



## **Combined effect of yoga ball training and psychological intervention training on stress among college athletes**

**N Ashok Babu<sup>1</sup>, Dr. PV Shelvam<sup>2</sup>**

<sup>1</sup> Research Scholar, Dravidian University, Kuppam, Andhra Pradesh, India

<sup>2</sup> Professor, Department of Physical Education, Annamalai University, Tamil Nadu, India

### **Abstract**

The purpose of the study was to find out the combined effect of yoga ball training and psychological intervention training on stress among college athletes. To achieve this purpose of the study, sixty college athletes were selected as subjects who were from the Govt. First Grade College, Malur, Karnataka. The selected subjects were aged between 18 to 22 years. They were divided into four equal groups of fifteen each, Group I underwent yoga ball training, Group II underwent psychological intervention training, Group III underwent combined training and Group IV acted as control that did not participate in any special training apart from their regular curricular activities. The subjects were tested on selected criterion variable such as stress prior to and immediately after the training period. The selected criterion variable such as stress was determined through Perceived Stress Scale questionnaire. The analysis of covariance (ANCOVA) was used to find out the significant differences if any, between the experimental group and control group on selected criterion variable. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as an appropriate. The result of the present study has revealed that there was a significant difference among the experimental and control group on stress.

**Keywords:** yoga ball training, psychological intervention training, combined training, stress, college athletes

### **1. Introduction**

Yoga balls are used in Yoga, Pilates and fusion exercise programs to strengthen and firm abs, back and buttocks. These yoga balls are made from durable vinyl, they are designed to support up to 600lbs of pressure. It is most often used in physical therapy, athletic training and exercise. It can also be used for weight training. The ball, while often referred to as a swiss ball, is also known by a number of different names, including balance ball, birth ball, body ball, fitness ball, gym ball, gymnastic ball, physio ball, pilates ball, naval mine, Pezzi ball, stability ball, Swedish ball, therapy ball, or yoga ball. Yoga balls are versatile and fun exercise tools that, despite their name, can be applied to so much more than the practice of yoga. You'll find them a regular fixture in fitness classes, rehabilitation centers and gyms. They're just as effective for core training in pilates, and will leave you with a stronger and firmer abdomen, back and butt. We also carry yoga balls made of a thicker material that resists bursting if they are punctured. These balls are ideal for studios that have heavy usage of their equipment or certain fitness classes that incorporate a lot of active movement and weights. Like the traditional versions, they also come in four different sizes to suit many heights. Thera-Band Exercise Balls can be used for exercise, but are specially designed for rehabilitation. They help strengthen the muscles that support good posture, which in turn eases back pain. We carry these balls in sizes as small as 45 centimeters and as big as 85 centimeters. Give yourself a challenging workout with the Dome Yoga Ball, a deceptively simple-looking piece of equipment that will leave your abs sore in a good way! Pick the version with straps for an additional upper-body workout. As an introduction to exercising on the ball, it is often

recommended that one simply sit on one for 30 minutes a day and bounce lightly, continually finding and maintaining balance on the ball. Sports training are done for improving sports performance. The sports performance, as any other type of human performance, is not the product of total personality of sports person. The personality of person has several dimensions e.g. physical, physiological, social and psychic. In order to improve sports performance, the social and psychic capacities of the sports of the sport person also have to be improved in addition to the physical and psychological ones. In other words, the total personality of a sportsman has to be improved in order to enhance his performance. Sports training, therefore directly and indirectly aim at improving the personality of the sportsman. No wonder, therefore sports training is an educational process. Researchers found that several methods of psychological preparations and regulations are programmed by coaches, sports administrators, physical educationists etc. these psycho regulative programme include yogasanas, autogenic training, relaxation techniques, mental health trainings, etc.

Psychology (from Greek word, "breath, life, soul", and logia) is an academic and applied discipline involving the scientific study of mental functions and behavior. Psychologists study such phenomena as perception, cognition, emotion, personality, behavior, and interpersonal relationships. Psychology also refers to the application of such knowledge to various spheres of human activity, including issues related to everyday life (e.g. family, education and employment) and the treatment of mental health problems. Psychologists attempt to understand the role of these functions in individual and social behavior, while also exploring the underlying physiological and

neurological processes. Psychology includes many sub-fields of study and applications concerned with such areas as human development, sports, health, industry, media and law. In this modern era of competition the psychological preparation of a team is as much important as teaching the different skills of a game on the scientific lines. The teams are prepared not only to play the games, but to win the games. And for winning the game, it is not only the proficiency in the skills which bring victory but more important is the spirit of the players with which they play and perform their best in the competition. Within a short span of time, sports psychology has taken giant strides. Not it does claim to be a full-fledged discipline in the sense that no training of sportsman is considered complete without adequate emphasis on “psychological conditioning” which plays an extremely important role in competitive sports. Competitive sports reflect cultural aspirations of a people and they have now become an inextricable part of all civilizations. Recreative sports are mainly concerned with man’s well being where as competitive sports aim to measure and enhance human “potentiality and performance”. All other things being equal in two opponents, in sports, the one with better “psychological training or mental conditioning will always have an upper edge over the other”. Psychology of sports in an application of psychology in the field of sports and games. In other words, it is the psychological approach to sports and games, in order to make them efficient, fruitful and interesting. Psychology of sports is a branch of Psychology that examines various aspects of activities and physical culture. It also studies the psychological aspects of athlete’s personality. The psychology can help the sports excellence by the sportsman. Role of psychology in selection, training materials and rehabilitation would definitely help in achieving sports excellence. The emphasis has been laid on pointing out that psychology and sports coverage at the point and excellence in sports can be optimally obtained by developing appropriate strategies. This was an adaptation from Jacobson’s progressive relaxation and from Bernstein and Borkovec’s methods, yet we’re going to incorporate Dr. Carnwath and Dr. Miller’s breathing and visualization techniques. We deem necessary to undergo a supervised training at a doctor’s office, to do this relaxation techniques accurately. Nonetheless, we’ve modified and adjusted it to fit it into this do-it-at-home version.

