

## Management of Stress, Anxiety and Frustration among Athletes through Muscular Relaxation Technique

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### ABSTRACT

The main aim of present investigation was to find out effectiveness of muscular relaxation technique on stress, anxiety and frustration level of athletes (18-30, Years). The study took place over a period of three months. The investigator had worked with 60 athletes. They were placed into two groups randomly. The first group was experimental group in which, systematic muscular relaxation technique with the help of professionals was applied. Two sessions per week for twenty minutes were given by the expert of muscular relaxation techniques for three months. Before application of muscular relaxation technique, pre assessment was conducted on both experimental and control group. Findings concluded that muscular relaxation technique has greater significant influence in management of stress, anxiety and frustration among athletes. Practicing relaxation techniques can reduce the level of stress, anxiety and frustration among athletes, their lower intensity of stress, anxiety and aggression contribute them to have control over their behaviour.

**Keywords:** *Stress, Anxiety, Frustration, Muscular Relaxation Technique, Athletes*

Generally, athletes got over anxious and stressed and even over-motivated, before their game and this can have a debilitating affect on their performance during the game (Hillmann, Apparies, Janelle and Hatfield, 2000). The use of Progressive Muscular Relaxation (Muscular Relaxation Technique) and concentrated breathing techniques can help overcome these negative pre-match effects by decreasing arousal to a level that is more suitable for the match situation, thus ensuring that performance is not adversely affected.

Muscular relaxation technique has been shown to have hugely significant long-term effects in sport, particularly with helping to reduce general anxiety and stress, while also helping to increase concentration. A study by Janet Ortiz showed that this technique led to improved putting performance in female golfers, while many others sports have shown tremendous

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improvements following the use of muscular relaxation technique and other breathing techniques.

Practicing this technique, athletes can have a better understanding of their breathing and they can then implement shorter, concentrated breathing exercises within a match-day context. William & Harris (2001) discovered huge benefits in concentrated breathing in athletes and while it may not be possible to implement a breathing exercise in the middle of a football match for example, there are many scenarios in which the ability to relax through deep breathing can be profound. Breathing techniques are arguably most relevant in sports involving a 'closed skill', where there are fewer 'outside distractions' during a match and there is the time available to take a moment to relax. Even in team sports, there will be times when deep breathing techniques can give an athlete a vital few seconds to ensure they are in the right state of mind to execute a skill effectively.

### REVIEW OF RELATED LITERATURE

*Pelka, M. et al. (2016)* conducted a systematic application of individualized relaxation techniques on sports science students (age  $25.22 \pm 1.08$  years; sports participation  $8.08 \pm 3.92$  h/week). The students were randomly assigned to series of progressive muscle relaxation, systematic breathing, power nap, yoga, and a control condition. Once a week, over the course of five weeks, their repeated sprint ability was tested. Tests (6 sprints of 4 s each with 20 s breaks between them) were executed on a non-motorized treadmill twice during that day intermitted by 25 min breaks. Results revealed significant interaction effects between the relaxation conditions and systematic breathing led to better performances, and therefore, seems to be a suited relaxation method during high-intensity training.

*Vincent A. P. et al. (2012)* revealed there are positive correlation between imagery and sports performance, meditation and sports performance, progressive muscle relaxation and sports performance, breathing techniques and sports performance. Practicing relaxation techniques can reduce the number of athletes taking drugs to reduce anxiety and enhance performance.

*Faasse, K. and Petrie, K.J. (2015)* found that stress has been consistently associated with negative health outcomes, including increased rates of heart disease, slower wound healing, and compromised immune function. Interventions designed to improve peoples' ability to cope with stress can improve health outcomes. Such interventions include relaxation training, emotional expression, benefit finding, and cognitive-behavioral stress management and mindfulness-based stress reduction programs. Coping interventions have the potential to improve health outcomes for patients undergoing a stressful illness experience.

