

**JOURNAL OF
SPORTS PSYCHOLOGY
ASSOCIATION OF NIGERIA**

Volume 2

2006



**JOURNAL OF SPORT PSYCHOLOGY
ASSOCIATION OF NIGERIA
(JOSPAN)**

**VOLUME 2
(2006)**



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Stress Management Techniques As Psychological Tool for Improving Sports Performance

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Abstract

This paper focused on stress management techniques as psychological tool for improving sports performance. The concept of stress was examined. Stress is not completely negative; it has both positive and negative effects. The nature of stress was also discussed. It further examined the body's responses to stress, signs and symptoms of stress, the stress management and stress reduction techniques. It concluded that whatever techniques to be adopted should be applied with the help of professionals in the area of sport psychology and physiology of sports to achieve desired result.

Stress is not a new concept. Walter Cannon a physiologist found out that there is a form of balance between body and the external world i.e., there is always response internally. He was the first to describe body reaction to stress i.e., the fight or flight response. Stress is quite an elusive term to define as its perception varies from one individual to another. Gatchell, Proppin and Varnhase (1991), describe stress as part of life from childhood and as an essential part of living. While too much stress causes illness, too little stress makes life dull. As a matter of fact, nobody wants everyday to be exactly the same with no challenges or risks.

Aderodolu and Adeogun, (2001) citing Hans Selye, (1976) defined stress as 'the state which results when any external action, situation or event places special physical and/or psychological demands on a person, to cause an adaptive response which varies from one individual to another'.

Stress is perceived as 'the body's reaction to forces of deleterious nature, infection and various abnormal state that tend to disturb its normal physiological equilibrium'. It may be seen as a situation where ones usual mode of coping behaviour is insufficient, where demands made, exceeds ones ability, or when there are clear obstacles to fulfilling ones strong need or value. A state of stress is therefore where there is imbalance between perceived demands and perceived

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ability to meet the demand. The process that follows is the coping process.

Stress varies in nature, amount and duration, and in reference to the individual. Stress is used to denote an excessive environmental force e.g. too much noise which by action on the individual causes harm, such as irritation or discomfort (external or internal). However some stress is over and done within a few moments, while others may last for years. In actual sense, the capacity of the individual to tolerate stress is somewhat dependent upon how long it lasts, and stress also varies greatly in its amount, and it may be stressful to give examples as we can all recognize some stress situations as being insignificant and others as being very great.

Getchell, Pippin and Vardes (1991), observed that some people perform very well at high levels of stress, while others fall out. During emotional excitement, injury or exercise, epinephrine increases blood sugar level and counteracts the hypoglycemic effect of insulin overdose.

Stress appears to be a common phenomenon in every life endeavour. In academics, stress is very prominent; the artisan also undergoes several stress modes. Likewise in the religious circle, stress is found to be prevalent.

Athletic performance is not left out as well. Where competition is the order of the day, stress is easily noticeable. From the pre-season to sport season and off-season, sport performance has several hidden stress, that bother the mind of the athletes and their officials.

Nature of Stress: The nature of stress varies in intensity, source and type.

Intensity: It has been scientifically proved that, a certain level or intensity is needed for an individual's daily activity. The relationship between stress and performance level is shown in the curvilinear graph below:

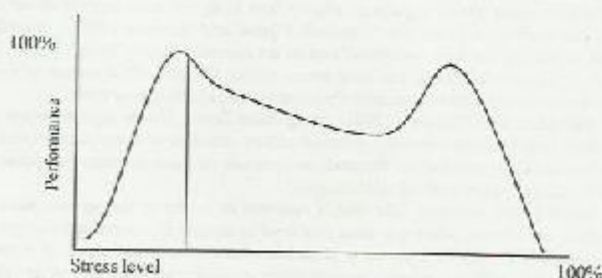


Fig. 1: Nature of stress, Alureda & Adegoke (2001).

The above graph shows that, a certain level of stress is required for a person to perform optimally at a particular activity and further increase of this level will be

counter effective. With the above graph in mind, stress may be classified as negative and positive. When stress has a negative effective, it is called Distress. This describes a feeling of anxiety, frustration, anger and pain. It manifests as anger against self, or against the source of distress or even the entire human race. A feeling of extreme fatigue always accompanies distress.

