



Prevalence and Effect of Psychological Intervention during Sport Injury Recovery

A Focus on Amateur Athletes

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Depression and other social and emotional symptoms are recognized complications of sport injury (Brewer, Jeffers, Petitpas, & Van Raalte, 1994; Podlog, et al., 2013). With more than half of America's youth participating in organized sports, research to support positive recovery practices is more important than ever (Healy, 2013). It has long been established that sport injuries transcend the physiological complications and effect other aspects of the athlete's life including their mental health (Brewer, Jeffers, Petitpas, Van Raalte, 1994). When participation is stopped suddenly due to acute injury, the athlete's stress outlet, social support, and self-determination are as well (Podlog, et al., 2013). Because the complications of sport injury are recognized as going beyond the physiological side effects, the question then becomes to what degree should helping professionals (psychologists, counselors, etc.) assist in approving athletes to return to participation (return-to-play protocol)? Should psychological factors be considered regarding return-to-play? And who among the many supporters of young athletes (i.e., parents, coaches, athletic trainers, nurses, school counselors, etc.) should be deciding protocols for psychological intervention during sport injury recovery?

The following is a compilation of research surrounding current return-to-play practices with an emphasis on the social and emotional support available and effects of this support.

INTRODUCTION

Sport involvement has long been identified as a beneficial extracurricular activity, especially among adolescents, with positive outcomes such as social support and increased academic achievement cited in the literature (Broderick & Blewitt, 2015; Jewett, et al., 2014). Sport participants understand that injury and recovery time are possible complications of their active lifestyle. These injuries not only impact the physical but also the social and emotional aspects of the athletes' lives. While athletes and parents expect the occasional scraped elbow or bruised knee, more severe sprains, strains, fractures, concussions, and even cardiac episodes occur during amateur sport practices and competitions (Stanford Children's Health, 2018). These more serious injuries require medical attention and result in loss of participation time during recovery (Podlog, et al., 2013; Pryor, et al., 2015; Sepúlveda, Sánchez, Amy, & Micheo, 2017). While the physiological repercussions of such injuries are well researched and documented among young athletes, the psychological impact of the recovery process needs further research and empirical evidence (The Association for Applied Sports Psychology, 2015; Brewer, Jeffers, Petitpas, & Van Raalte, 1994; Reese, Pittsinger, & Yang, 2012). With more than fifty percent of America's youth at daily risk for life-altering injuries (Healy, 2013) there is an overwhelming need to provide mental and emotional support during recovery.

Research into the psychological processing of sport injury recovery has been primarily focused on elite level athletes (Arvinen-Barrow, et al., 2015; Walker, Thatcher, & Lavalley, 2007). However, it is reasonable to conclude that adolescents would have more mental and emotional symptoms from sport injury; as developmentally, adolescents go through tremendous physiological and psychological changes (Broderick & Blewitt, 2015). Erik Erikson's developmental theory notes that adolescence is a time for identity crisis (Broderick & Blewitt, 2015). Athletics is only one piece of a youth's identity, however, for some youth it is a large piece of that identity (Carchia, 2013). In their study, ESPN demonstrates how prevalent an athletic identity is to students in third to twelfth grades (Carchia, 2013). Forty percent of middle school girls reported that sports are a big part of who they are. Boys peaked earlier with 70% of third to fifth graders reporting sports are a big part of their identity with high school as the lowest time at 53% (Carchia, 2013). Support for youth during this time of identity formation is critical to assist their positive identity development (Broderick & Blewitt, 2015).

Sport participation is a popular activity in the US and around the world. The following section explores the risks associated with youth sport participation.

SPORT INJURY TYPES AND PREVALENCE

In order to understand the need for psychological intervention in sport injury recovery, it is first important to appreciate the prevalence and impact of sport injuries. This review concentrates on injuries to young athletes (through grade 12). While references to studies that did include elite athletes and collegiate athletes are made, the focus will be on youth amateur participants who have less access to resources (Arvinen-Barrow, et al., 2015; Pryor, et al., 2015).

