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The Psychological Responses To Injury In An Athlete: Suggested Treatment Plan for
Athletic Trainers and Physical Therapist

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The Psychological Responses To Injury In An Athlete: Suggested Treatment Plan for
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Injuries that force athletes to lose participation in their sport and or training have a tremendous impact on their mental health. Mental health issues can be detrimental, but often times go unnoticed. For example in 2010, Kenny McKinley, a wide receiver for the Denver Broncos, was found dead after killing himself with a gun. After suffering a knee injury, he had become progressively depressed. Investigators reported that there are statements saying that McKinley didn't know what he would do without football. According to NCAA's Sports Science Institute (2017), the psychological response to injury can trigger mental health issues such as: depression, anxiety, eating disorders, and substance abuse (Putukian, 2017). Common impacts of mental issues include a decreased desire to participate in every day activities and social activities, as well as feelings of stress, isolation, sadness, anger, and frustration. Injuries can also have an affect on an athlete's play because of their fear of re-injury.

Psychological effects of injuries among athletes are very important aspects to understand for physical therapists and athletic trainers. Just as a child looks at their parent to see how they should react to a fall on the playground, athletes look similarly to their trainers and support team. If those supporting the injured athlete have a positive outlook on the injury, then the athlete is more likely to have a similar view. It's critical that those supporting the injured athlete stay positive during recovery. Athletic trainers and physical therapists play an integral role in the psychological recovery from injury.

The primary purpose of this research is to identify mental health issues that injured athletes encounter. In addition, this review will examine the role physical therapists and athletic trainers have on the injured athlete. In conclusion, there will be a suggested treatment plan for physical therapists and athletic trainers to follow while working with an injured athlete that may have mental health issues associated with their injury.

Psychological Issues Involved With Injured Athletes

It is important to understand the positive and negative effects an injury has on an athlete's life. Athletes who are serious about their sport often times center their identity around it as well. Athletes commonly see themselves in terms of their sport, because it's who they are and what they do. Athletes are socially and emotionally attached to their position in their sport and it's how others see them.

Sports are also a major source of self-esteem for athletes. Their sport gives them feedback and reinforcements after working hard. When accomplishing new goals and skills involved with their sports, athletes feel a sense of satisfaction. When others compliment them on how well they are playing, athletes feel a boost of self esteem and feel good about themselves.

An unexpected injury can change the way the athlete identifies with their sport. It may lower their self-esteem for a period of time or permanently. It has been well studied that injuries can cause psychological issues. Athletes have a unique set of psychological issues related to injury, and there are several studies supporting them.

A study by Tracey, J. (2003) examines the emotional response to injuries among athletes. This study included 10 participants with a mean age of 21.1 years from two NCAA universities. Each participant had an injury that was moderate to severe, which kept him or her out of play. Researchers worked with the head athletic training staff to assist them with the study. Each participant was given an open-ended questionnaire along with an in depth interview at three different times, within 24-72 hours of the injury, at one week, and at week three of post injury. All of the interviews were taped and recorded, and reviewed multiple times for potential biases and assumptions of the interviewer. The open-ended questionnaire was also analyzed several times.

Following the first interview: dealing with the injury included a wide range of emotions. Participants reported feeling angry, depressed, down, afraid, confused, frustrated and worried. Some of the participants also reported having lower self-esteem. When the injury occurred participants reported feelings of helplessness and that they felt like they were a burden to others. Following the second interview, at week, one participants reported being fearful of missing practice, losing fitness, and not knowing how long they would be out of play. Many reported that attending practices was an emotional experience and being there reminded them of their loss. It also made them further believe that they were letting their team down and those factors led to anxiety, anger and depressed feelings. After the last interview, at week three, participants explained that talking about their emotions with someone was helpful. Those who were closer to returning to sport felt an improvement in feelings. They began to feel more confident in themselves, less tension, and a sense of freedom. Those who were still

battling their injury reported feeling lonely, alienated, and sad. They reported disappointment and discouragement (Tracey, J. 2003).