Stress may also have positive effects. Stress that has a positive effect is called Eustress. An example of this is a feeling of elation, euphoria or happiness, which could place a lot of tension on the body system. Hypostress on the other hand is a feeling of boredom due to lack of stimulation. It describes a state of low morale as well as little or no drive. Hyperstress is a state of over stimulation and manifests as hyperactivity, nervousness, poor attention span, uncontrolled excitement and over-anxiety, which may result in systematic failure.

Sources of Stress

Because of the psychosomatic composition of man, stress may be classified as: competitive stress, which is seen among peers and working colleagues. The desire to excel above the other could be very strong in an individual, to the point of overtaking the ability to achieve the self imposed target of achievement, and the desire to excel above others puts pressure/stress on the individual.

On the other hand, as one engages in any skill performance e.g. construction, singing etc., one takes extra care to at least minimize mistakes; this can lead to what is known as performance stress. In this case, the ultimate aim is to attain perfection. Such activities like competitive activities stimulate the release of the stress hormones.

Causes of Stress in Performance

Stress is strongly associated with negative thinking and therefore occurs as a result of negative thinking. For example, your judgment of a situation and the interpretations you give to it can become a stress to you. Imagine a situation where you perceive that "it's trouble" then you are more likely to experience stress, which may come from your perception.

Stress and Adrenaline

In a competitive environment where an athlete is required to perform for the purpose of evaluation for example, in an open championship where the officials are looking for the best, adrenaline may enter his blood stream as an athlete. This is because of the anxiety of performance. This may have some negative and positive effects on the body.

Signs and Symptoms of Stress

This aspect is divided into three.

a. The physical symptoms

- b. The mental symptoms
- c. The behavioural symptoms

The Physical Symptoms

This rests heavily on the response to the increase rate of adrenaline, which will also lead to: Increase in the heartbeat of the athlete, the rate of sweating increases physiologically, the skin becomes cool and this will lead to a reduction in the blood flow to the skin, increase in breathing, muscles will tense up, a feeling of presence of "Butterflies" in your stomach and, frequent desire or urge to urinate.

Mental Symptoms

These include: incessant worry, lack of concentration or difficulty in making decision, noticeable during game situation, proneness to sickness or ill health, feeling of low self-efficacy and low self-esteem, being overwhelmed and feeling of mental fatigue or mental block.

Behavioural Symptoms

Some behavioural symptoms are also noticeable when an individual is stressed. These behavioural dispositions are prominent: constant yawning and wrinkled face, dull looking, scowling, common nervous mannerisms like foot tapping, nail biting, frequent blinking of the eyelids, twitching and pacing.

The Body's Responses to Stress

Homeostasis refers to the maintenance of constancy or equilibrium in the internal system. As long as our environment remains constant, little or no effort is required to maintain balance. When our environment changes, however, it falls upon our internal balance regulators to adjust. Stressors are one important form of external environmental conditions, which bring the homeostatic mechanisms into action. In a very real sense, the stress response is simply an outgrowth of the body's attempt to adapt to a changing environment.

The body's response to a stressor is a complex one. Many changes take place - some are noticeable to any observer, while only the stressed individual senses some others. Some go unnoticed and take place without conscious awareness on the part of the person affected. These responses include among others; release of stored sugars and fats into the blood stream, to provide energy; increase in blood pressure to ensure adequate supplies to crucial areas, activation of blood clotting mechanisms to help protect against physical injury, tensing of muscles to prepare for rapid movement, heightened hearing and vision are intensified which tend to decrease. Thus, digestive processes slow down and the bowel and bladder muscles relax.