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Another study was conducted by *Dolbier, C.L. and Rush, T.E. (2012)* to examine the efficacy of abbreviated progressive muscle relaxation to enhance physiological and psychological functioning among high-stress college students. Participants were undergraduates, 19 years old on average, predominantly female and White, with high Perceived Stress Scale scores. After random assignment, the experimental group demonstrated significantly greater increases in mental and physical relaxation, and normalized high-frequency and decreases in low- to high-frequency HRV ratio. Small effect sizes were observed for anxiety, normalized low-frequency HRV, and cortisol. Analyses of the reliability and clinical significance of these changes indicate trends in the expected direction. Findings of this research indicate an APMR intervention can have significant short-term effects, both reducing detrimental and enhancing beneficial functioning in high-stress college students.

### METHODOLOGY

#### *Statement of the Problem*

The present investigation attempts to deal with “Management of Stress, Anxiety and Frustration among Athletes through Muscular Relaxation Technique”.

#### *Significance of the Problem*

Mood regulation and relaxation are important for athletes, it has been postulated that certain mood patterns are advantageous for athletes’ performance. Successful performance is associated with above average vigor scores and below average negative mood scores. The technique involves tightening and relaxing specific muscle groups so that the athlete identifies the sensations of muscle tension and muscle relaxation in that body part. This results in a reduction in muscle tension, stress, anxiety as well as level of frustration. When this technique is used regularly in training it can lead to significant improvement in training and playing skills and abilities of athletes.

#### *Conceptual Clarifications*

- **Stress:** A feeling of strain and pressure. It may lead to bodily harm. Stress can increase the risk of strokes, heart attacks, ulcers, dwarfism, and mental illnesses such as depression.
- **Anxiety:** Anxiety is an emotional state, represented by a feeling of dread, apprehension or fear. In humans, this can be defined by description using language; in animals, it must be inferred from behavioral observations.
- **Frustration:** It is a common emotional response/reaction to opposition. Related to anger and disappointment, it arises from the perceived resistance to the fulfillment of individual will.
- **Muscular Relaxation Technique:** Progressive Muscle Relaxation deals with relaxing muscles. This exercise helps to lower the level of tension and stress levels, and helps to

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relax when feeling anxious. It also helps to reduce physical problems such as stomachaches and headaches, as well as improves sleep.

### *Objectives*

1. To examine and evaluate effectiveness of muscular relaxation technique among athletes.
2. To examine and evaluate effectiveness of muscular relaxation technique among athletes with reference to stress, anxiety and frustration.
3. Make recommendations for the focus and development of future research among young athletes.

### *Hypotheses*

1. Application of Muscular Relaxation Technique will reduce level of stress among athletes in experimental group ( $H_a1$ ).
2. Application of Muscular Relaxation Technique will reduce level of anxiety among athletes in experimental group ( $H_a2$ ).
3. Application of Muscular Relaxation Technique will reduce level of frustration among athletes in experimental group ( $H_a3$ ).
4. There will be no significant mean difference between pre and post assessment scores of control group with reference to level of stress, anxiety and frustration ( $H_01$ ).

### *Research Design*

Present research is a field experimental study in which pre and post experimental design was used. Further, divided into experimental and control group purposively. In the experimental group, level of stress, anxiety and frustration of athletes were assessed prior to application of muscular relaxation technique. In the same way, level of stress, anxiety and frustration of athletes were measured after the application of muscular relaxation technique whereas in control group same traits of athletes were measured without application of muscular relaxation techniques. Difference between these two relaxation sessions revealed the effect of muscular relaxation techniques on athletes. Muscular relaxation technique was used as an independent variable whereas change in level of stress, anxiety and frustration were dependent variable.