A study by Ruddock-Hudson M., O'Halloran P., Murphy G. (2014) explored the psychological reactions to injury by professional football players from Australia. Over the span of four months, 43 football players from 16 different teams were interviewed. Their age ranged from 18 to 36 years. Players of teams who agreed to participate were asked to describe an injury that they had suffered in the last 12 months along with an open-ended questionnaire asking about their injury experience.

The results of the interviews and questionnaires were broken up into five themes: that severity matters, there is a diversity of emotions, injuries' impact on involvement, the isolation and repetitiveness of rehabilitation, and lastly social support. They also reported that regardless of the severity of the injury they initially had a negative reaction. Players reported that they reacted less negatively to minor injuries than major ones because their predicted time out of sport was less. Wide ranges of emotions that were reported changed over time following the initial negative reaction. Players also reported that having other commitments such as school and work helped them take their mind off of their injury. Lastly players reported that the rehabilitation process was a long and lonely experience. Some reported that during this time they felt the most depressed they have ever felt in their life. They talked about how they no longer felt part of their team (Ruddock-Hudson M., O'Halloran P., Murphy G. 2014).

Another study by Tracey, McAllister, Bleecker, Heiden, and Jingzhen (2015) explored how athletes respond to an injury and specifically aimed at examining how much fear an athlete perceives on return to sport. The study included 350 athletes from

two Big Ten Division 1 Universities. All participants had suffered from a chronic injury and had either missed a game or practice. Participants were asked two questions to measure their fear they had about returning to sport and their fear of getting reinjured. The two questions that were asked were, “How much fear do you have now about returning to sports play?” and “How afraid are you now of being injured again?”

Researchers asked the athletic trainers of the participants to send a weekly injury report which included the type of injury, the time of the injury and when the athlete was cleared to participate again. After the participants returned to sport, researchers sent them the survey asking about their fear of returning to play. The survey was very short and easy to complete. They found that 36% of the athletes had a little fear between one and three, 15% had moderate fear between four and six and 7% had fear between seven and ten. Researchers also separated the data based on the severity of the injury. They found that the more severe the injury was, the greater their fear was of re-injuring themselves (Tracey, McAllister, Bleecker, Heiden, and Jingzhen 2015).

Impact of Emotional and Social Support on Injured Athletes

In addition to identifying the psychological effects of injuries on an athlete it is imperative to understand emotional and social support in facilitating recovery. A support system can encompass family, coaches, teammates, friends, athletic trainers, and physical therapists. This research focuses on the importance of athletic trainers and physical therapists. It is critical that they are equipped with this information so that they may apply it in their practice as well as educate others.

A cross sectional study by Lu and Hsu (2013), measured many factors influencing injured athletes' subjective well being. They also further looked at the interaction between their hope and social support. This study included 232 college student athletes with an average age of 20 years. The preliminary screening required that all participants had suffered from at least one type of sports injury. All of the data was collected while participants were receiving treatment for their injury. There were 32 participants whose injury lasted more than three weeks. There were 135 participants that were out for one to three weeks and 57 whose injury lasted less than a week. Researchers received all of their data from four different sports rehabilitation centers where the participants completed questionnaires and surveys. Participants completed 5 different surveys which included the following: Trait Hope Scale (THS) which assessed their hope of recovery, the Sports Injury Rehabilitation Beliefs Survey (SIRBS) that tested their judgment of treatment after their injury, Satisfaction with Life Scale (SWLS) that assessed their outlook on their lives, Positive Affective and Negative Affective Scale (PANAS) that assessed their degree of four different positive and negative affects they were feeling, and lastly the Multidimensional Scale of Perceived Social Support (MSPSS) that assessed how they perceived their social support.

