Psychological Issues in Sport Injury Rehabilitation: Current Knowledge and Practice

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Objective: The importance of addressing psychological issues in athletic injury rehabilitation has been recognized by the medical community. When and how to address psychological ramifications of injury, however, have not been given sufficient attention.

Background: Various factors are associated with athletic injury: models of adjustment to athletic injury, a 10-point assessment inventory, and some techniques employed by sport psychologists to address psychological responses to injury will be discussed.

Description: The purpose of this paper is to outline specific guidelines to follow when assessing athletes and counseling them following athletic injuries. By implementing these guidelines, the athletic trainer can: 1) establish trust and rapport, 2) become familiar with the athlete's perception of the injury, and 3) attempt to get the athlete to commit to treatment.

Clinical Advantage: Often, athletes are treated for their physical complaints without giving attention to their psychological needs. These techniques can be used for athletes who have suffered an injury so that they may return safely both physically and psychologically to competition.

Key Words: psychology, interventions, rehabilitation, injury, sport

Most sports medicine practitioners are aware that a triumphant recovery from injury is as much a mental as a physical victory. In this sense, one must make careful estimates of the mind-sets and emotional needs of injured athletes to effectively return them to health and physical activity. Failure to do so may retard effective injury management strategies, if not preclude them entirely.[8] To this end, we introduce the reader to sport psychological research concerning athletic injury, warning signs specific to mental aberrations associated with sport injury, and interventions.

To illustrate some of the problems often associated with injury, Lynch[13] recalled an incident in which an injured patient expressed the following: "Life is absurd. Just when I begin to put it all together, I pull this muscle, I'm so depressed. Why me? Why now? I'll never be able to get to this place again. I'm so afraid I'll never fully recover. Is there any doctor who can help me to get going? The stress is unbearable, to say nothing of the physical pain itself. It's just not fair. I feel like dying. A terrible loss." Similarly, Weiss and Troxel[19] interviewed many athletes about their psychological responses to physical injury. This is what some had to say: "I couldn't deal with the reality of not being able to run. I couldn't even run to my car or to a class. It blew me away." A collegiate wrestler responded: "I felt like a low life. I didn't feel like I was part of the guys."

At the other end of the spectrum, some athletes are able to channel their competitive drive into their recovery. Still, it appears that the hardest thing for certain athletes to do is to slow down, listen to what their bodies are trying to tell them, and try not to progress too fast.[17] In these cases, the psyche may interfere with the rehabilitation process as it should be unfolding.

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PSYCHOLOGICAL ASPECTS OF ATHLETIC INJURY

As noted, a sport-related injury can often bring about certain psychological aberrations that prohibit the patient from recovering as planned. Such negative affective responses tend to be global in nature, as evidenced by elevations on multiple scales of the Profile of Mood States.[14,15,18] Conditions of concern may include psychological states and reactions such as general pain, stress/anxiety, exercise addiction, anger, treatment noncompliance, and depression.[2,5] Fear is another common reaction in injured athletes: that is, fear of not recovering, of reinjury, of losing positions, jobs, income, or family and friend support. Another common reaction is disbelief that an injury has occurred.[2,5] A recent review of sports medicine practitioners indicated that an athlete's psychological state before injury may affect how the athlete reacts to the injury.[4,5] For example, athletes who express anger in the athletic arena may be prone to becoming depressed after an injury and frustrated with their inability to carry out their anger.

Of additional importance, the psychological characteristics of athletes, as they relate to the perception and reaction to injury, may vary in such areas as level of self-esteem, trait anxiety, locus of control, self-efficacy, and motivation.[7,20] Various situational factors such as the nature and extent of injury, type of sport, time during the season when the injury occurred, and the perceived context of the injurious situation may mediate and influence an athlete's response to injury as well.[19] Moreover, some athletes' self-esteem and self-worth are often wrapped up in their bodies and their ability to perform with their bodies. This can become a major problem for an athlete whose entire identity is wrapped up in sports.[5]

MODELS OF ADJUSTMENT TO ATHLETIC INJURY

To provide a basis from which to conduct empirical investigations, several models have been proposed. Generally, these models fall into two categories: stage and cognitive models. Stage models hypothesize that an injured athlete responds to injury by sequentially passing through various stages before positive adjustment occurs. Essentially, it is speculated that injury constitutes a "loss" to which the person will respond with grief reactions similar to those of the terminally ill. The proposed stages are: denial, anger, bargaining, depression, and acceptance.[12] Although this model has intuitive appeal, the notion of a stereotypical pattern of distinct emotional responses to loss has not stood up to empirical scrutiny.[3] Foremost, it appears as if psychological reactions to injury are more global in nature and more varied across individuals than stage models would be able to predict or account for.

