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## APPLIED PSYCHOLOGY | RESEARCH ARTICLE

# Restoration of confidence and perception of coaches following sports injury

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**Abstract:** The cognitive response is an important component of the psychological recovery from athletic injury. This study was aimed to investigate changes in the psychological readiness to return to sport among injured athletes and to assess how athletes' confidence is perceived by their coaches. Participants were 13 athletes, aged between 15 and 34 years ( $M = 20.7$ ,  $SD = 6.0$ ) who practiced team sports. All participants completed the Spanish version of the Injury-Psychological Readiness to Return to Sport Scale (I-PPRS) at four time intervals during the injury recovery process. Coaches responded the I-PPRS before returning to competition and after competing again. Results showed that the athletes' confidence was lower immediately after suffering the injury and increased significantly before practice, before competition and after competition. Athletes' perceptions of confidence before and after competition did not significantly differ from perceptions of their coaches. The findings indicate that coaches are aware of the confidence levels of athletes recovering from injury.

**Subjects:** Sports Psychology; Sports Injury; Sport Psychology

**Keywords:** athletic injury; self-confidence; recovery

### 1. Introduction

Returning to sport participation following athletic injury can be a stressful process which involves not only physical loss but also psychological loss. Returning athletes may experience tension, low self-esteem, depression, or anxiety following injury and during rehabilitation (Ardern, Taylor, Feller, & Webster, 2013). Accordingly, there has been an increasing interest on the psychological processes involved in returning to sport activities (Abenza, Olmedilla, Ortega, & Esparza, 2011).

Return to competition involves a set of stages, where physiological, especially rehabilitation or medical treatment, and psychological variables play a key role. The optimal recovery for returning

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Ricardo de la Vega is an associate professor at the Department of Physical Education, Sport and Human Movement, Autonomous University of Madrid. His main research interests include sport and exercise psychology (high performance, talent development, physical education and health). His recent research topics are related to athletes and emotional responses, psychophysiological response with soldiers in combat context and the psychological response in anxiety context with soccer referees.

### PUBLIC INTEREST STATEMENT

Returning to sport participation following athletic injury can be a stressful process which involves not only physical loss but also psychological loss. Returning athletes may experience tension, low self-esteem, depression, or anxiety following injury and during rehabilitation. Accordingly, there has been an increasing interest on the psychological processes involved in returning to sport activities. The current study attempts to investigate changes in the psychological readiness to return to sport among injured athletes and analyze how athletes' confidence is perceived by their coaches into the soccer context.

into competition does not end with the physiotherapeutic rehabilitation process (Magyar & Duda, 2000; Rubio, Pujals, De la Vega, Aguado, & Hernández, 2014). A successful return to sport requires being able to regain levels of technical skill and psychological confidence (Evans, Hardy, & Fleming, 2000; Lentz et al., 2015; Podlog & Eklund, 2009).

Among the most influential factors for returning to competition is the athletes' perception of whether they are ready (Ardern et al., 2013; Czuppon, Racette, Klein, & Harris-Hayes, 2014). Consequently, confidence beliefs about returning to full participation play a key role in the sport comeback after an injury. Researchers had found that a return to competition before the athlete is psychologically ready may lead to anxiety, fear, re-injury, depression and, consequently, a decrease in performance (Heil, 1993; Quinn & Fallon, 1999).

A few years ago, Glazer (2009) developed the *Injury-Psychological Readiness to Return to Sport Scale* (I-PPRS) to specifically measure confidence within sport injuries. His research highlighted the need to be psychological ready for full recovery, and the importance of restoring confidence beliefs about capabilities to perform successfully prior to returning to full competitive involvement. Considering that confidence and psychological readiness had not received enough attention following injury, the present study was aimed to investigate changes in the psychological readiness to return to sport among injured athletes using the I-PPRS. Coaches, as individuals working in close contact with athletes, have a significant impact upon injury recovery effort (Bianco & Eklund, 2001). Thus, a second purpose of our research was to assess how athletes' confidence is perceived by their coaches.

## 2. Method

### 2.1. Participants

A total of 13 athletes, with an age range from 15 to 34 years ( $M = 20.07$ ,  $SD = 6.0$  years) volunteered for the study. All participants competed in team sports: soccer ( $n = 5$ ), handball ( $n = 4$ ), field hockey ( $n = 2$ ). Athletes were informed of the voluntary nature of their participation and were assured that all answers would be confidential. Permission of the institutional ethics committee was obtained and all participants provided informed consent prior to participation. The inclusion criteria required each participant to sustain an athletic injury that prevented regular training with his team for at least one week, in compliance with the criterion established by Glazer (2009). Physically recovery time was estimated from one to three weeks ( $M = 2.69$ ,  $SD = 1.03$ ).

