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CURRENT STATUS AND PROSPECTIVE DEVELOPMENT IN SPORTS REHABILITATION

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ABSTRACT

Sports specialists agree that the field of sports injury rehabilitation has suffered major setbacks in the past due to the growing reluctance of injured athletes to participate in various rehabilitation programs and due to athletes' insistence on home recovery. In general, the sports rehabilitation process begins with the administration of pain management and treatment programs by professionals who work in designated programs under the supervision of licensed physical therapists. Sprains, strains, muscle pulls, and stitches are the most common types of sports injuries treated in sports rehabilitation centers. This review provides an in-depth study of the sports injury rehabilitation process. It also provides an assessment of the present state of sports injury rehabilitation and provides suggestions for its future direction.

Keywords: Rehabilitation, Sport Injury, Treatment, Athlete Injury

1. Introduction

Sports injury rehabilitation centers have experienced a decline in reputation because prominent athletes, such as Lebron James, Michael Jordan, Lionel Messi, Christiano Ronaldo, and John Terry have chosen to recuperate at home. Therefore, to restore sports injury rehabilitation's reputation and to restore athletes' confidence in them, these rehabilitation centers must be rebranded with clear-cut departmental milestones. This move can, in turn, safeguard the future of sports injury rehabilitation. Centers should provide comprehensive recovery programs that include first aid, diagnosis, treatment, alternative training, and full recovery. If injured athletes adhere to proper recovery plans, they may return to the field sooner. An article by Wiese, Smith, & Scott (1990) suggested a variety of protocols and procedures that may be vital for injured athletes' recovery.

2. Sports Injury Rehabilitation

The term sports rehabilitation is used to describe a multidisciplinary approach to the treatment of injuries sustained during sports participation and other related activities. The rationale for sports rehabilitation is to assist participants in their recovery of normal pain-free mobility. The field of sports rehabilitation includes highly trained professionals such as massage therapists, physical therapists, chiropractors, and athletic trainers. The primary goal of sports rehabilitation is to assist injured athletes to return to pre-injury activities. Sports rehabilitation professionals assist all types of athletes: amateur, casual player, and professional. Sprains, strains, muscle pulls, and stitches are the most common typesof sports injuries treated by sports rehabilitation centers. Sprains consist of damage to the ligaments due to tearing or overstretching. Sprains are injuries or tears to muscles. As part of a sports rehabilitation program, the rehabilitation and first aid team must attend to a wide variety of related issues, such as arthritis, joint replacements, fractures, and generalized pain (Mainwaring, 1999; Truong, Mosewich, Holt, Miciak, & Whittaker, 2020).

The process of sports rehabilitation characteristically begins with pain management and treatment by professionals who work in various designated programs under the supervision of licensed physical therapists. To address pain relief and pain management, professionals may employ ultrasound, electrical stimulation, and the application of ice and/or heat. Ultrasound treatment is a valuable tool because it can increase circulation in the injured or affected area. This, in turn, speeds the healing process. Ultrasound treatment can also reduce swelling or edema that may cause pain. Electrical stimulation treatment can relieve muscle pains by the use of electric waves that penetrate muscles. This type of treatment is commonly referred to as TENS, or Transcutaneous Electrical Nerve Stimulation (Scherzer et al., 2001).

Many physical therapy experts agree that exercise is an essential component of the rehabilitation process for almost all types of sports injuries. However, the belief that athletes are fully healed upon completion of treatment by sports therapists is inaccurate. Athletes must submit to a variety of other related processes. Reliance on a wide range of treatments is the essence of sports injury rehabilitation. When athletes consult physiotherapists during ongoing treatment, they must participate in a set of specific strengthening and flexibility exercises to complete the recuperation process. Exercises are an integral part of the rehabilitation process. Specific exercises can remedy the actual causes of injuries and assist athletes' injured body parts to return to fully functional states (Ong & Chua, 2021; Wadey&Hanton, 2008).

For instance, an athlete may need to recuperate from tennis elbow. His rehabilitation may require the reinforcement of the wrist extensor muscles to prevent injury recurrence. In comparison to the wrist flexor muscles, extensors muscles may be fragile and weak and, therefore, susceptible to overload. Alternatively, an athlete may need to recover from a hamstring strain. His rehabilitation may require stretching and strengthening of the injured hamstring to insure that strength and flexibility are equal on both the injured and non-injured sides. These examples demonstrate that exercise is an essential part of the rehabilitation process. Thus, coaches and trainers must realize that they play a significant role in athletes' rehabilitation processes. They can assist athletes by the provision of inspiration as the athletes work to recover their optimal fitness (Hamson-Utley et al., 2008; Stamenković&Vesković, 2022).