Cognitive models were developed in an attempt to account for individual differences. Notable here is the importance placed on how an individual *perceives* the injury, as opposed to the fact that it has occurred. As such, a cognitive model would take on the form as seen in Figure 1.

In this model, personal factors may include trait anxiety, self-esteem/motivation, coping skills, extroversion/introversion, psychological investment in the sport, and injury history. Situational factors are comprised of personal control over the injury, time of season, point in athletic career, pain, social pressures, type of sport, life-stress, duration of injury, and degree of sport performance impairment. The cognitive appraisal essentially asks: "What are you *thinking* in regard to the occurrence of this injury?" The emotional response, then, refers to what one is *feeling*, whereas the behavioral response deals with what the patient is going to *do*, ie, what are the behavioral rehabilitation consequences.

Although most studies have used retrospective and/or cross-sectional research designs to examine the claims of cognitive appraisal models in the domain of athletic injury, research findings to date suggest considerable promise for an approach that examines the joint influence of personal and situational factors on psychological responses to injury.[2]

Even though the cognitive model is one step closer to how individuals may actually respond to injury, it does not address the stress response as an antecedent to injury in any great detail. It is important to note that the stress response constitutes a bidirectional relationship between the person's cognitive appraisal of a potentially stressful situation and the physiological/attentional aspects of stress.[21] What this means is that athletes evaluate the demands of a particular situation, their ability to meet those demands, and the consequences of either failing or succeeding in meeting these demands. Any perceived imbalance between situational demands and personal response capabilities may result in anxiety reactions susceptible to altering the physiological/attentional aspects of the athlete.

Another shortcoming of the cognitive model is the inability to account for the mediating effects of psychological interventions. For the aforementioned reasons, a modified version of the Anderson and Williams'[1] model is proposed (Fig 2).

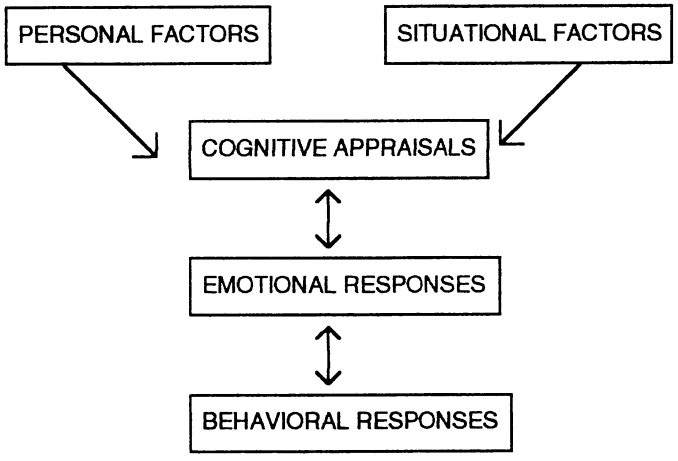

Fig 1. A cognitive model.

PATIENT ASSESSMENT

To more clearly determine whether psychological interventions may be needed, sports medicine practitioners should give some consideration to the following 10 questions as part of their patient screening process.

1. Do fear and anxiety prevent the patient from following the prescribed rehabilitation regimen?
2. Is the patient depressed beyond what seems reasonable for the type of injury sustained?
3. Is the patient lacking a support system; eg, is the patient experiencing feelings of isolation?
4. Is the reality of the injury, course of rehabilitation, and/or return to sport clouded?
5. Although all physical indications are such, is the patient not recovering as expected?
6. Does the patient choose to not adhere to the rehabilitation procedures?
7. Does the patient express a desire to return to practice before the sports medicine team gives their OK?
8. Does the patient not believe that he/she is able to recover fully?