In the United States 30 million youth participate in organized sports each year. Of that 30 million, 3.5 million incur injuries that result in a loss of participation time, and 775,000 are treated in an emergency room (Stanford Children's Health, 2018). Fifty percent of these injuries require more than 7 days to recover and 20 percent of these injuries require more than 22 days to recover and return to play (Centers for Disease Control, 2006). Generally, sports injuries fall into one of two categories: contact or trauma injuries (acute) and overuse or misuse injuries (chronic) (Podlog, et al., 2013; Stanford Children's Health, 2018). Among children and adolescents, girls have a higher incidence of injury, specifically concussions and anterior cruciate ligament (ACL) tears (Sepúlveda, Sánchez, Amy, & Micheo, 2017), however, in psychological research there is no statistically significant difference between males and females when considering the effectiveness of intervention (Arvinen-Barrow, et al., 2015). According to the CDC, boys football has the highest rate of injury when considering practice and competition. Girls' soccer has the highest rate of injury for female sports (Centers for Disease Control, 2006).

The Youth Sport Safety Alliance (2017) reports that high school football players are three times more likely to incur a traumatic injury as their collegiate counterparts. Yet, only 42 percent of public high schools employ a certified athletic trainer (Pryor, et al., 2015). 62 percent of youth sport injuries take place during practice as opposed to competition. While sport injuries are not so rampant as to require an incredibly low athlete-to-trainer ratio, the ratio is often high enough to limit the availability of treatment and recovery support (Pryor, et al., 2015). This leaves coaches and parents to monitor recovering athletes. They, while experienced and knowledgeable about their sports and children, are not typically trained to provide medical care or psychologically evaluate an athlete's state of mind during recovery (Arvinen-Barrow, et al., 2015).

The following section evaluates how athletes are assessed after injury to return to play and compares the existing physiological and psychological requirements for athletes to return to sport participation.

PHYSIOLOGICAL IMPACT OF SPORT INJURY AND PARTICIPATION IMPACT

Return-to-play protocols are defined as a collection of requirements that must be met by an athlete before they can return to sport competition. This can include fading of symptoms, functional testing, and sometimes emotional readiness information gathered using questionnaires (Podlog, et al., 2013; Sepúlveda, Sánchez, Amy, & Micheo, 2017). Three stages are recognized, though no discrete timeline exists for any specific injury let alone generalized sport injury: first, the time between the injury and medical clearance to begin participation; second, the period between medical clearance, when the athlete begins sport specific training, and the time they return to competition; and the final stage is the athlete's return to competition (Arvinen-Barrow, et al., 2015; Podlog, et al., 2013).

Concussion research and media coverage of NFL and NHL players who died highlight return-to-play practices. There is evidence of chronic traumatic encephalopathy (CTE) in several prominent athlete's brains postmortem (James, Head Games). Research suggests this condition is linked to depression, aggression, early onset dementia, suicidal ideation and completion, mood swings, and other mental and emotional symptoms (Gaetz, 2017). While the mental/emotional implications of repetitive concussions are clearly outlined, return-to-play protocols for these injuries rarely require any kind of psychological evaluation (Reese, Pittsinger, & Yang, 2012; Sepúlveda, Sánchez, Amy, & Micheo, 2017).

While a concussion changes the physiology of the brain, and it is logical that a concussion would cause psychological changes, research by Walker, Thatcher, and Lavalley (2007) shows that tension, anger, depression, and frustration are common side effects of any type of sport injury. To follow suit, few practitioners (medical doctors, physical therapists, athletic trainers, etc.) evaluate the mental and emotional readiness of the athlete prior to return to play (Arvinen-Barrow, et al., 2015; Reese, Pittsinger & Yang, 2012).

Return-to-play protocols are most commonly associated with concussions (mild traumatic brain injuries) and are recognized for their influence on professional play as well as youth participation in sport (James, Head Games). Concussions are unique in that, while some are severe or enduring enough to require the care of a physician, they are considered "invisible injuries" and are sometimes only monitored by coaches, parents, and the athletes themselves (Love & Solomon, 2014). For minor injuries (those which do not require extended care by a physician) return-to-play policies are often left to the discretion of parents, coaches, and athletes who are often highly motivated to return as soon as possible (Podlog, et al., 2013).

PSYCHOLOGICAL IMPLICATIONS OF SPORT INJURY AND RECOVERY

The above section reviewed return-to-play practices and rates of injury which establishes the need to discuss the psychological impact of sport injury. Implications of sport injury and the rehabilitation process include depression, decreased self-esteem, identity crisis, perceived loss of social support, feelings of hopelessness, and many other emotional and mental difficulties (Podlog, et al., 2013; Walker, Thatcher, & Lavalley, 2007; The Association for Applied Sports Psychology, 2015; Webster, 2014). Furthermore, these difficulties can lead to social stress, compromised academic achievement, and social and emotional withdrawal (The Association for Applied Sports Psychology, 2015).