Researchers found that the effects of hope and social support were substantial, and it predicted their mental well being with only a 4% variance. They also found that those with low hope had more reliance on social support to improve their well-being. (Lu & Hsu, 2013).

A second study by Tracey, J. (2003) was to examine the role of physical therapist and athletic trainers in psychological rehabilitation in injured athletes. The study included

18 full time physical therapist and athletic trainers from different clinics who work with injured athletes. Each health professional was interviewed and asked the same questions. The questions asked were based on clinicians and patients' therapeutic relationships, and their perceptions of the roles they have in psychological recovery.

After interviewing the participant's researchers broke the psychological recovery into three categories: rapport building, educating, and communicating. Rapport building included physical therapist and athletic trainers being able to deal with different personalities and first getting their athlete to "buy in." The next step is educating the athlete by explaining the anatomy of the injury and then addressing the emotional effects of being injured. Physical therapists and trainers must try to reduce the athlete's fear of re-injury and recovery process. Following that, they should explain to them the different treatment options available. Lastly they should try to learn more about the injured athlete than just their injured body part and help them build their confidence. It is important that physical therapists and athletic trainers have a good balance of understanding and realism (Tracey, J. 2003). See figure one.

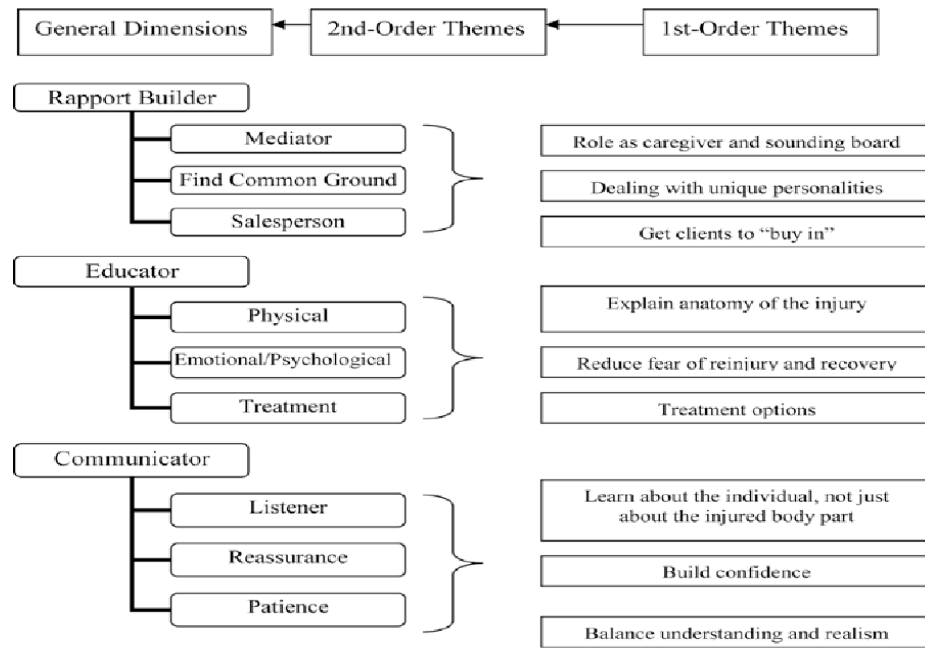


Figure 1. Model depicting the raw data themes, second order themes, and general

Tracey, J. (2003)

A third study by Yang, J., Peek-Asa, C., Lowe, J. B., Heiden, E., & Foster, D. T. (2010) examined the change in social support patterns before and after injury. This was an observational study that included 260 athletes from the Big Ten Conference. Thirteen sports were represented. The study was based off of a six-item social support questionnaire. Data from pre and post injury were analyzed and compared.