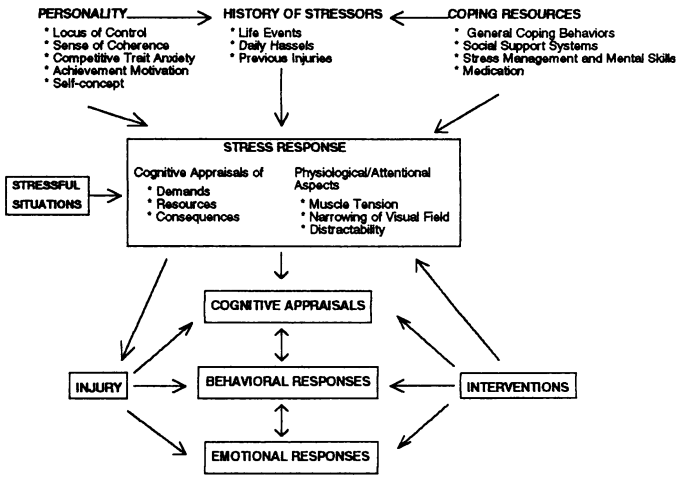

Fig 2. An interactional theoretical model of athletic injury (adapted and modified from Anderson/Williams[1]).

9. Is the patient "addicted" to exercise and unable to slow down as required?
10. Does the patient's self-worth seem "injured" as well? The presence of one or more of these psychological difficulties should be an indication to the sports medicine practitioner that some level of sport psychological intervention is warranted. It is recommended that medical personnel systematically use this 10-step checklist early in the physical rehabilitation process to promptly identify any psychological problems that the patient may be experiencing.

COUNSELING GUIDELINES

After receiving a referral, the sport psychologist's counseling will follow precise guidelines. However, before implementing any psychological interventions, the sport psychologist must first spend time with the patient in order to: 1) establish trust and rapport, 2) become familiar with the patient's assessment/interpretation of what has occurred, and 3) attempt to attain a commitment on the part of the patient. Consequently, the following steps are proposed:

Step 1. The Initial Consultation

The initial task is to gain an understanding of the patient's psychological status. It is crucial to *listen* to what the patient has to say. This initial consultation also functions to determine whether interventions designed to promote emotional adjustment are even necessary. Some of the essential questions are:

1. What events of note were happening in your life before the injury?
2. How did the injury happen?
3. What meaning have you assigned to sport involvement?
4. What meaning have you assigned to the injury?
5. What emotions do you feel now, as a result of the injury?
6. What are your fears about the future?
7. Who is affected by your injury?
8. If you were injury-free, how would life be different?

Step 2. Affect Management

Step 1 identified various affective issues. Now the emphasis ought to be shifted toward more in-depth identification, expression, and processing of those emotions that have surfaced in the patient as a result of injury. At this stage, the patient is also introduced to the process that the sport psychologist envisages to employ in an attempt to facilitate psychological rehabilitation.

Step 3. Facilitate Communication

Facilitating communication is geared to the patient's deriving an understanding of the nature, severity, and likely rehabilitation course of his/her injury. The communication of the medical team toward the patient should be clear and easily understood. That is, the patient should be able to fully understand the nature and severity of the injury. The rationale for treatment modalities should be understood as well. The key is to alleviate fear and uncertainty with regard to the patient's overriding question, "Now what?"[13,17,20]

Step 4. General Psychological Skills

Teaching general psychological skills to the injured athlete becomes the primary focus of the consultations at this point. The nature of the skills depends on what the information in steps 1, 2, and 3 has provided.

Step 5. Social and Emotional Support

Facilitating social support can be achieved through the sport psychologist, the sports medicine team, family, coach, peers, or even in group sessions. This is initiated in an attempt to ensure that the patient has an understanding that he/she is not alone and that successful rehabilitation and return to the original life-style is a true possibility.[6] The sport psychologist and physician should work in concert to stress the athlete's importance as a person and to maintain connection with the team, friends, family, and any other supportive entities.[19,20]

Step 6. Return To The Sport

An important consideration is whether the patient has the confidence necessary to return to practice and competition. It is not uncommon for athletes to experience anxiety and ask themselves, "Will I still be able to perform as I did before?" "Will I be reinjured?" At this juncture, it is important for the athlete to be able to discuss thoughts and feelings about returning to competition with a sport psychology practitioner. It becomes essential to systematically assess the athlete's level of readiness to return to sport. In this step, it is critical to alleviate any fears that may be lingering.[13]

INTERVENTIONS

Athletes invest a great deal of time and energy in the pursuit of optimal performance. Therefore, any severe injury is likely to be perceived as a traumatic life event with physical and psychological ramifications. The psychological interventions that address the troubling aspects of injury may provide a valuable adjunct to the athlete's physical rehabilitation.[21] Some interventions would include the following.