Stretching techniques and regular exercise routines are essential parts of the sports rehabilitation process. Stretching helps muscles shortened by pain or injury to recover their standard length to optimize pain-free motion. Proper exercise routines designed to improve performance require certain levels of body fitness and strength, flexibility endurance, and balance. Each exercise routine includes progressive, functional exercises designed to help an athlete return to his/her previous level of performance. The design of functional exercises is often sport-specific.

Often, athletic trainers may provide immediate interventions after athletes are injured. Therefore, trainers are integral parts of the healing process. They can also help prevent further injury. Massage therapists can employ manual techniques to provide pain relief and aid in the recovery of movements necessary for optimal sports performance and participation.

Currently, many sports rehabilitation programs utilize chiropractors (i.e., healthcare professionals trained in manual soft tissue techniques such as spinal manipulation) to improve athletes' recuperation and recovery of pre-injury performance abilities. Licensed chiropractors are also trained in the use of exercise and stretching techniques (Brewer, 2000; Burland, Toonstra, & Howard, 2019).

At the beginning of the sports injury rehabilitation process, professionals treat acute injuries prior to the treatment of other forms of injuries. During the process, expert teams of medical specialists oversee athletes' recuperation and recovery until they regain optimal health. The sports injury rehabilitation process consists of broad and comprehensive rehabilitation programs that focus on every aspect of effective, pain-free, sports-specific

motion. Treatments can include pain relief, injuryprevention, and optimization of muscle length to assist athletes in their return to pre-injury performance levels.

Many injuries occur during leisure physical activities as well as during competitive athletics. The success of sport injury rehabilitation requires injured athletes' unconditional compliance with the instructions of sports medicine/injury personnel, regular participation in rehabilitation programs, and regular practice of rehabilitation exercises at home.

Recently, the subject of the future of sports injury rehabilitation and individual compliance has emerged as a topic of interest among physiotherapists and other allied professionals such as physicians and sport trainers. The key areas of interest include compliance by injured athletes, the recovery process, treatment, recovery of optimal health, and the efficacy of sports injury rehabilitation in relation to personal investment theory, protection motivation theory, and models of cognitive appraisal (Drawer & Fuller, 2002; Kurittu, et al., 2022).

Professionals have developed a set of specific guidelines and practical strategies to assist sports injury rehabilitation personnel to increase injured athletes' compliance with injury rehabilitation. Professionals from sports medicine departments, in conjunction with sports injury personnel, should inform athletes of the ways that injury rehabilitation can improve their chances for optimal recovery. Professionals should particularly highlight the success rate of rehabilitation when conducted under the supervision of a personal physician or sports trainer. In addition, it is crucial to underscore that communication and active listening are critical skills that can insure optimal recovery after acute injuries. According to Ardern, Taylor, Feller, & Webster (2013), social support and encouragement are vital to the process of injury rehabilitation of any kind. She states that sports medicine/injury personnel should encourage injured athletes to adopt positive attitudes. Bianco (2001) also notes that emotional support is crucial for successful injury rehabilitation. Therefore, sports medicine/injury personnel should help athletes cope with pain by the creation of short-term goals. These goals may compel athletes to increase compliance with specific programs during rehabilitation.

3. The Future of Sports Injury Rehabilitation

Sports specialists agree that sports injury rehabilitation has suffered major setbacks in the past due to growing reluctance among injured athletes to participate in various rehabilitation programs and due to athletes' insistence on home recovery. Sports injury

rehabilitation centers have suffered waning reputations in the past because prominent athletes such as Lebron James, Michael Jordan, Lionel Messi, Christiano Ronaldo, and John Terry have insisted on recovery at home. Therefore, to restore the reputation of sports injury rehabilitation and to help restore injured athletes' confidence in them, these rehabilitations centers must be rebranded with clear-cut departmental milestones (Drawer & Fuller, 2002). This move, in turn, can safeguard the future of sports injury rehabilitation. In addition, rehabilitation should consist of a comprehensive recovery program that includes first aid, diagnosis, and treatment.

3.1. First Aid

When an athlete sustains an accidental injury, such as a sprained ankle or pulled hamstring, the correct first-aid procedures should be initiated immediately before any other form of medical attention is provided. The designated protocol that should be used to treat an accidental injury is the familiar RICE protocol. This use of this protocol is standard at competent sports injury rehabilitation centers. The RICE protocol stands for: Rest the injured part immediately; Ice the injury site; Compress the injured site with strapping; and Elevate the injured limb. RICE is the standard and accepted first aid procedure for the treatment of accidental injuries. All rehabilitation centers should employ competent personnel who can offer these recovery protocols (Levy, Polman, & Clough, 2008).