The study found that athletes social support patterns changed after being injured. Injured athletes reported that after becoming injured they relied more on coaches ($P=.003$), athletic trainers ($P=.0001$), and physicians ($P=.003$) for support. They also reported that they had a greater injury satisfaction when health care providers supported them. It is interesting to note that male and female athletes had different support patterns before and after injury. Both relied on athletic trainers but unlike males, females had a higher satisfaction with social support from friends ($P<.0001$). Researchers found that

athletes need emotional support during injury recovery. It is critical for physical therapists and athletic trainers to have the right type of support at the right time, as athletes change over time during recovery (Yang, J., Peek-Asa, C., Lowe, J. B., Heiden, E., & Foster, D. T. 2010).

Techniques Physical Therapists and Athletic Trainers Can Use to Support Injured Athletes

In addition to caring for the physical part of the injury, athletic trainers and physical therapists should recognize the impact they have on the injured athlete. They must learn techniques to implement during the recovery process. A study by Zakrajsek, R. A., Fisher, L. A., & Martin, S. B. (2016) examined how trainers can use psychology in their practice. This study included nine athletic trainers who had an average of 11 years of experience in their field. The researchers conducted a qualitative study asking the athletic trainers questions about their experiences and perceptions about sports psychology.

Through consensual qualitative research procedures, three major domains were constructed. The first domain was the recognition of common psychological challenges of injury rehabilitation, the second one was knowledge and understanding of sport psychology and the last one is the utilization of sport psychology skills and strategies for rehabilitation. They also discussed: the importance of trainers and injured athletes' relationships, importance of normalizing the recovery process with the athlete, goal setting, reassurance, connecting rehabilitation to game like skills, intentional focus, self talk, and anxiety management. Although athletic trainers already use basic psychological

strategies the findings show that they need an interprofessional team approach to enhance psychological recovery (Zakrajsek, R. A., Fisher, L. A., & Martin, S. B. 2016). See figure 2.

Figure 2.

| Domains/Categories | Illustrative core idea | Frequency |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Domain 1: Recognition of the common psychological challenges of injury rehabilitation | | |
| (a) Self-doubt | Injured athletes experience self-doubt about their ability and position on the team. | General |
| (b) Re-injury anxiety | Injured athletes experience fear of re-injury, especially when doing the same move as when they got hurt. Injured athletes overanalyze how their body feels (e.g., distinguishing pain from injury) which led to difficulty in trusting their body. | General |
| (c) Loss of identity | Injured athletes experience a loss of identity due to separation from the team and lack of attention from coach; they no longer feel like a contributor to the team. | Typical |
| (d) Stages of grief | Injured athletes experience emotions that align with the stages of grief. When athletes are first injured they experience denial; frustration and anger are experienced most often by injured athletes throughout rehabilitation. | Typical |
| Domain 2: Knowledge and understanding of sport psychology | | |
| (a) Limited sport psychology knowledge | ATs reported limited education in sport psychology; their understanding of sport psychology was minimal. | Typical |
| (b) Perceived as a mental tool | Sport psychology is a mental preparation tool used to help athletes be prepared for challenges, cope with pressure, and enhance performance. | General |
| Domain 3: Utilization of sport psychology skills and strategies for rehabilitation | | |
| (a) AT-athlete relationship | The unique AT-athlete relationship is built on trust and providing a safe environment. Rehabilitation effectiveness is enhanced through listening, being a sounding board, using manual therapy, and playing the role of a positive person. | Typical |
| (b) Normalizing the recovery process | ATs normalize injury recovery through education and keeping injured athletes integrated and around the team. | Typical |
| (c) Goal setting | ATs use short- and long-term goals that are quantifiable and achievable to help injured athletes see progress and feel a sense of accomplishment. | Typical |

| | | |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| (d) Reassurance | ATs use reassurance to build athletes confidence that they are progressing and ready to return to performance. | Typical |
| (e) Connecting rehabilitation to game like sport skills | ATs make rehabilitation game like by connecting athletes with actual implements and skills related to their sport. This served to decrease anxiety and increase confidence in return to sport. | Typical |
| (f) Attentional focus | ATs try to keep injured athletes focused during rehabilitation; ATs used cue words to help athletes focus. | Typical |
| (g) Self-talk | ATs try to change injured athletes negative thoughts into more positive ones about their injury and rehabilitation. | Variant |
| (h) Arousal/anxiety management | ATs try to help athletes manage their anxiety and arousal by telling them to calm down• or by using breathing techniques. | Variant |
| (i) Visualization | ATs use visualization to help injured athletes see success and to train the mind-body connection. | Variant |

