International Journal of Advanced Education and Research
ISSN: 2455-5746, Impact Factor: RJIF 5.34
www.newresearchjournal.com/education
Volume 1; Issue 2; February 2016; Page No. 32-34

Usefulness of relaxation technique in the rehabilitation of sports injuries

Dhirender Kaim, Shilpi Jain

Ph.D. Research Scholar Department of Physical Education & Sports Science, University of Delhi, Delhi.

Abstract
When involved in sport, athletes are often experiencing immense physical and psychological pressure, and as a consequence the likelihood of experiencing negative outcomes such as injuries is amplified. Sport injury rehabilitation has developed into being a multifaceted process, and as such, those medical professionals working with athletes on a day-to-day basis need adequate skills to facilitate both physical and psychological healing for any treatment to be effective. Researches had shown that a numbers of psychological intervention can be useful during rehabilitation process and there is a link between the use of psychological skill and healing. In that context the aim of this research paper is to introduce, and discuss one of the most used psychological intervention i.e. Relaxation Technique for the rehabilitation and management of the sports injury. There are also several types of relaxation techniques are used in sports injuries rehabilitation but for the purposes of this research paper, only the three central relaxation techniques which are most widely used as psychological intervention in sports injury (i.e., breath control techniques, PMR, and passive relaxation) are discussed in detail. Research paper concluded that, Slow breathing technique has been acknowledged as having stress-relieving properties, deep breathing has been proposed as being one of the simplest and effective ways to control pain and anxiety during rehabilitation, PMR has been proposed as best suited for athletes who are unaware of the level of tension in their bodies, and where that tension is seen as facilitator for pain and general physical discomfort, and passive relaxation has been proposed as most suited to athletes with low or moderate levels of muscle tension that are using relaxation to achieve an overall sense of calm and physical relaxation.

Keywords: Sport Injury, Rehabilitation, Psychological Intervention, Progressive Muscles Relaxation, Passive Relaxation

1. Introduction
According to the Council of Europe (2001), the term sport refers to "all forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels".
When involved in sport, athletes are often experiencing immense physical and psychological pressure, and as a consequence the likelihood of experiencing negative outcomes such as injuries is amplified. Injuries have both physical and psychological consequences, providing holistic care during recovery should be of importance for all those working with athletes during injury rehabilitation (Petitpas & Danish, 1995).
Sport injury rehabilitation has developed into being a multifaceted process, and as such, it can be argued that those medical professionals working with athletes on a day-to-day basis (e.g., athletic trainers and physiotherapists) need adequate skills to facilitate both physical and psychological healing for any treatment to be effective.
Researches had shown that a numbers of psychological intervention can be useful during rehabilitation process and there is a link between the use of psychological skill and healing. Research finding also suggests that fast healing athletes were more likely use psychological interventions than the slow healing counterparts. In that context the aim of this research paper is to introduce, and discuss the one of the most used psychological intervention i.e. Relaxation Technique for the rehabilitation and management of the sports injury.

2. Relaxation Techniques
According to Hill (2001), relaxation can be defined as a temporary deliberate withdrawal from everyday activity that aims to moderate the functions of the sympathetic nervous system which is usually activated by stressful situations. In sport, the term relaxation has been use to describe a range of methods through which an athlete can facilitate his/her physical and psychological well-being.

3. Classification
Commonly relaxation techniques have been divided into two main categories, namely 'physical' and 'mental' relaxation, depending on the techniques' focus (Flint, 1998b).
The aim of physical relaxation techniques is to release physical tension in the body by focusing systematically on specific muscles or body parts. The most commonly used physical relaxation techniques in sport include Progressive Muscular Relaxation technique (PMR; Jacobson, 1938), an Applied Relaxation Technique (ART; Ost, 1988), breath control techniques, Centering (Hardy & Fazey, 1990), and Biofeedback (cited in Hardy *et al*., 1996; Weinberg & Gould, 2007).
Secondly mental relaxation techniques on the other hand attempt to focus more directly on the mind and not the body, and are constructed around the belief that a relaxed mind will in turn relax the body. Some of the main mental relaxation techniques employed in sport are autogenic training (Schultz & Luthe, 1969) and transcendental meditation, which in sport forms the basis for the Relaxation Response technique (Benson & Proctor, 1984).

4. Benefits of Relaxation Techniques in Sport Injury Rehabilitation
According Hardy *et al*. (1996), athletes can benefit from the ability to relax for two major reasons. Firstly, relaxation can

help athletes to alleviate levels of anxiety, enable anxiety control, and even assist athletes to use anxiety to their advantage. Secondly, a link between being relaxed and the ability to produce peak performances has been found (Jackson 1992; Williams & Krane).

