



## **Effectiveness of psychological relaxation technique on the cognitive state anxiety of athlete**

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### **Abstract**

The purpose of the present study was to find out the effectiveness Psychological Relaxation Technique on the cognitive state Anxiety of Athlete. The study was conducted on two hundred (N= 200) university level players of individual sports. These 200 athletes were divided into five groups, 40 in each group of Galvanic Skin Response, Electromyography, Autogenic Training and PMR and Yog Nidra respectively. All are of 18 to 28 years of age to find out the effectiveness of Psychological Relaxation Technique on cognitive state Anxiety level of Athletes. Firstly, all subjects were given an informed consent letter to sign to be a subject for the present study with their own will. The researcher was ask the player to fill the The Competitive State Anxiety Inventory-2 (CSAI-2) by Rainer Marten questionnaire and after conducting the test the investigator collected pre score of cognitive state anxiety. These five different groups were exposed to selected psychological relaxation techniques. Then to observe the effect of these relaxation techniques ANCOVA is applied followed by pair wise comparison to see the least significant difference. The level of signifance choose in to test the hypotheses was 0.05,  $P < 0.05$ . Results GSR and Electromyography shown the significant difference in comparison to other relaxation techniques.

**Keywords:** psychological relaxation technique, athlete, electromyography

### **Introduction**

Competitive anxiety ought to be seen in two measurements; characteristic and state anxiety. State anxiety might be conceptualized as a temporary passionate state or state of human creature that shifts in force and vacillates extra minutes. This condition is described by subjective, deliberately seen sentiment strain, misgiving and actuation of the autonomic sensory systems. It is a prompt or "right now" passionate reaction that can change from minute or circumstance to the following. Characteristic anxiety is instilled in a man's identity and the person with this issue tends to see the world as a hazardous and undermining place. Most games clinicians and tip top competitors, nonetheless, trust that figuring out how to hang free enables competitors to make a goliath stride towards ideal delight and execution. As our anxiety expands so does our execution up to point. We should be restless quite recently enough to wind up noticeably energized and propelled about our execution. A lot of anxiety, be that as it may, meddles with our capacity to concentrate legitimately on the job needing to be done. Finding the ideal anxiety point is special to every person and relies upon the games in which one is included (e.g.: weight lifting requests higher anxiety levels for ideal execution than bows and arrows), this shows the competitors need the capacity to manage their anxiety to their own ideal point. There are a few courses in which relaxation techniques preparing can profit a competitor's execution. Right off the bat, relaxation techniques strategy helps with creating increased affectability to your body. A few competitors experience issues in recognizing what activities are under deliberate control. Relaxation techniques preparing enables them to wind up

plainly more mindful of their body and in addition recover a feeling of control over essential physiological acts, for example, relaxing. Also, a relaxation technique takes into account the decrease of anxiety. When you are very restless, relaxation techniques can helps you in accomplishing your ideal level of anxiety. Solid strain goes with anxiety or over excitement. It is difficult to be strained and loose in the meantime. Henceforth, relaxation techniques serves to lessens anxiety level by decreasing the strong strain; you can likewise save vitality that is preferred spent in one's games over on apprehension. Thirdly, relaxation techniques can encourage recuperation from weariness and advance the beginning of rest for the individuals who encounter inconvenience dozing preceding and following rivalry. It likewise encourages recuperation from damage by decreasing torment related with strain. Fourthly, a relaxation technique helps with clearing the psyche and aiding fixation for physical or mental practice. That is the reason most techniques for trance, contemplation, or symbolism are gone before by arrangement of ventures to actuate a condition of relaxation techniques. Clearing the brain augments the adequacy of these techniques. A relaxation technique is one of the crucial human needs in its own particular manner as essential as rest. Everybody needs visit times of rest and preoccupation so he can come back to his day by day assignments revived. The positive utilization of the time accessible for relaxation techniques nonetheless is a workmanship not every person has aced. Genuine relaxation techniques include both the brain and the body. It can't be accomplished essentially by being idle or killing time in some useless movement. Rather, relaxation techniques ought to give a charming change from normal action.