Zakrajsek, R. A., Fisher, L. A., & Martin, S. B. (2016).

The purpose of another study by Evans, L., & Hardy, L. (2002) was to determine if goal setting might play an important role in the rehabilitation in injured athletes. The study included 77 injured athletes from two different sport clinics. Participants were assigned to one of three groups: the experimental group, who received a goal setting intervention, a social support control group and an additional control group. The goal setting group met with a psychologist every seven to ten days. During this time they focused on goal setting based on feedback from the physical therapist and participant. The participants in the social support control group met with a sports psychologist every seven to ten days just as the goal setting group did. During these sessions the psychologist acted only as social support. The psychologist listened to the participants and emotionally supported them. In the control group the psychologist called the participants every ten days, reminding them to record in their training log of the nature of

rehabilitation activities they had completed. The physical therapists in this study were blind to what group each participant was in.

The results showed that the use of goal setting in injury rehabilitation is significant. The goal-setting group reported having a higher self-efficacy than the other two groups. Self-efficacy was perceived to determine the amount of effort invested in rehabilitation and persistence in the face of obstacles. Social support did play an important role in rehabilitation, but goal setting was most significant (Evans, L., & Hardy, L. 2002).

A third article reviewed was a consensus statement titled the Psychological Issues Related to Injury in Athletes and the Team Physician (2006). The purpose of this article was to help team physicians understand the psychological issues related to injury. There were six major organizations involved in making this article. The organizations involved was American Academy of Family Physicians, American Academy of Orthopedic Surgeons, American College of Sports Medicine, American Medical Society for Sports Medicine, American Orthopedic Society for Sports Medicine, and the American Osteopathic Academy of Sports Medicine.

It is essential that health providers first recognize that psychological factors play a role in sports injuries. It is important to understand know that these factors can be problematic, which in turn can impact the recovery process. Warning signs of athletes adjusting poorly to injuries include unreasonable fear of re-injury, denial of injury, withdrawal from others and extreme guilt of letting the team down. Strategies should be developed to address psychological factors of injuries by providing supports services as needed, and educating the athlete. The level and types of emotional reactions change over

time following the initial injury. While treating an injured athlete there are a number of factors that play a role. Healthcare providers must first build trust and rapport with the injured athlete. Then they can educate the athlete on their injury. They should also identify the misinformation about the injury, meaning discrediting inaccurate information they may have received from coaches, parents, the Internet and teammates. Then they must educate the athlete on the injury recovery process. Following that they should encourage and educate the athlete on different coping skills to use for stress involving the injury. Physical as well as psychological strategies will help the recovery process (Psychological Issues Related to Injury in Athletes and the Team Physician 2006).

Treatment Guide On Working With Injured Athletes:

After reviewing many studies and research articles, here is a general guide for athletic trainers and physical therapists to follow as they help their injured athletes with social and emotional support issues that may arise.

When treating an athlete after injury, the therapist should empathize with the individual in regards to their injury. Let them know that early on in the recovery process they will not be able to do many things they may be used to doing. Tell them they will be in pain at times and may feel down, sad, and or lonely. Therapists should let them know that these are normal reactions to injuries and that they are okay to a certain point. Although these reactions to injuries are normal, they should tell them how important it is to remain positive and upbeat because negative emotions may create bigger problems and could slow down their recovery.