Cognitive Restructuring

Here, one focuses on replacement of any unproductive thinking patterns that may contribute to psychological distress. One might point out how the injury could allow the athlete time to rest and catch up on other important aspects of life that have been neglected, reevaluate priorities, and enjoy the absence of constant training and competition pressures.

Rational Emotive Therapy

The athlete often holds on to irrational belief systems. Rational Emotive Therapy strives to attack these irrational perceptions and unchecked assumptions and offers patients an opportunity to replace them with more realistic and productive thoughts.

Systematic Desensitization

The athlete is helped to gradually adjust his/her thinking to overcome fear and/or apprehension. This technique starts with smaller goals and works up to more complex ones. Essentially, this technique entails a gradual adjustment of perception.

Panic Mitigation

Give hope to the athlete and mitigate the anxiety and panic. Talk about the athlete's assets (positive things in his/her life) and mention how other athletes with the same condition have healed and made comebacks. Also ask the athlete to make the recovery process a challenge rather than a devastating blow.

Coping Rehearsal

A performance-enhancing audiotape can help the athlete overcome obstacles. Essentially, the athlete prepares for challenges ahead by developing a very detailed script that covers all the pertinent experiences associated with competition and/or injury. Then, this information is recorded onto a tape. This allows the athlete to focus on those issues that may present challenges and ways to successfully deal with these challenges.

Career Adjustment Techniques

In the event that the injury precludes returning to the sport, athletes receive individual or group counseling dealing with the issues of leaving the competitive arena. This process may involve coping strategies, self-esteem development, and other techniques aimed at avoiding an identity crisis.

Confidence Training

Here the individual is introduced to "volition" and the will to choose. Fundamentally, the athlete is taught that being confident is a choice that anyone can make. The athlete is made aware of the internal and controllable elements of confidence.

Positive Self-Talk

Once injured, athletes often engage in negative thoughts and self-defeating internal dialogue. Redirecting these thoughts and statements into positive, task-oriented thoughts and affirmations can help provide direction and motivation to the rehabilitation process.[11]

Thought Stoppage

Those athletes who seem to be bombarded with negative, self-defeating thoughts can be taught how to control these thoughts. The ultimate goal is to replace the negative thought patterns with positive affirmations.

Relaxation Skills

These skills can help the injured person cope with the stresses associated with injury. Relaxation can be attained by learning various skills, eg, breathing techniques or more physical relaxation skills such as progressive relaxation.

Imagery

This enables the patient to mentally practice those skills that may allow return to activities (eg, envision healing, pain management). Mental practice of physical and performance skills (mastery rehearsal) may also be used in the imagery sessions. Thus, motivation may be fostered if the athlete realizes that performance is facilitated by mental rehearsal during a time when he/she is unable to rehearse physically.[16]

Motivation

Motivating the injured athlete to adhere to rehabilitation programs is critical. Several techniques can increase motivation. One effective way is through goal setting. Here, athletes can be directed to channel their energies toward achievement of rehabilitation objectives, and a degree of control over their rehabilitation can be instilled.

Concentration Skills

Teaching how to focus on the skills required to achieve success (eg, become healthy again, decrease the probability of further injury) can be achieved by sequentially attending to those aspects most relevant at specific times in the rehabilitation process. Typically, this sequence would entail teaching the athlete to attend to cues that range from broad, general, and external areas to those that are narrow, specific, and internal.

CONCLUSION

We have presented general principles and examples from sound sport psychological theory and practice. Interestingly, those strategies that seem to work best are those geared toward the regulation of stress and fear in the patient. The individuals who recover as planned seem to have psychological profiles that facilitate recovery. Factors that have been shown to contribute to adherence to the rehabilitation regimen have included high levels of motivation, task involvement, pain tolerance, and perceived exertion.[9,10]

It is critical to the ultimate goal of recovery and return to competition that athletes be rehabilitated both physically and psychologically. Yet, most coaches, athletic trainers, and athletes lack both the knowledge and the skill concerning

psychological rehabilitation.[20] If cognitive, emotional, and behavioral manifestations associated with the injury lead the sports medicine practitioner to believe that the patient's progress is hampered, psychological intervention becomes a must. A timely referral to a sport psychologist allows for prompt management and relief from any undue emotional distress. Most of all, an immediate referral permits a timely handling of the existing psychological problems, can prevent further psychological complications, and fosters positive psychological states known to accelerate the healing process.

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