According to Flint, many of the psychological skills and techniques (e.g., imagery) employed during injury rehabilitation rely on a foundation of relaxation for it to be effective. Drawing from the literature, it appears that relaxation techniques are useful during injury rehabilitation for two main reasons: first, relaxation techniques can be used to alleviate, control, and cope with pain, and second, to assist athletes in coping and controlling levels of somatic and cognitive anxiety (Beneka *et al*., 2007).

Several studies investigating the effects of pain-management techniques in a range of settings have indicated that individual's overall pain tolerance can be improved, and levels of pain can be reduced through the use of relaxation techniques (Gauron & Bowers, 1986; Turk, Meichenbaum, & Genest, 1983).

A recent review of literature suggests relaxation techniques are useful when the aim of the rehabilitation exercise is to obtain normal range of motion, or restoring joint stability (Beneka *et al*., 2007).

5. Relaxation Techniques Methods

A range of relaxation techniques have been found to be useful for injured athletes during rehabilitation. Flint (1998b) considers the use of PMR, meditation, yoga, breathing control, and autogenic training as beneficial for injured athletes. Wagman and Khelifa (1996) propose the use of breathing techniques and PMR as the most beneficial in helping injured athletes to cope with stresses related and associated with injury. There are several types of relaxation techniques are used in general but for the purposes of this research paper, only the three central techniques which are most widely used as psychological intervention in sports injury (i.e., breath control techniques, PMR, and passive relaxation) are introduced and discussed in detail.

(A) Breathe Control Techniques

According to Payne (2004) some of the more prominent breathing techniques include slow breathing, deep breathing, and diaphragmatic breathing, breathing meditation, and breathing with imagery. When applied to sport injury rehabilitation, breath control techniques are seen as suitable for alleviating and controlling pain as well as dealing with increased levels of somatic and/or cognitive anxiety.

Studies investigates found that slow breathing technique has been acknowledged as having stress-relieving properties, but the underlying mechanisms as to why this is the case are unclear (Payne, 2004), however the extent to which slow breathing techniques are employed in sport injury rehabilitation is currently unknown.

In contrast, deep breathing has been proposed as being one of the simplest and effective ways to control pain and anxiety during rehabilitation (Taylor & Taylor, 1997, 1998). First, deep breathing is proposed to relax the muscles, subsequently relieving muscle tension and any other physiological symptoms related to increased muscle tension. Second, it facilitates the transportation of oxygen to the injured area which in turns facilitates the healing process. Deep breathing is also suitable to use as a means of redirecting the injured athletes focus away from the experienced pain and discomfort during rehabilitation (Taylor & Taylor, 1998). Deep breathing enables a reduction in athletes' levels of anxiety, thus allowing the athletes to gain greater levels of control over their bodies, which in turn can have positive effects on the athlete's self-efficacy, self-confidence, and motivation.

(B) Progressive Muscular Relaxation

PMR refers to the combination of deep breathing and systematic tensing and releasing of specific major muscle groups. The intention of PMR is to relax the skeletal musculature, which, once successful will often be followed by the relaxation of the mind (Crossman, 2001; Flint, 1998b),

The process of PMR is relatively simple. Anxious and tense athletes may find it difficult to "just shake their muscles out and get them to relax" (Taylor & Taylor, 1997, p. 161). Therefore, instead of attempting to relax the muscles, the PMR requires the athletes to first tighten the muscle, and then relax them. This procedure will cause the muscles to rebound from a previous state of muscle tension down to a lower level of tension. Often PMR is used with either four major muscle groups (i.e., face and neck, arms and shoulders, chest and back, and legs and buttocks), or more localised to a specific set of muscles which appear to be the main cause of the tension. This systematic process is accompanied by controlled deep breathing, which, when combined with tensing and releasing can also assist the athletes to become more aware of the different muscle groups in their bodies.

As a result, PMR has been proposed as best suited for athletes who are unaware of the level of tension in their bodies, and where that tension is seen as facilitator for pain and general physical discomfort (Taylor & Taylor, 1997). Rotella (1982) believes that PMR is most suitable for athletes who exhibit the tendency to be overly anxious about their injuries, and who suffer from insomnia, tension headaches, or general tightness.

(C) Passive Relaxation

In contrast to the above, passive relaxation has been proposed as most suited to athletes with low or moderate levels of muscle tension that are using relaxation to achieve an overall sense of calm and physical relaxation (Taylor & Taylor, 1997).