### *Experimental Group*

Pre Assessment	Application of Muscular Relaxation Technique	Post Assessment
<ul style="list-style-type: none"><li>• Level of Stress</li><li>• Level of Anxiety</li><li>• Level of Frustration</li></ul>	Two Sessions per week of 20 minutes for first 3 months	<ul style="list-style-type: none"><li>• Level of Anxiety</li><li>• Level of Stress</li><li>• Level of Frustration</li></ul>

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***Control Group***

Pre Assessment		Post Assessment
<ul style="list-style-type: none"> <li>• Level of Stress</li> <li>• Level of Anxiety</li> <li>• Level of Frustration</li> </ul>	Muscular relaxation technique was not applied	<ul style="list-style-type: none"> <li>• Level of Anxiety</li> <li>• Level of Stress</li> <li>• Level of Frustration</li> </ul>

***Control***

Variables related to Subject, Sequence as well as Situation was controlled up to its maximum level through selection process, homogeneous sample in respect to their age, socio-economic status and educational standard were selected. All the tests were administered in a particular sequence.

***Sample***

For the present research work, researcher has selected a sample of 60 athletes, age group between 18 to 30 years, randomly consisting of both males and females from Jodhpur district. Total sample was divided into two groups i.e. experimental (30) and control (30). Further, both experimental and control group were assigned equal number of male and female athletes.

***Tools***

**1. Personal Stress Source Inventory by Singh, A.K., Singh A.K. and Singh A. (2004)**

Perceived personal stress was measured through Manual for Singh Personal Stress Source Inventory (SPSSI). A total of 35 statements were used to measure the perceived personal stress. These statements were measured on a 3-point scale (seldom, sometimes, and frequently). Higher the score, the higher is the magnitude of personal stress. Similarly, lower the score, the lower is the magnitude of personal stress. The maximum score on PSSSI is 105.

**2. Sinha’s Comprehensive Anxiety Test Scale by Sinha, A.K.P. and Sinha, L.N.K. (2007):**

Sinha’s Comprehensive Anxiety Test (SCAT) is used for determining comprehensive Anxiety. Total 90 items which fulfilled the criterion constituted the test in its final form. The test can be scored accurately by hand and no scoring key or stencil is provided. For any response indicated as ‘Yes’, the testee should be awarded the score of one, and zero for ‘No’. The sum of the entire positive or yes responses would be the total anxiety score of the individual.

**3. Frustration Scale by Chauhan and Tiwari (1972)**

This test consists of 40 items out of which each four modes that are Regression, Fixation, Resignation and Agression of frustration has 10 items each. Each item having six possible response choice with 0 (Zero) representing absence of the corresponding mode of frustration and the intensity to be indicated from 1- very less, 2-less, 3- ordinary, 4-much

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and 5- very much. The higher scores indicated higher frustration potential, employed to identify the effects of frustration upon the quality of the person's behaviour as a whole.

### DATA COLLECTION PROCEDURE

The study took place over a period of three months. The investigator had worked with 60 athletes. They were placed into two groups randomly. The first group was experimental group in which, systematic muscular relaxation technique with the help of professionals was applied. Two sessions per week for twenty minutes were given by the expert of muscular relaxation techniques for three months. Before application of muscular relaxation technique, pre assessment was conducted on both experimental and control group.

In the second group, which was control group, muscular relaxation technique was not applied. Other activities of the athletes were same as their daily routine. After the completion of three months' schedule, athletes of both the groups i.e. experimental as well as control group were administered for post assessment process through the tools used for pre assessment process.

### Scoring

Scoring was made as per the respective manuals used for assessment.

### Statistical Analysis

In the present investigation, to find out the significant difference between pre and post assessment of athletes, Mean, SD and Paired sample 't' test were calculated between scores of pre & post test sessions.

### RESULT AND DISCUSSION

*Table 1:- Showing Mean, SD & 't' values between pre & post test scores of athletes for experimental group on various parameters*

Parameters	Sessions	Mean	N	S.D.	't'	Sig. Level
Stress	Pre-test	71.56	30	13.14	4.47	p<.01
	Post-test	57.50	30	11.50		
Anxiety	Pre-test	68.60	30	8.91	6.84	p<.01
	Post-test	51.63	30	11.22		
Regression	Pre-test	39.60	30	6.88	1.80	NS
	Post-test	37.96	30	7.57		
Fixation	Pre-test	38.66	30	5.41	4.05	p<.01
	Post-test	34.63	30	5.25		
Resignation	Pre-test	35.96	30	6.87	4.97	p<.01
	Post-test	31.26	30	5.33		
Aggression	Pre-test	44.83	30	4.74	5.83	p<.01
	Post-test	37.96	30	5.26		