### 2.2. Scale adaptation

The translation of the scale items was carried out following a reverse translation design by two native English translators and two Spanish native translators. The translation quality was judged by the degree of agreement with the original version (Hambleton, 2005).

### 2.3. Instruments and procedure

All participants answered a demographic questionnaire, in which they were asked questions related to their sport background, and the Spanish version of the I-PPRS. This scale assesses the athlete's level of self-confidence and psychological readiness to return to competition after being injured, and was specifically developed for the sport context (Glazer, 2009). The scale has six items; the subjects are asked to rate their level of confidence in a response scale ranged from 0 to 100 with intervals of 10, implying that "0" means little to no confidence, "50" moderate confidence and "100" very confident. Total scores are obtained from the sum of the six items. The I-PPRS had to be completed by the athletes at four different time intervals within 24 h after the injury, before returning to training, before returning to competition and after that first competition. Their coaches had to complete the scale in the last two stages, before and after the player returned to competition.

**Table 1. Descriptive statistics, mean, standard deviations and Cronbach's alpha coefficient of the athletes' I-PRRS scores along the four time intervals of the study**

Time interval	Mean (SD)	$\alpha$
After injury	14.23 (10.36)	.88
Before practice	44.23 (9.36)	.91
Before competition	52.31 (5.93)	.90
After competition	55.31 (5.98)	.94

**Table 2. Comparison of the athletes' I-PRRS scores along the four time intervals of the study**

Time interval	Z	p	Cohen's d
After injury–Before practice	–3.181	.001	3.039
After injury–Before competition	–3.183	.001	4.511
After injury–After competition	–3.183	.001	4.857
Before practice–Before competition	–2.988	.003	1.031
Before practice–After competition	–3.062	.002	1.411
Before competition–After competition	–2.825	.005	.504

### 2.4. Data analysis

Descriptive statistics were calculated for all variables. Reliability of the I-PRRS was calculated throughout the Cronbach's alpha coefficient for each of the four time intervals. Repeated measures non parametric Friedman's test was calculated to analyze possible differences in I-PRRS values across time. If differences were detected a Wilcoxon signed rank test was calculated. Differences between athletes and coaches scores were analyzed using the Mann-Whitney test. Significance level was set at .05. Effect sizes were reported by Cohen's *d* (Cohen, 1988). Statistical analysis was performed using the SPSS (19.0; SPSS Inc. Chicago, IL).

### 3. Results

To provide preliminary evidence of scale reliability, Cronbach's alpha coefficients were computed for each of the four time intervals (Table 1). Data obtained indicate that all coefficients were greater than .70, and could be considered as good measures of internal consistency (Nunnally, 1978).

Descriptive data for athletes' I-PRRS scores at each time interval are also presented. To determine whether there were differences among the four intervals in which the athletes were assessed, a mean difference analysis for several related samples using Friedman's test was performed. The results showed the existence of significant differences in I-PRRS scores between periods ( $\chi^2 = 36.24$ ,  $p < .001$ ). Wilcoxon signed-rank revealed that confidence levels significantly increased before returning to practice, and increased also occurred from before practice to before competition and from before competition to after competition (Table 2).

The comparative analysis of the athlete's perception of confidence versus that of their coaches before competition ( $M = 48.15$ ,  $SD = 10.62$ ;  $Z = -.87$ ,  $p = .38$ , Cohens'  $d = .483$ ) and after returning to competition ( $M = 50.38$ ,  $SD = 9.71$ ,  $Z = -1.42$ ,  $p = .15$ , Cohens'  $d = .611$ ) revealed no significant differences. These results showed that athletes' confidence can be effectively perceived by their coaches, and suggest that the athletes' self-report data were not biased.

### 4. Discussion

Injured athletes reported low confidence levels immediately after injury. This finding is in agreement with data reported by Glazer (2009) in a group of 22 injured collegiate varsity athletes, and could be explained by factors such as fear of losing sport level or a place in the team. In our study,

psychological readiness and confidence measures changed significantly across time. Results concur with those obtained by Magyar and Duda (2000) and Evans et al. (2000), who revealed that athletes expressed a progressive increase in the restoration of their confidence to return to play as the rehabilitation process progressed. Glazer's results (2009) using the I-PPRS, indicated that confidence was at the lowest level after the injury occurred, with a progressive increase through the recovery process. Injured athletes need time to regain their confidence before returning to sport practice and competition.

Contrary to Glazer's study (2009), in which no differences in confidence levels were observed before and after competition, I-PPRS scores in the present research increased over time from the time interval before competition to the time interval after competition. Data obtained suggest that psychological readiness was not fully restored until athletes proved themselves that they were recovered by participating in competition. These results are in line with those by Magyar and Duda (2000), who observed that sources of confidence related to performance and demonstration of skills were positively correlated with the restoration of confidence during the recovery process.