According to the director of athletic medicine at Princeton University, many athletes view seeking help for mental health issues as weakness, so it is common for them to try to hide their feelings inside. (Site) It is important for therapists to be aware of hidden signs and symptoms of mental health issues such as depression, and have resources ready to treat them. Therapists should also educate the athlete on these signs and issues and emphasize how important it is to get help if needed. Including themselves, therapists should provide information on where to go for help if needed and encourage them to do so (Putukian, M. MD 2017).

Therapists can also provide motivation for recovery by asking patients about their sport goals and setting small, attainable goals that align with them. As new goals are hit, highlighting and encouraging growth can make them feel they are progressing and can help reduce their fear and stress. Physical therapists and athletic trainers should then stress the importance of their rehab program and explain that at times the exercises might become monotonous, but failing to do them could lead to a slower recovery, which in turn may create more issues.

There are many different coping techniques that therapists can use to help injured athletes. One is to teach them about their injury, which could help with alleviating their fear and anxiety. Another important thing is to have a positive attitude while working with them and encourage them to have one as well. It's important to urge them to stay involved with their sport as much as possible. Being around their sport can be very beneficial in the fact that it can help combat issues such as isolation and separation.

Conclusion:

Every day an athlete participates in sport, they are putting themselves at risk of injury. Injuries can be terrifying, affecting all areas of an athlete's life and can affect their play when they return. Support from athletic trainers and physical therapists are very important in helping lessen the impact of an athlete's response to injury. According to Tracey, J. (2003) social support is a key factor in dealing with injured athletes. Athletic trainers and physical therapists have an integral role in successful recoveries among athletes. The studies found that an athlete's response to injury can result in a wide range of emotions, including being angry, depressed, afraid, confused, frustrated, worried and fear of returning to sport. Injuries have the possibility to cause athletes to hit rock bottom. "Injuries can be traumatic for athletes, and if therapists aren't addressing it from a multidimensional view, it's a disservice to our athletes and can lead to further injury (Mirgain, PhD., 2015)." The rehabilitation process is a key time for physical therapists and athletic trainers to guide athletes and help them overcome mental health issues and fears of re-injury. Picabo Street, an Olympic skier, after suffering a serious knee and leg injury said, "I went all the way to rock bottom. I never thought I would ever experience anything like that in my life. It was a combination of the atrophying of my legs, the new scars, and feeling like a caged animal."

Injuries can elicit depression like the Olympic skier Street, or suicidal thoughts like Denver's wide receiver McKinley. Injuries can be very different between each individual, but it is safe to treat them all initially as if they're as serious as McKinley's.

Dr. Shiliagh Mirgain stated, "Recovering from a sports injury involves more than healing an athlete's physical pain." It is important that an athlete's psychological state is healed after completing rehab and before returning to sport (Mirgain, PhD., 2015).

Limitations And Further Research

It would be interesting for future studies to look at the stress and emotional factors that athletic trainers and physical therapists deal with while working with injured athletes. Athletic trainers and physical therapists may be under a lot of stress due to the pressure of getting injured athletes back to play. Athletes, coaches and parents of the injured athletes put a lot of pressure on athletic trainers and physical therapists. If they are feeling stressed this could hinder their effectiveness in treating the athlete. Both the athlete and athletic trainer or physical therapist must be on the same page and open to working with one another with a clear mind.

Limitations to some of these studies would be that they were cross sectional studies and the effects of injuries on athletes may change over time. Another limitation is that most of the studies were done on college athletes around the age of 20. It would be interesting to look at younger and older athletes to see if their reactions are the same. The seriousness of the sport in a younger athlete's life may elicit less intense responses. There needs to be more studies looking at how the initial injury may need instant emotional attention, but after they've been injured for some time they may need more informational support.

Assessing emotions are difficult because studies usually use subjective questionnaires and surveys. The accuracy and effectiveness of this method can vary on how the athlete is feeling that day.

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