**Selection of subjects**

Two hundred university level players of individual sports (judo, track and field, wrestling, boxing and archery) were recruited as subjects from the different colleges of Punjabi University. All subjects were given an informed consent letter to sign to be a subject for the present study with their own will. The researcher asked the player to fill the sports competition anxiety test (SCAT) questionnaire to observe of level anxiety. After that the researcher had randomly divided the subject into five different experimental groups. These five different groups will be exposing to selected psychological relaxation techniques i.e Galvanic Skin Response, Electromyography, Autogenic Training and PMR and Yog Nidra respectively.

**Selection of variables**

Keeping the specific purpose of the study in mind, the following variables were selected.

**Independent Variables**

- Galvanic skin responses (GSR) Biofeedback
- Electromyography biofeedback
- Autogenic training
- Progressive muscle relaxation

- Yog Nidra

**Dependent Variable**

- Cognitive State Anxiety

**Collection of data**

The data were collected two times in the interval of 6 weeks of selected relaxation techniques and before the competition. Observation for the test was collected prior to competition and treatment. After six weeks experimental treatment observation were collected at the end of treatment and before competition. Important instruction was given to the subject before administration of test.

**Statistical Procedure**

In order to find out the significant mean difference of experimental group Analysis of co-variance (ANCOVA) will be used and follow up test will be conducted to evaluate pair wise difference among the adjusted means for different training groups.

**Analysis and Interpretation of Results**

This section includes the analysis of Cognitive State Anxiety while applying selected Psychological Relaxation Techniques.

**Table 1:** Mean Value and Adjusted Mean Score of Cognitive State Anxiety while applying selected Psychological Relaxation Techniques.

Techniques	N	Pre Mean ± SD	Post Mean ± SD	Adjusted mean
GSR	40	30.20± 1.78	20.20±1.13	20.19
EMG	40	33.22± 1.90	21.48±2.16	21.47
AT	40	33.30± 1.57	21.93±2.14	21.92
PMR	40	33.32± 1.43	22.80±1.97	22.80
YN	40	33.07± 1.65	22.78±1.99	22.77

Table 1 show the pre-mean± SD, post ± SD and adjusted mean scores after eliminating the effect of covariate of selected relaxation techniques groups. In Galvanic skin responses group the pre mean, post mean along with standard deviation and adjusted mean of cognitive state anxiety was 30.20±1.78, 20.20±1.1 and 20.19 respectively. Whereas in electromyography group the pre-mean, post mean along with standard deviation and adjusted mean of cognitive state anxiety was 33.22± 1.90, 21.48±2.16 and 21.47 respectively. Further in autogenic training group the pre-mean, post mean

along with standard deviation and adjusted mean of cognitive state anxiety was 33.30± 1.57, 21.93±2.14 and 21.92 respectively. Whereas in progressive muscle relaxation group the pre mean, post mean along with standard deviation and adjusted mean of cognitive state anxiety was 33.32± 1.43, 22.80±1.97 and 22.80 respectively. Similarly in yog nidra group the pre mean, post mean along with standard deviation and adjusted mean of cognitive state anxiety was 33.07± 1.65, 22.78±1.99 and 22.77 respectively.

**Table 2:** ANCOVA table for the Scores on Cognitive State Anxiety while applying selected Psychological Relaxation Techniques

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Treatment	185.60	4	46.401	12.539	.000*
Error	717.89	194	3.701		
Total	96257.00	200			

\*Significant at .05 Level

Table 2 reveal that the result of ANCOVA shows significant effect of selected psychological relaxation techniques on

cognitive state anxiety as calculated  $F_{.05} (4,194) = 12.539$  greater than tabulated  $F\text{-value} = 2.42$  and  $p < 0.05$ .