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It may be inferred from table 1.1 that scores of both the session i.e. pre and post test have significant difference on stress level of athletes. Calculated 't' value is to be found significant ( $t=4.47, p<.01$ ). Mean score of pre test and post test are 71.56 (SD=13.14) and 57.50 (SD=11.50) respectively. On the basis of significant mean difference it can be said that Muscular relaxation technique play significant role in reduction of stress level of athletes. Thus Ha1 (*Application of Muscular Relaxation Technique will reduce level of stress among athletes in experimental group*) is maintained. It means they become more capable in managing stress after getting Muscular relaxation sessions.

It is evident from Table 1.2 that significant difference is to be found between pre and post test sessions of athletes on anxiety level in experimental group. Mean score of pretest and post test are 68.60 (SD=8.91) and 51.63 (SD=11.22) respectively. 't' ratio is reported significant ( $t=6.84, p<.01$ ). On the basis of this significant difference conclusively one can say that presentation of scheduled muscular relaxation technique have significant impact on anxiety level of athletes. Thus Ha2 (*Application of Muscular Relaxation Technique will reduce level of anxiety among athletes in experimental group*) is sustained.

A perusal of table 1.3 highlighted that the two sessions are under study i.e. scores of pretest session and post test session do not differ significantly on frustration dimension regression. 't' value and mean scores for regression, in which mean difference is to be found insignificant ( $t=1.80, p>.05$ ). Athletes scored mean scores (M=39.60, SD=6.88) in post test and pre test (M=37.96, SD=7.57) respectively. On the basis of insignificant mean difference it may be said that muscular relaxation technique has less impact on frustration dimension regression. It means very less behavioural changes were perceived in terms of being finicky about foods, lack of self-control, homesick when away from home, crying easily, defective speech, excessive day-dreaming, exorbitantly ambitious among athletes.

When 't' test was applied to check the impact of muscular relaxation technique on frustration trait fixation, Mean score of pre test and post test differ significantly with each other on frustration dimension fixation. The calculated paired sample 't' value is significant ( $t=4.05, p<.01$ ). The mean value obtained in pre test and post test sessions for fixation are M=38.66 (SD=5.41) and M= 34.63 (SD=5.25) respectively. It can be concluded that muscular relaxation technique has greater significance in behavioural management of such characteristics limitations of all needs, no plan, no definite relation to future, a withdrawal tendency from social contacts, longing for loneliness, no social type of hobby, retreatism, returning within one's self, day dreaming, lack of interest in his surroundings etc.

It is clearly observed from Table 1.5 that significant mean difference is to be reported between pre and post test scores of athletes on frustration dimension resignation in experimental group.

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Mean score of pretest and post test are 35.96 (SD=6.87) and 31.26 (SD=5.33) respectively. 't' ratio is reported significant ('t'= 4.97,  $p < .01$ ). On the basis of this significant difference conclusively one can say that application of scheduled muscular relaxation sessions have significant impact on frustration dimension resignation among athletes. Behavioural characteristics like more or less rigidly, compulsive in many activities and stereotyped were decreased because fixative behaviour seriously blocks the acquisition of new forms of adjustment and have difficulty in forming new attachments developing new interest or adaptations among athletes.

It is evident from Table 1.6 that significant difference was revealed between pre and post test scores of athletes on frustration dimension aggression in experimental group. Mean score of pretest and post test are 44.83 (SD=4.74) and 37.96 (SD=5.26) respectively. 't' ratio is reported significant ('t'= 5.83,  $p < .01$ ). On the basis of this significant difference conclusively one can say that presentation of scheduled muscular relaxation technique have significant impact on aggression of athletes. It reveals that behavioural traits in terms of rude answering to elders, irritation, feeling of unfairness, carrying grudges, frequent quarrelling, broken engagement, impulse to take revenge and reactionary attitudes to traditions or beliefs were appropriately managed by athletes after relaxation sessions. Thus Ha3 (*Application of Muscular Relaxation Technique will reduce level of frustration among athletes in experimental group*) is partly accepted and partly rejected. It is maintained with reference to frustration trait like fixation, resignation and aggression whereas discarded with regression.

