The Effect of Healing Mental Imagery on Recovery Speed and Adherence to Sport-Injury Rehabilitation Programs

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Introduction

Failure to adhere to a rehabilitation program following sport-injury is a frequent problem for the athlete and the sports medicine practitioner. Non-adherence rates can be as high as 60% (Brewer, 1998; Brewer, 1999). Clearly, adherence is associated with more favorable outcomes (Brewer, 1998). Athletic trainers acknowledge problems with rehabilitation adherence by athletes and agree with the need for investigation (Pihela, Huulima, & Frey, 1997). Today, it is common practice for the athlete to receive therapy for the physical aspect of the injury, leaving the mental aspect of the injury untreated. Athletic trainers, who direct the rehabilitation of injury in athletes, are in a unique position to improve the outcome through effective goal setting and guidance on the mental recovery from injury.

The purpose of this study was to examine three different cognitive interventions used by injured athletes to provide information on the effectiveness of mental imagery to augment the rehabilitation process by improving adherence to the program and speed of recovery.

Method

Participants

Athletes (N = 94)

- College (n=62, 64.7%)
- Recreational (n=22, 23.7%)
- Ages 10-33 (M=24.50, SD = 5.12)
- Male (n=57, 60.6%), Female (n=37, 39.4%)

Sports (N=14)

- Basketball (25), soccer (16), football (12), volleyball (12), triathlon (7), tennis (4), rugby (4), softball (4), ultimate frisbee (3), track & field (2), skiing (2), snowboarding (1), cheerleading (1), and wrestling (1).

Rehab Sites (N=16)

- Clinical (n=73, 77.6%)
- Athletic Training Room (n=21, 22.3%)

Design

Table 1. 3x2 Factorial Design (N = 94)

<table>
<thead>
<tr>
<th>Injury Severity</th>
<th>Condition 1 Healing Imagery Relaxation</th>
<th>Condition 2 Performance Imagery Relaxation</th>
<th>Condition 3 Relaxation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>n = 18</td>
<td>n = 16</td>
<td>n = 14</td>
</tr>
<tr>
<td>3</td>
<td>n = 16</td>
<td>n = 17</td>
<td>n = 13</td>
</tr>
<tr>
<td>Total</td>
<td>n = 34</td>
<td>n = 33</td>
<td>n = 27</td>
</tr>
</tbody>
</table>

Independent Variable
- Treatment Condition (3 levels)

Dependent Variables (2)
1. Healing Imagery
2. Relaxation

Blocking Variable
- Injury Severity (2 levels)

Covariates (3)
1. Motivation to Recover
2. Confidence in the Researcher
3. Placebo Correlates

Procedure

- Participants were consecutively recruited as they sustained a sport-related injury and began a rehabilitation program at a clinic or college training room. All participants were met during their first week of therapy. They were randomly assigned to one of three treatment conditions (Table 1). They were met by the principal investigator (PI) to learn effective goal setting for rehabilitation. The assigned imagery script was administered and participants were instructed to listen to it prior to each scheduled therapy session. Participants recorded use of the CD on the cognitive intervention log sheet. Upon completion of rehabilitation and return to competition, the participant completed the discharge survey. The treating therapist also completed a discharge survey which provided information to calculate each dependent variable.

Measures

- Movement Imagery Questionnaire-Related (MIQR-H, Hall & Martin, 1997). The MIQR-H is a self-report psychological questionnaire that was designed to identify the imagery skill level of the respondent. The respondent is asked to physically perform a skill and then produce the same action in their mind, grading the ease of forming the image. Participants respond to the 8 items on an 8-point Likert scale and receive a total score between 8 and 56. The time it took to form the image was also measured.
- Athlete Demographic Questionnaire
- Cognitive Intervention Log Sheet
- Athlete Discharge Questionnaire
- Treating Therapists Discharge Questionnaire

Hypotheses

Hypothesis I: Adherence will be higher in the healing imagery condition than the performance imagery or the relaxation conditions, after adjusting for mental imagery skill and placebo effects.

Hypothesis II: Recovery speed will be faster in the healing imagery condition as compared to the performance imagery and relaxation conditions, after adjusting for mental imagery skill and placebo effects.

Hypothesis III: Adherence and recovery speed will be negatively correlated.

Results

Table 2. Adjusted Means and Standard Deviations for the Dependent Variables

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adherence</td>
<td>Healing Imagery</td>
<td>34</td>
</tr>
<tr>
<td>Performance Imagery</td>
<td>33</td>
<td>.932</td>
</tr>
<tr>
<td>Relaxation</td>
<td>27</td>
<td>.926</td>
</tr>
<tr>
<td>Recovery Speed</td>
<td>Healing Imagery</td>
<td>34</td>
</tr>
<tr>
<td>Performance Imagery</td>
<td>33</td>
<td>86.61</td>
</tr>
<tr>
<td>Relaxation</td>
<td>27</td>
<td>81.89</td>
</tr>
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</table>

References