**Table 3:** Pairwise Comparisons of selected Psychological Relaxation Techniques on Cognitive State Anxiety

(I) Name of treatment	(J) Name of treatment	Mean Difference (I-J)	Std. Error	Sig. <sup>b</sup>	95% Confidence Interval for Difference <sup>b</sup>	
					Lower Bound	Upper Bound
GSR	EMG	-1.274*	.430	.003	-2.123	-.426
	AT	-1.730*	.430	.000	-2.579	-.881
	PMR	-2.607*	.430	.000	-3.456	-1.758
	YN	-2.579*	.430	.000	-3.428	-1.731
EMG	AT	-.456	.430	.291	-1.305	.393
	PMR	-1.332*	.431	.002	-2.182	-.483
	YN	-1.305*	.430	.003	-2.154	-.456
AT	PMR	-.877*	.430	.043	-1.725	-.028
PMR	YN	-.849*	.430	.050	-1.698	-.001
	YN	.027	.430	.949	-.821	.876

\*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

The table 3 indicates significant difference of cognitive state anxiety between the paired means i:e Galvanic skin response and Electromyography, Autogenic training, Progressive muscle relaxation and Yog Nidra . Statistically Significant difference occurred between galvanic response and electromyography is (MD= -1.274 and  $p < 0.05$ ), Autogenic training (MD= -1.730 and  $p < 0.05$ ) Progressive muscle relaxation (MD= -2.607 and  $p < 0.05$ ), Yog Nidra (MD= -2.579 and  $p < 0.05$ ). Similarly, mean difference of cognitive state anxiety between Electromyography and Autogenic training is significant i.e (MD= -.456 and  $p < 0.05$ ), Electromyography and Progressive muscle relaxation and Yog Nidra were significant with (MD= -1.332,-1.305 and  $p < 0.05$ ) respectively. The mean difference of cognitive state anxiety between Autogenic training and Progressive muscle relaxation, Yog Nidra were significant with the value obtained (MD= -.877,-.849 and  $p < 0.05$ ) respectively. Further, mean difference of cognitive state anxiety between Progressive muscle relaxation and Yog Nidra obtained (MD= .027 and  $p < 0.05$ ) which shows that there is low significant difference.

### Discussion of findings

The study was conducted to find out the effects of relaxation techniques on the Cognitive state anxiety of athletes and to find out the best and suitable technique to reduce Cognitive State anxiety.

In the observation of results various psychological relaxation training exposed to the different five groups the outcome was as the scale divides anxiety into three components: cognitive anxiety, somatic anxiety, and a related component-self-confidence. Self-confidence tends to be the opposite of cognitive anxiety and is another important factor in managing stress. when effectiveness of galvanic skin response, electromyography, autogenic training, progressive muscles relaxation and yog nidra on the cognitive state anxiety was observed with the application of Analysis of Co-variance (ANCOVA), it showed that there is significant effect was found in psychological relaxation techniques on cognitive state anxiety as calculated  $F_{.05}(4,194) = 12.539$  greater than tabulated  $F$ -value =2.42 and  $p < 0.05$ .

But in pair wise comparison it was observed that statistically Significant difference occurred between galvanic response and electromyography is (MD= -1.274 and  $p < 0.05$ ), Autogenic

training (MD= -1.730 and  $p < 0.05$ ) Progressive muscle relaxation (MD= -2.607 and  $p < 0.05$ ), Yog Nidra (MD= -2.579 and  $p < 0.05$ ). Similarly, mean difference of cognitive state anxiety between Electromyography and Autogenic training is significant i.e (MD= -.456 and  $p < 0.05$ ), Electromyography and Progressive muscle relaxation and Yog Nidra were significant with (MD= -1.332,-1.305 and  $p < 0.05$ ) respectively. The mean difference of cognitive state anxiety between Autogenic training and Progressive muscle relaxation, Yog Nidra were significant with the value obtained (MD= -.877,-.849 and  $p < 0.05$ ) respectively. Further, mean difference of cognitive state anxiety between Progressive muscle relaxation and Yog Nidra obtained (MD= .027 and  $p < 0.05$ ) which shows that there is low significant difference. Hence, there is significant difference with all the trainings but we can conclude with this that galvanic skin response is the effective relaxation technique to regulate cognitive state anxiety.

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