020) 8. Yogic strength. Journal of Advanced Science and Technology: An International Journal, 29(3), pp. 6225-6229.
Note the work of Sumitra Das et al. (2020). The result of doing rowing and yoga. Pages 7079–7084 of the International Journal of Advanced Science and Technology, volume 29, issue 3.
In 2020, Alalaguraja and Yoga published a paper. Yoga and naturopathy together for hypertension patients: an effect on maximal oxygen consumption. Volume 11, issue 4, pages 131–134, of the Indian Journal of Public Health Research and Development.
In 2020, Alalaguraja and Yoga published a paper. Class I obese patients' body mass index as a result of yoga treatment. Public health research and development in India, volume 11, issue 5, pages 143–146.
12. Selvakumar, K., Alaguraja, K., Yoga, P., and James Rathinaraj, S. (2020). Effects on

practices group had significantly improved the selected dependent variable, namely calf circumference, when compared to the control group. It is a so found that the

low density lipoprotein (Ldl) in middle-aged women with a walking-yogic practice combination. Volume 11, issue 6, pages 362-365, of the Indian Journal of Public Health Research and Development.
Thirteen. Alagauraja and Yoga (2017). The effect of yoga poses on the range of motion in overweight students. Article cited as 2(7) of the International Journal of Yoga Physiotherapy and Physical Education, pages 70–71.
14. Alagauraja and Yoga (2018). Implications for college-aged men's dynamic strength from core stability training. Volume 3, Issue 2, Pages 436–437, International Journal of Yogic Human Movement and Sports Sciences.
In 2018, Yoga, Balamuralikrishnan, and Alaguraja published a paper. Physiological parameters affected by cyclic meditation. Journal of Advanced Education and Research International, Volume 4, Issue 1, Pages 17–18.
16. Alamogurja and Yoga (2019). A study on the effects of yoga on the resting heart rates of schoolchildren. Journal of Applied Research in India, volume 9, issue 7, pages 43–44.
Marinear Rai, Yoga, Alaguraja, Selvakumar, and Sumitra Das (2020). Yogic strength. Journal of Advanced Science and Technology: An International Journal, 29(3), pp. 6225-6229.
In 2020, Sumitra Das, Yoga, Alaguraja, Selvakumar, and Marinar Rai published a joint work. The result of doing rowing and yoga. Page numbers 7079–7084 of the International Journal of Advanced Science and Technology, volume 29, issue 3.
Alalaguraja and Yoga (2020) (number 19). Yoga and naturopathy together for hypertension patients: an effect on maximal oxygen consumption. Volume 11, issue 4, pages 131–134, of the Indian Journal of Public Health Research and Development.
In 2020, Alalaguraja and Yoga published a paper. Class I obese patients' body mass index as a result of yoga treatment. Public health research and development in India, volume 11, issue 5, pages 143–146.
The authors of the 2020 article are James Rathinaraj, S., Yoga, P., Alaguraja, K., and Selvakumar, K. Effects on low density lipoprotein (Ldl) in middle-aged women with a walking-yogic practice combination. Volume 11, issue 6, pages 362-365, of the Indian Journal of Public Health Research and Development.
22. In a study conducted by Parthasarathy, S., Alaguraja, K., and Selvakumar, K. in 2020. Reduced stress levels in middle-aged males with the use of shambhavi mahamudra and pranayama. Volume 11, Issue 6, pages 795–798 of the Indian Journal of Public Health Research and Development.
23. Krishnakumar, Selvakumar, Alaguraja, Yoga, and James Rathinaraj (2020). Effects on low density lipoprotein (LDL) in middle-aged women with a walking-yogic practice combination. Public health research and development in India, volume 11, issue 6, pages 1121–1124.

The authors of the cited work are Alagaraja, Yoga, Balamuralikrishnan, and Selvakumar (2019). How a yoga programme affects the resting heart rate of overweight schoolchildren: a research investigation. Volume 9, Issue 8, Pages 483–487, Journal of Computing and Information Science.
[25] Alalaguraja and Yoga (2019). Investigate the effects of pranayama on physiological parameters in a sample of rural schoolchildren. Volume 9, Issue 8, Pages 545–550, Journal of Computing and Information Science.
In 2019, Alagaraj, Yoga, James Rathinaraj, and Selvakumar published a study. Research on the effects of yoga on maximum oxygen absorption in patients with stress. Indian Journal of Applied Research, volume 9, issue 9, pages 38–39.
Alagulurja, K. (2019) on page 27. Examine the effects of meditation and yoga on psychological and social variables in athletes. Indian Journal of Applied Research, volume 9, issue 10, pages 73–74.
Malalaguraja and Yoga (2019) were cited in item 28. Research on the effects of a yoga programme on fat mass in males attending

rural schools. Page numbers 07–09 from the International Journal of Physical Education, Exercise, and Sports, volume 1, issue 2. In 2019, Alalaguraja and Yoga published a study. Effects of the yoga programme on BMI in overweight individuals. Publication: International Journal of Physical Education, Exercise, and Sports, Volume 1, Issue 2, Pages 4–06.