The RICE protocol helps with pain relief and control of inflammation and swelling. If RICE is performed appropriately, it can speed healing and recovery. An athlete can return to the field sooner. In the case of bone fractures and serious injuries, amateur first aid should be avoided. Professional assistance should be secured as soon as possible. In the case of chronic injuries such as tennis elbow or shin splints, a trainer should respond immediately to the injury. The trainer should then discontinue training to avoid any further damage. It is important to remember that the sooner the athlete stops, the sooner the athlete is likely to recover (Hatzigeorgiadis& Biddle, 2008).

3.2. Diagnosis and Treatment

After completion of appropriate first aid procedures, the next part of the recovery process should include accurate diagnoses of athletes' injuries. Injury personnel should provide appropriate referrals to centers where athletes can receive expert treatment. This stage is critical because, in some cases, athletes may receive inaccurate diagnoses that can be

detrimental to recovery and exert negative impacts on athletes' total health (Deutsch, 1985; Smith, Scott, &Wiese, 1990). For this reason, the presence of skilled medical personnel is vital to prevent the recommendation of inappropriate treatment plans. In general, physiotherapists who specialize in sports injuries are the most appropriate professionals to consult after injury because these therapists regularly treat these types of injuries. Unfortunately, not all orthopedic surgeons are competent sports injury specialists. Once the athletes have chosen rehabilitation facilities, sports injury professionals will prepare and implement the required treatments. Typically, the preliminary stage of treatment will involve pain minimization and promotion of healing. Trainers may become indirectly involved in treatment plans. They can consult with medical practitioners to learn about the types of treatments the practitioners have chosen and why those treatments were chosen (Appanel, Levine, Perna, &Roh, 2008).

3.3. The Future of Sports Rehabilitation: Alternative Training

International soccer icon, John Terry, once stated that alternative training is an integral part of sports injury rehabilitation. Alternative training can support recovery plans and help athletes regain optimal fitness. To insure the future success of sports rehabilitation, treatment should incorporate alternative training. This type of training allows athletes to continue training despite injuries. Alternative training involves the adoption of different types of training and/or training methods. Treatments are selected based on the condition that the chosen methods will not worsen injuries. One of the most important goals of alternative training during the rehabilitation process is maintenance of athletes' aerobic fitness levels (Levy et al., 2008). For example, rather than running, athletes can engage in cycling or they can run in a pool with flotation belts. These types of activities are considered alternative training methods. Coaches and trainers should implement activities such as alternative aerobic training as essential components of injury rehabilitation. Alternative training supports the idea that, despite injuries, athletes should remain in good athletic condition. In addition, athletes can consider the injury period as opportunities to strengthen other areas of their bodies because only the injured parts requires rest (Wadey&Hanton, 2008).

3.4. Progressive Return to Full Training

As pain subsides and athletes begin to regain their former athletic form, the transition between alternative training and normal training can begin. During this phase, clear communication between coaches, therapists, and athletes is essential. Medical experts agree that, at times, coaches and trainers may push athletes too hard and too soon after injuries. This type of pressure can set the pace for the recurrence of similar injuries. This can become a vicious cycle (Geidne, Quennerstedt, & Eriksson, 2013; Griffin, 2008). Athletes, coaches, and trainers must understand that, even though the injured parts are pain-free, it does not mean that athletes have fully recovered. Once athletes have regained their ability to participate despite injuries, these athletes must gradually retrain to increase strength, coordination, and endurance so they can once againparticipate under competitive conditions. Therefore, the goal of this phase of the rehabilitation process must change from injury healing to recovery of athletes' full functioning. However, to achieve this goal, the sports injury rehabilitation program must be tailored specifically to each athlete's sport. For instance, Alex Fergusson, coach of the Manchester United soccer team, stated that "for the injured footballer, strength exercises should be functionally related movements, such as single-legged squats, jumps and polymeric drills" (Weinberg & Gould, 2010).

4. Conclusion

As mentioned above, sports injury rehabilitation has suffered major setbacks in the past due to a growing reluctance among injured athletes to participate in various rehabilitation programs and due to their insistence on home recovery. The rationale for sports rehabilitation is to assist athletes to regain their normal pain-free mobility. Sports rehabilitation characteristically begins with pain management and treatment by the administration of various programs by professionals who work in designated programs under the supervision of licensed physical therapists. The modalities used to provide pain relief and pain management include ultrasound, electrical stimulation, and the application of heat and/or ice. Rehabilitation should consist of a comprehensive recovery program that includes first aid, diagnosis, and treatment. Treatment should begin with first aid, and continue with diagnosis, treatment, alternative training, and full recovery. If injured athletes receive treatment based on appropriate recovery plans, they may return to the playing field sooner. However, the recovery process should be completed in a graduated manner to avoid recurrence of similar injuries.

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