Research on Australian teens (Podlog, et al., 2013) found that stress of the injury, coping strategies, social support, and the outcome of the recovery process are the four main themes that arise when discussing injury and recovery. Podlog, et al., based their research on the basic psychological needs mini-theory and the self-determination theory. These theories provided a lens through which to view each athlete's experience. Their participants reported feelings of isolation, frustration, and hopelessness throughout all three stages of sport injury recovery (discussed above).

The cycle continues in a merciless fashion by affecting athlete's academic success, social and familial relationships, and challenging their identity (Podlog, et al., 2013; Webster, 2014). As discussed earlier, identity formation characterizes the stage of adolescence. Youth with strong ties to an athletic identity may experience feelings of disconnection, loss, confusion, and question who they are as a person apart from their athletic identity (Broderick & Blewitt, 2015; Walker, Thatcher, and Lavalley, 2007). Moreover, the stress of the injured athlete has been shown to affect the team as a whole (Podlog, et al., 2013).

CURRENT PSYCHOLOGICAL INTERVENTIONS USED IN SPORT INJURY RECOVERY

Some psychological skills currently used in sport injury recovery include goal setting, visualization, stress-management, and relaxation techniques (Reese, Pittsinger, & Yang, et al., 2012). While there were significant decreases in negative thoughts or increases in positive thoughts when psychological interventions are used, no study has found one technique to be significantly more effective than another (Reese, Pittsinger, & Yang, et al., 2012). Essentially, when interventions have been introduced into the recovery process, they may require slightly more time, but they have not caused any harm.

In regard to who should implement psychological interventions, the research recognizes that there is no clear answer as of yet. Though it does cite that when psychological skills are used during recovery, they are most likely introduced by a physical therapist or athletic trainer. In our world of ever-increasing specialties within specialties, sports psychology is emerging as a field necessary to high level athletic programs (Arvinen-Barrow, et al., 2015). While it is possible to seek out independent clinical sports psychologists, it is most common for their services to be available to elite and some collegiate athletes, and even then, sparingly (Arvinen-Barrow, et al., 2015).

LIMITATIONS AND OPPORTUNITIES FOR SPORTS PSYCHOLOGY

While this discussion points out the advantages of having competent professionals for psychological intervention during sport injury recovery, the author recognizes it is not practical at this time to employ sports psychology specialists at each high school or for each sports team. The field of sports psychology is still emerging and collegiate programs are still in the process of integrating these professionals into their athletic departments (Arvinen-Barrow, et al., 2015). While the time will come that access to clinical sports psychologists will be necessary at the high school and youth levels, schools currently struggle to employ nursing staff, athletic trainers, and classroom teachers at livable wages (Pryor, et al., 2015).

A more practical solution would be to require coaches to participate in some kind of training regarding the advantages of emotional support during injury recovery including basic application principles. However, this training would also have limitations regarding resources, access, and cost, which could deter vital volunteers from assisting with youth teams.

With regard to research, general limitations include access to young injured athletes, quantity of participants available at any time, innate personality differences amongst any participants, and the sheer variance in sport injuries, severities, and recovery times. Like several studies referenced in this discussion, participant numbers in any given study would likely be small, reducing the ability to validate the research findings for any general population. Considering these variables, research in this area seems a daunting task.

CONCLUSION AND FUTURE RESEARCH

Sports injuries are pervasive in amateur sports. While prevention efforts and research are vital to stop these life-altering episodes, research relevant to the psychology of the recovery process is equally as important. Accidents are inevitable, but the response to these accidents can be altered to foster a positive recovery experience (Reese, Pittsinger, &

Yang, 2012; Walker, Thatcher, & Lavalley, 2007).

The evidence shows that sport injury and the recovery process can have significant detrimental effects on the adolescent psyche (Arvinen-Barrow, et al., 2015; Brewer, Jeffers, Petitpas, & Van Raalte, 1994; Webster, 2014). Further research is needed to assess the following: if and how intentional emotional intervention from a helping professional would be productive for injured athletes, if there is a specific technique, training, or type of professional that is most effective, and whether or not requiring psychological standards to be met during return-to-play protocols would be positive additions. For the time being, it is important to recognize that sport injury and rehabilitation impacts the emotional and mental state of all athletes and that there are potential mental techniques and strategies to incorporate into a recovery plan.

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