Thirty. Alalaguraja and Yoga (2019). Meditation and pranayama techniques for boosting self-assurance. Volume 1, Issue 2, pages 1–03, International Journal of Physical Education, Exercise, and Sports, 31.In 2019, Alaguraja and Yoga published. Stress reduction with mindfulness meditation for working guys. Volume 1, Issue 1, pages 09–11, of the International Journal of Physiology, Sports, and Physical Education (32).In 2019, Alaguraja and Yoga published. Cholesterol treatment in high school males using yogic techniques. Physiology, Exercise, and Physical Education: An International Journal, 1(1), pp. 09–11. 33.In 2019, Alaguraja and Yoga published. The influence of yoga and naturopathy on triglycerides in stress patients: a scientific research. Article published in the International Journal of Physiology, Exercise, and Physical Education, volume 1, issue 1, pages 09–11.In 2019, Alaguraja and Yoga published. Examine the impact of the yoga programme on trained handball players' low density lipoprotein levels. The citation is from the International Journal of Physiology, Exercise, and Physical Education, volume 1, issue 1, pages 09–11.In 2019, Alaguraja and Yoga published. An analysis of the cumulative impact of saq training and the yoga package on handball players' self-esteem. Page numbers 15–17 of the International Journal of Sports, Exercise, and Physical Education, volume 1, issue 1, page number 36.In 2019, Alaguraja and Yoga published. Systolic blood pressure in middle-aged women who are unemployed: the effects of a pranayama package. Volume 1, Issue 1, Pages 18–20, International Journal of Sports, Exercise, and Physical Education. In 2019, Alagauraja and Yoga published a study. Pranayama protocol for middle-aged women who are jobless and lacking self-confidence. Volume 1, Issue 1, Pages 18–20, International Journal of Sports, Exercise, and Physical Education. Alagauraja and Yoga (2017) were cited as number 38. The effect of yoga on students' maximum oxygen consumption (VO2 max), published in the International Journal of Innovative Knowledge Concepts, volume 5, issue 6, pages 18–20. Balasubramanian and Yogaraj (2009) were cited as number 39. Assessing the impact of resistance training and other forms of physical activity on biochemical markers in collegiate football players, Page 1–4 of the International Journal of Physical Education, volume 2, issues 1 and 2.

In 2009, Selvalakshmi and Yogaraj published a paper. The impact of several yoga postures and breathing techniques on weighted women's haemoglobin and glucose levels was studied in the Asian Journal of Physical Education and Computer Science in Sports, volume 1, issue 1, pages 262-264. Yograj, Ramaraj, and Elangovan (2010) were cited as number 41. College women's adrenal gland functioning and blood cholesterol levels as a result of practicing certain asanas, Asian Journal of Physical Education and Computer Science in Sports, 2(1), pp. 206-208. Yogaraj, Ramaraj, and Elangovan (2010) were cited as number 42. Physiological and Biochemical Changes in Female College Students After Engaging in Certain Yogic Exercises, Asian Journal of Physical Education and Computer Science in Sports, 3(1), pp. 27–29. Yogaraj and Elangovan (2011) were cited as number 43. An international journal of physical education, sports management and yogic sciences article titled "Effect of Varying Yogic Practice Packages on Selected Bio-Chemical Variables of College Men Students" (pp. 35–39) just appeared. 44.P. Yoga (2013). The impact of several yoga practice modules on platelet count in women with type II diabetes is detailed in an article

published in the Asian Journal of Physical Education and Computer Science in Sports (volume 9, issue 1), pages 47–49.
45.The impact of several yogic practice modules on white blood cell count in women with type II diabetes is discussed in an article published in the International Journal of Physical Education, Sports Management, and Yogic Sciences (2014), volume 4, issue 1, pages 33–36.
46.With Yoga, P. (2014). A study was published in the International Journal of Sports Technology, Management and Allied Sciences on the effects of several yoga modules on the red blood cell count in women with type II diabetes. The study spanned pages 70 to 74.
47. Yoga, P. (2014). Examining the Impact of Different Yoga Practice Bundles on White Blood Cell Count in Male College Students, International Journal of Health, Physical Education & Computer Science in Sports, 15(1), 46–49.
Next, we have Yoga (2015). In this article from the International Journal of Engineering Research and Sports Science, the authors examine the effects of different yoga practice packages on the cardiovascular endurance of male college students (pp. 33–34).
(2019) 49. Yoga and Ranjith. Sectional breathing and nadi suddhi pranayama's effect on male college students' white blood cell count was published in the International Journal of Health, Physical Education, and Computer Science in Sports, volume 17, issue 2, and ran from pages 16 to 18.