**Table 2:- Showing Mean, SD & 't' values between pre & post test scores of athletes for control group on various parameters**

Parameters	Sessions	Mean	N	S.D.	't'	Sig. Level
<b>Stress</b>	Pre-test	72.33	30	12.17	1.19	NS
	Post-test	69.60	30	8.42		
<b>Anxiety</b>	Pre-test	69.65	30	8.41	1.16	NS
	Post-test	68.36	30	8.05		
<b>Regression</b>	Pre-test	39.53	30	7.03	1.76	NS
	Post-test	37.43	30	7.68		
<b>Fixation</b>	Pre-test	39.63	30	4.93	1.90	NS
	Post-test	38.03	30	5.45		
<b>Resignation</b>	Pre-test	36.93	30	6.70	1.42	NS
	Post-test	35.76	30	6.57		
<b>Aggression</b>	Pre-test	44.83	30	4.74	1.45	NS
	Post-test	43.90	30	3.74		

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The findings can very well be analyzed from Table 2.1 to 2.6 that insignificant mean differences are to be found in control group for various parameters i.e. stress anxiety and frustration (regression, fixation, resignation and aggression) of athletes. For the parameter level of stress, mean scores of pre test and post tests are  $M=72.33$  ( $SD=12.17$ ) and  $M=69.60$  ( $SD=8.42$ ) respectively. 't' value is also to be found insignificant. ( $t'=1.19, p>.05$ ). By the same point of view table also indicate that mean value obtained by control group on anxiety in pre and post tests are  $M=69.65$  ( $SD=8.41$ ) and  $M=68.36$  ( $SD=8.05$ ). Difference between both the mean scores is to be found insignificant ( $t'=1.16, p>.05$ ). Similarly, in both pre and post sessions, control group have obtained mean score for frustration area regression are  $M=39.53$  ( $SD=7.03$ ) and  $M=37.43$  ( $SD=7.68$ ) respectively. Insignificant ('t') value is obtained ( $t'=1.76, p>.05$ )

As again mean score of pre and post test for control group on frustration area fixation are  $M=39.63$  ( $SD=4.93$ ) and  $M=38.03$  ( $SD=5.45$ ) respectively. Calculated 't' ratio is to be found insignificant ( $t'=1.90, p>.05$ ) whereas insignificant mean difference was observed for frustration dimension resignation ( $t'=1.42, p>.05$ ). In the same way last dimension of frustration i.e. aggression is also to be found insignificant ( $t'=1.45, p>.05$ ).

On the basis of above insignificant mean differences one can say that athletes of control group are by and large similar on scores of pre and post test sessions. Hence,  $H_{01}$  (*There will be no significant mean difference between pre and post assessment scores of control group with reference to level of stress, anxiety and frustration*). Relaxation techniques play vital role in behavioural management of athletes. Athletes express aggression and feel stress and anxiety more at lower level, their lower intensity of stress, anxiety and aggression contribute them to have control over their behaviour.

### CONCLUSION

The study indicated that how the athletes had significant improvement in the test scores as evaluated by their post-test assessment. Muscular relaxation technique was presented with the help of professionals as a management process of stress, anxiety and frustration. Anxiety stress and frustration, as negative emotion, affect perceptions in sports competitions, where a large majority of athletes consider Anxiety stress and frustration to be debilitating towards performance, which may result in decreases in performance. Several researches on Anxiety, stress and frustration among athletes indicated that athletes take drugs to combat anxiety and enhance performance. Progressive muscle relaxation technique is a influential technique to reduce the, respiration, blood pressure, muscle tense, anxiety, frustration and negative thoughts (Anshel, 2003; Keable, 1989; Nelson-Jones, 2003).

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### *Conflict of Interests*

The author declared no conflict of interests.

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