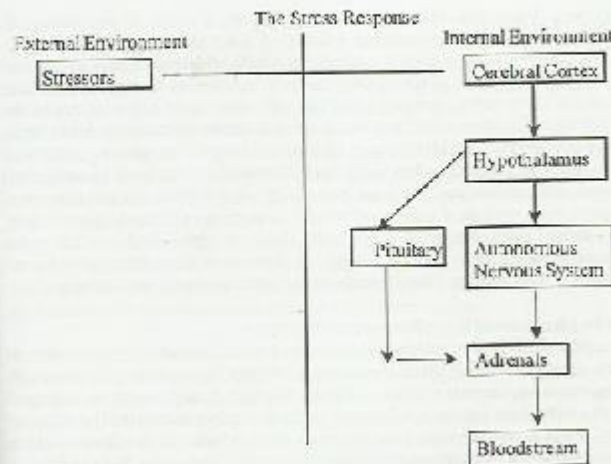


Fig 3: The stress response, Akerelehin & Adedapo (2001)

Types of Stress in Sport

i. Training stress: Exercise itself is a stressor to which athletes must adapt psychologically over time. Training sessions are designed to improve the physical and physiological ability of the athlete. As athletes regularly extend themselves physically, they may experience extreme fatigue as well as face the discipline of regular and often demanding training sessions. Not only are training sessions physically demanding, but athletes often extend themselves mentally to push past tiredness or fear. Athletes may also experience injury or illness, which may interfere with their training or competition goals.

ii. Competition stress: In the lead-up to an important competition, athletes often report feeling edgy, irritable and mentally occupied with thoughts of the imminent competition. Thoughts of the physical and psychological demands of the event, combined with the possibility of achieving, or not achieving the desired performance level, assist some athletes to lift themselves physically and psychologically to cope with the demands. For others, however, it can cause unnecessary worry and anxiety prior to the event and "choking" during important competitions.

iii. **Burn-out:** Burn-out, which is characterized by a range of psychological, physical and behavioural symptoms, refers to a state of emotional exhaustion, which results from pressures on the athlete or coach, which have built up over an extended period of time. Elite athletes commit themselves to rigorous training demands for many years, in many instances with little or no achievement of the goals that they and others may have expected of them. Individuals can lose energy and drive because they see little reward for their efforts and they can no longer cope with the demands being placed on them. Specific research, which has since focused on athletes and coaches has also examined which other factors, such as emotional adjustment, may mediate the potential effects of burn-out (Botzard, 1988; Feigly, 1984; Jender, 1989; Saffer & Crawford, 1988). Athletes and coaches, who experience burn-out, may require periods of time away from their sport for re-assessment of their goals and implementation of stress management strategies.

Health Implications of Body Response to Stressors

The complex pattern of events, which take place as a result of body's response to stressors, requires that significant amounts of energy be expended. Exposure to stressors over long periods of time will cause the body's response to be activated repeatedly with short intervals in between each successive response. The effect of this may have negative impact on the body as a whole. Such effects include adrenaline depletion, high blood pressure, and inappropriateness of flight or flee.

Stress Reduction Techniques

Choice of stress reduction technique is primarily dependent upon the cause of the stress and the prevailing circumstance where they occur. Hence it is needful to find out the origin of your stress in order to combat it. For example, if stress is based on external factors such as coach-athlete relationship, a positive thinking or imagery may be desirable. But if it borders on feeling, sensation issues within the body mechanism (changes in adrenaline) then relaxation technique may be effective.

i. Hypnosis, meditation and autogenic training

Techniques such as hypnosis, meditation and autogenic training are commonly used in sport. Hypnosis is a deeper form of relaxation in which the mind is in a more focused state. Unestahl (1979) coined the phrase "ideal performance state" and likened peak performances in sport to the hypnotic state. He suggests that athletes who can learn to achieve a hypnotic state, easily, may be able to achieve a greater control over their sporting performances (Unestahl, 1985). Hypnosis can be used to provide general confidence building suggestions and to incorporate post-hypnotic suggestions, which focus on future performance. Success depends on the receptiveness of the athlete to hypnosis and on correctly identifying the key issues that need addressing.

Autogenic training was developed as a means of self-hypnosis (auto means self). In it, the individual learns to create a number of physical concomitants of the

hypnotic state, that is, phenomena commonly experienced during hypnosis. These include heavy and warm limbs, rhythmical breathing and heartbeat, a warm solar plexus and a cool forehead. As in many meditation techniques, a passive attitude is also a key element of autogenic. The full method can take several months to develop, but warmth and heaviness can be induced much more quickly and may often be enough for the needs of athletes.