**2. Materials and Methods**

In the present study all the students studying in Govt. First Grade College, Malur, Karnataka. were considered as population for the study. A representative sample of 60 college students in the age of 18-22 years was chosen as sample for the study. The selected participants were divided into four groups. Group I underwent yoga ball training, Group II underwent psychological intervention training, Group III underwent combined training and Group IV acted as control that did not participate in any special training apart from their regular curricular activities. The experimental groups underwent twelve weeks of training in their particular workout. For this study dependent variable is stress. Pre-test data were collected two days before the training program and post-test data were collected two days after the training program. The collected data treated with ANCOVA. Level of confidence was fixed at 0.05. If obtained ‘F’ ratio significant scheffe’s post hoc test were used [6].

**2.1 Assessment of stress**

**Purpose**

To find out stress of college athletes, standardized perceived stress scale (PSS) was used. The stress consists of 10 statements, each statement was given five responses.

**Procedure**

The statements were given clearly in English. The clear instruction was given to all subjects how to fill up the questionnaire. They were asked to read each statement carefully and respond to it by marking a tick (√) mark any one of the five responses given. The investigator scored according to the scoring method of respective scale. The total score was considered for statistical treatment.

**Scoring**

Each type of stress has its own scale of 10 different questions that are scored. Scores range from 0 to 40. Low scores indicate a mild form of stress whereas median scores indicate a moderate form of stress and high scores indicate a severe form of stress. (0=Never, 1=Almost Never, 2=Sometimes, 3=Fairly Often and 4=Very Often). PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3=1 & 4 = 0) to the four positively stated items (items 4, 5, 7 & 8) and then summing across all scale items. A short 4 item scale can be made from questions 2, 4, 5 & 10 of the PSS 10 item scale.

**3. Results and Discussion**

The statistical analyses of stress due to yoga ball training, psychological intervention training, combined training and control group have been presented in Table I.

**Table 1:** Computation of Analysis of Covariation on Stress

Test	e.g. i	e.g. ii	e.g. iii	c. g.	f
Pre test	14.38	14.44	14.42	14.36	1.12
post test	12.86	12.42	11.14	14.68	4.48*
adjusted	12.82	12.46	11.18	14.72	25.43*

The table I show that the pre-test values on stress for yogaball training, psychological intervention training, combined training and control groups were 14.38, 14.44, 14.42 and 14.36 respectively. The obtained ‘F’ ratio value of 1.12 for pre-test score of yogaball training, psychological intervention training, combined training and control groups on stress was less than the required table value of 2.70 for significance with df 3 and 56 at 0.05 level. The post-test means of stress for yogaball training, psychological intervention training, combined training and control groups were 12.86, 12.42, 11.14 and 14.68 respectively. The obtained ‘F’ ratio value of 4.48 for post-test scores of yogaball training, psychological intervention training, combined training and control groups was more than the required table value of 2.70 for significance with df 3 and 56 at 0.05 level. The adjusted post-test means of stress for yogaball training, psychological intervention training, combined training and control groups were 12.82, 12.46, 11.18 and 14.72 respectively. The obtained ‘F’ ratio value of 25.43 for adjusted post-test scores of yogaball training, psychological intervention training, combined training and control groups were higher than the required table value of 2.72 for significance with df 3 and 55 at 0.05 level. The results of the study indicate that there is a significant difference between stress for yogaball training, psychological intervention training, combined training after

respective training for a period of 12 weeks, Scheffe’s post-hoc test was applied and the results are presented in Table – II.

**Table 2:** Scheffe’s Test for The Adjusted Post-Test Paired Means of Stress

Adjusted Post-Test Means				Mean Diff.	Class Interval
YT	PIT	CT	CG		
12.82	12.46			0.36	1.82
12.82		11.18		1.64	
12.82			14.72	1.90*	
	12.46	11.18		1.28	
	12.46		14.72	2.26*	
		11.18	14.72	3.54*	

The results presented in table II shows that the mean difference between yogaball training group and control group was 1.90, psychological intervention training group and control group was 2.26 and combined training group and control group was 3.54, which were higher than the required confidence interval value of 1.82. However, all the experimental groups have significant difference when compare to the control group and also there was no significant difference between the experimental groups.

The results of analysis of covariance on stress showed that there was a significant difference existed between control group and yogaball training, psychological intervention training and combined training groups. Thus, twelve weeks of experimental treatment influences in stress of the college students compared to control group, and it was found there wouldn’t any significant difference between the experimental groups.

**4. Discussion on Findings of the Study**

The results of analysis of covariance on stress showed that there was a significant difference existed between control group and yogaball training, psychological intervention training and combined training groups. Thus, twelve weeks of experimental treatment influence in stress of the college athletes compared to control group. However there was no significant difference between experimental groups on stress. The above findings are in consonance with the study conducted by Toole and others (2018), Xiaoying Shen and others (2018), Schwab Reese, Pittsinger and Jingzhen Yang (2012)<sup>[6]</sup>, Karnes, Meyer, Berger and Brondin (2015)<sup>[7]</sup> and Brown and Fletcher (2017)<sup>[8]</sup>.

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