Coaches may play an important role in the recovery of athletes with injuries and may be instrumental in facilitating athletes' return to sport participation (Bianco & Eklund, 2001). In a study with 14 professional coaches from Australia and New Zealand, coaches revealed that one of the primary aims in working with returning athletes was to rebuild confidence in physical capabilities and their ability to regain pre-injury levels (Podlog & Eklund, 2007). However, little is still known on the coaches' perceived role in assisting athletes with the re-entry phase (Podlog & Dionigi, 2010). Our results demonstrate that athletes and their respective coaches rated confidence similarly, confirming previous data by Glazer (2009). This result has practical implications because assessment of psychological readiness to reentry may help coaches to determine when the regain of confidence is occurring and to establish the most appropriate time for return to competition.

The findings from this preliminary study indicate that coaches are aware of the confidence levels of athletes recovering from injury and suggest that the I-RRPS could be a useful instrument to assess if and when injured athletes are psychologically ready to return to practice, helping to optimize the recovery process.

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#### Competing Interests

The authors declare no competing interest.

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#### References

- Abenza, L., Olmedilla, A., Ortega, E., & Esparza, F. (2011). Construction of a behaviour log for adhering to the rehabilitation of sports injuries. *Revista de Psicología del Deporte*, 20, 455–476.
- Ardern, C. L., Taylor, N. F., Feller, J. A., & Webster, K. E. (2013). A systematic review of the psychological factors associated with returning to sport following injury. *British Journal of Sports Medicine*, 47, 1120–1126. doi:10.1136/bjsports-2012-091203
- Bianco, T., & Eklund, R. C. (2001). Conceptual considerations for social support research in sport and exercise settings: The instance of sport injury. *Journal of Sport & Exercise Psychology*, 23, 85–107. doi:10.1016/j.jptsp.2010.07.005
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ: Erlbaum Associates.
- Czuppon, S., Racette, B. A., Klein, S. E., & Harris-Hayes, M. (2014). Variables associated with return to sport following anterior cruciate ligament reconstruction: A systematic review. *British Journal of Sport Medicine*, 48, 356–364. doi:10.1136/bjsports-2012-091786

- Evans, L., Hardy, L., & Fleming, S. (2000). Intervention strategies with Injured Athletes: An Action research study. *The Sport Psychologist*, 14, 188–206. <http://dx.doi.org/10.1123/tsp.14.2.188>
- Glazer, D. (2009). Development and preliminary validation of the injury-psychological readiness to return to sport (I-PRRS) scale. *Journal of Athletic Training*, 44, 185–189. doi:10.4085/1062-6050-44.2.185
- Hambleton, R. (Ed.). (2005). *Adapting educational and psychological tests for cross-cultural assessment*. New Jersey: L. Erlbaum Associates.
- Heil, J. (1993). *Psychology of sport injury*. Champaign, IL: Human Kinetics.
- Lentz, T. A., Zeppieri, G., George, S. Z., Tillman, S. M., Moser, M. W., Farmer, K. W., & Chmielewski, T. L. (2015). Comparison of physical impairment and psychosocial measures based on fear of reinjury/lack of confidence and return-to-sport status after ACL reconstruction. *American Journal of Sport Medicine*, 43, 345–353. doi:10.1177/0363546514559707
- Magyar, T. M., & Duda, J. (2000). Confidence restoration following athletic injury. *The Sport Psychologist*, 14, 372–390. <http://dx.doi.org/10.1123/tsp.14.4.372>
- Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.). New York, NY: McGraw-Hill.
- Podlog, L., & Dionigi, R. (2010). Coach strategies for addressing psychosocial challenges during the return to sport form injury. *Journal of Sport Sciences*, 28, 1197–1208. doi:10.1080/02640414.2010.487873
- Podlog, L., & Eklund, R. (2007). Professional coaches' perspectives on the return to sport following serious injury. *Journal of Applied Sport Psychology*, 19, 207–225. doi:10.1080/10413200701188951
- Podlog, L., & Eklund, R. (2009). High-level athletes' perception of success in returning to sport following injury. *Psychology of Sport and Exercise*, 10, 535–544. doi:10.1016/j.psychsport.2009.02.003
- Quinn, A. M., & Fallon, B. J. (1999). The changes in psychological characteristics and reactions of elite athletes from injury onset until full recovery. *Journal of Applied Sport Psychology*, 11, 210–229. doi:10.1080/10413209908404201
- Rubio, V., Pujals, C., De la Vega, R., Aguado, D., & Hernández, J. M. (2014). Self-efficacy and sports injuries: Is this a risk or a protective factor? *Revista de Psicología del Deporte*, 23, 439–444.



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