Passive relaxation was developed by Taylor (1996), and rather than tensing and releasing major muscle groups (PMR), passive relaxation involves the use of imagery. During the process, athletes are required to imagine their tension (or pain) as a liquid which is filling their muscles. Aided by deep breathing, athletes are then required to imagine the process of draining this liquid away from their bodies through the drain plugs on the bottom of their feet. The purpose of deep breathing is to act as a facilitator in pushing the tension away (Taylor, 1996).

6. Principles of Using Relaxation Techniques for Rehabilitation

Regardless of the type of relaxation to be used, several prerequisites are necessary for effective relaxation. Flint (1998b) states that learning how to relax is a skill, and as with any other skill, must be learned and practised for it to be

effective. Rotella (1982) believes that the first step in any relaxation training should be education. The athlete should be educated about the purpose, the benefits, and the rationale for the use of relaxation, and any possible questions and qualms about the technique should be highlighted and resolved. On a more practical level, it is also vital to ensure that relaxation takes place in a quiet, calm, comfortably warm area with subdued lighting. Athletes should be positioned lying down or in a chair, with the emphasis being on athletes feeling comfortable in the position adopted. Athletes should use loose and comfortable clothing, and to remove any unnecessary items such as shoes, watches, glasses, contact lenses. It has also been proposed that pre-recorded audio recording of the relaxation script and the use of audio equipment (i.e., CD, iPod, MP3 player) during the relaxation process can be beneficial in facilitating the relaxation process. Taylor and Taylor also propose relaxation as being most effective when integrated into the structure of daily physical sessions (e.g., using deep breathing during the times when pain is prominent and hindering the rehabilitation process).

7. Conclusions

- Sport injury rehabilitation has developed into being a multifaceted process, professionals working with athletes on a day-to-day basis (e.g., athletic trainers and physiotherapists) need adequate skills to facilitate both physical and psychological healing for any treatment to be effective.
- Slow breathing technique has been acknowledged as having stress-relieving properties.
- Deep breathing has been proposed as being one of the simplest and effective ways to control pain and anxiety during rehabilitation.
- PMR has been proposed as best suited for athletes who are unaware of the level of tension in their bodies, and where that tension is seen as facilitator for pain and general physical discomfort.
- Passive relaxation has been proposed as most suited to athletes with low or moderate levels of muscle tension that are using relaxation to achieve an overall sense of calm and physical relaxation.
- Regardless of the type of relaxation to be used, several prerequisites are necessary for effective relaxation like education about the purpose, the benefits, and the rationale for the use, comfortable position during process and relaxation as being most effective when integrated into the structure of daily physical sessions.

8. References

1. Andersen MB, Williams JM. A model of stress and athletic injury: Prediction and prevention. Journal of Sport & Exercise Psychology. 1988; 10:294-306.
2. Brown C. Injuries: The psychology of recovery and rehab. In S. Murphy (Ed.), the sport psych handbook Champaign, IL: Human Kinetics, 2005, 215-235.
3. Finch C, Valuri G, Ozanne-Smith J. Sport and active recreation injuries in Australia: Evidence from emergency department presentations, 1998.
4. Flint FA. Specialized psychological interventions In F. A. Flint (Ed.), Psychology of sport injury Leeds: Human Kinetics, 1998b, 29-50.
5. Heil J. A comprehensive approach to injury management. In J. Heil (Ed.), Psychology of sport injury Champaign, IL: Human Kinetics, 1993a, 137-149.
6. Johnson U. Short-term psychological intervention: A study of long-term-injured athletes. Journal of Sport Rehabilitation. 2000; 9:207-218.
7. Larson GA, Starkey C, Zaichkowsky LD. Psychological aspects of athletic injuries as perceived by athletic trainers. The Sport Psychologist, 1996; 10:37-47.
8. Martin K, Hall C. Using mental imagery to enhance intrinsic motivation. Journal of Sport & Exercise Psychology. 1995; 17:54-69.
9. Rotella RJ, Reilly AS. (Eds.), Sport psychology: Psychological considerations in maximizing sport performance (pp. Ann Arbor, MI: McNaughton and Gunn, 273-287.
10. Rotella RJ, Heyman SR. Stress, injury, and the psychological rehabilitation of athletes. In J. M. Williams (Ed.), Applied sport psychology: Personal growth to peak performance Mountain View, CA: Mayfield. 1993; 2:338-355.
11. Taylor J, Taylor S. Pain education and management in the rehabilitation from sports injury. The Sport Psychologist, 1998; 12:68-88.
12. Weinberg RS, Harmison RJ, Rosenkranz R, Hookim S. Goal setting. In J. Taylor & G. S. Wilson (Eds.), Applying sport psychology: Four perspectives Champaign, IL: Human Kinetics. 2005, 101-116.