There is a variety of meditation techniques; the most commonly recognized being that of Transcendental Meditation (Maharishi Mahesh Yogi, 1966). In this form of meditation, a "mantra" is recited twice a day for about 15 minutes, to achieve a state of inner awareness, yet wakefulness. Other meditation exercises often encompass focusing on an external object. By practicing this attentional control, the athlete can learn to control and narrow his or her concentration onto more specific performance cues or the techniques can be used to block out performance distractions such as noise or negative thoughts.

iii. Massage, exercise, flotation and biofeedback

These techniques are seen as more active or physical forms of relaxation. Many sports, but particularly endurance sports, are very demanding on the muscles in the body. Many athletes find that relaxation exercises alone are not sufficient to give them the reduction in muscle tension that they need. The muscle tension may result from stress, but can also result from sore muscles from training. Massage combined with a program of general relaxation can be very effective, particularly after the massage has reduced muscle tension which may have built up over time.

Exercise has been recommended as useful in stress reduction as a "tension release" (Nideffer, 1981) and a variety of physiological and psychological benefits from regular, moderate exercise have been put forward (Breslow, 1990; Paffenbarger, Hyde & Wing, 1990). However, the elite athlete who already engages in high levels of physical activity may not benefit in the same way from exercise as the non-elite athlete. The elite athlete may already be too tired physically from training to engage in further aerobic exercise and it may increase the risk of physical injury. Elite athletes, however, who are not involved in endurance sports or those in the "off-season" may find aerobic exercise of benefit in improving their general state of well-being.

Flotation Restricted Environmental Stimulation Therapy or REST (Suedfeld, 1980) has become increasingly popular as a form of stress release and performance enhancement for athletes. Most institutes of sport have flotation tanks available to their athletes and they are considered useful to enhance performance, through the use of mental rehearsal, as well as to assist in recovery from demanding training sessions (Hutchinson, 1984; Stanley, Mahoney & Reppert, 1987; Suedfeld, Collier & Hartnett, 1993). By floating in a tank filled with warm, saline solution, the athlete experiences reduced sensory input due to the quiet environment. Physiological changes which occur, such as reductions in heart rate, blood pressure, muscle tension, fatigue and depression, makes flotation a useful stress management tool.

Biofeedback enables greater control over bodily processes such as heart rate and blood pressure (Miller, 1969). In its simplest form, biofeedback may mean learning to control your own heart rate by listening to your heart and slowing down your breathing. More complex equipment is also used to let you know when your body is responding in the way that you want it to. For example, the athlete receives "feedback" in the form of an auditory tone when alpha waves associated with relaxation are present, or when the muscles in the body are relaxed. Because stress often produces changes in the body such as racing heart rate and tense muscles, biofeedback techniques are useful in helping to control these symptoms. For example, just before an event, an athlete may want to steady his or her racing heart in order to concentrate better on the task ahead, rather than becoming too nervous before the race.

Stress is not only manifest in physiological symptoms, such as increased heart rate and sweating but, also, in how the athlete focuses and controls his or her thoughts, mood and actions. The following techniques are more cognitively and behaviourally oriented assisting the athlete in controlling thoughts and actions.

iii. Mental rehearsal, visualization and visuo-motor behaviour rehearsal

Techniques such as mental rehearsal and visualization are commonly used in sport to enhance performance and reduce stress and tension. An athlete who wants to reduce stress and tension may visualize his or her self in a favourite relaxing scene, whereas the athlete who is mentally rehearsing a performance may picture his or her self performing in the way that he/she wants or expects to. The mental rehearsal of new skills can hasten the learning of these skills simply through becoming more familiarized with them, as well as through small movements in "neuromuscular activity" of the muscles that would be used if the skill were actually being performed (Mackay, 1981; Ullrich, 1967). Mental rehearsal may also assist athletes to picture their "ideal" performance as well as to rehearse handling difficulties or setbacks in a positive way.

Visuo-motor behaviour rehearsal (Sahni, 1976, 1987) encompasses a shortened version of Jacobson's Progressive Relaxation, the practice of imagery skills, as well as the specific use of imagery for enhancing mental and physical skills. The athlete masters each technique before progressing on to the next one.

iv. The Progressive Muscular Relaxation (PMR) Technique

It is possible to enjoy your performance without any problem, if the mind is clumsy, the brain becomes over powered and the impulses that will be released to the muscles are such that will be unhealthy to the muscle, it is therefore necessary for you to understand the mechanism of relaxation through a progressive means.

Progressive Muscular Relaxation (PMR) is all about the process of creating a tense condition for a group of muscles so that they are a tight and constructed as a state of extreme tension for a few seconds. Then relax the muscle to their previous state. Much later, you finally relax them again (Orlick, 1979) PMR is applicable to any part of the muscles of the body.

Managing Stress

Individuals vary in the amount of stress they can carry, but every individual is subject to breakdown if the stress becomes sufficiently severe. For any stress condition confronting an individual, there are two possible outcomes; either the stress is successfully or unsuccessfully dealt with. While some stress can be completely avoided, some cannot be avoided completely, but can be minimized. Mastering a major stress experience increases the individual's sense of adequacy and confidence and prepares the person to face the next life experience with ease.

One step towards managing stress is to find relaxation, anything that completely absorbs one's attention and is fun, is restful; because it changes the activity and relieves the mind. An important way to reduce stress is to identify the form of stress that one has voluntarily taken on. According to Gertchell, Pippin and Vanness (1991), three other ways to protect the individual against stress include maintaining good physical health, relaxing and making friends.

To reduce the effects of stress on the body, one must try and stay in good health. Good eating habits, plenty of rest, and adequate exercise help in keeping the body in shape, especially in the time of high stress, eating and sleeping well are very important. Increasing exercise levels is also a good defense against stress. Exercise can improve health in general with specific improvement of the cardiovascular system, respiratory system and some bio-chemical changes.

Physical exercise can be a potential physical stressor, and as a stressor it requires adaptation. This adaptation called training can facilitate and economize body responses to other stressors and help prevent the exhaustion phase of the stress syndrome. Training by moderate physical exercise can set up a cross-resistance to various forms of stress. A person who has been training with physical stress therefore will have resistance against emotional stress.

Finally, one should understand that moderate stress could help people achieve, because it is a motivating force. However, a balanced diet schedule with enough time for rest as well as recreation will increase efficiency and reduce stress.

Role of Sports Psychologists

Sports psychologists should be involved in the training of athletes prior to competitions. They are expected to expose athletes to various coping mechanisms that are considered effective in managing performance stress. Those athletes that manifest low level stress prior to competition may be assisted through the adoption of psyching up tools. Focusing on the importance of or urgency of the task, use of suggestion e.g. affirmative statement like "I can feel energy flowing into me", breaking down activities into small parts and taking satisfaction from the successful completion of each element may be some of the useful techniques.

It should however be noted that psyching up may actually move athletes who are already quite stressed out of their area of best performance; hence it should be adopted when they are under-stressed.

Sports psychologists should expose with athletes and coaches to tension reduction techniques that could be applied during stress situations. All that are concerned with sportsmen should acquire some knowledge about sports psychology.

Athletes should be exposed to psychological skills. Mental and physical relaxations are essential to cope with stressful competitive situations. Mental and psychological skills such as determination, will power and concentration are to be specifically taught and mastered by athletes. These in turn help to enhance athletes' optimum performance.

Conclusion

It is essential that elite athletes learn to effectively manage the many demands placed on them. As technological advances in sport continue and as financial incentives become increasingly available to athletes, the pressure to perform is intensified. The repercussions from "not performing" have already become far greater than "loss of pride" and disappointment. Athletes need mental discipline to keep their focus on their training and performance goals, as well as mental strength and resolve to deal with the inevitable set backs. Managing stress for athletes and coaches is an essential life skill as well as performance enhancement tool.

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