



Athletic Trainers' and Physical Therapists' Perceptions of the Effectiveness of Psychological Skills within 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; 1999). Clearly, adhering is associated with more favorable outcomes. Psychological skills are alleged to augment sport-injury rehabilitation (Driediger, Hall, & Callow, 2006; Evans, Hare & Mullen, 2006; Sordoni, Hall, & Forwell, 2002); however, implementation of mental imagery within sport-injury rehab programs is limited. 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 attitudes of Athletic Trainers and Physical Therapists on the effectiveness of mental imagery, goal setting, and positive self-talk to improve adherence and recovery speed of injured athletes.

Method

Participants

Table 1. Participant Demographics by Professional Group (N = 665)

| | <u>Athletic Trainer</u> | <u>Physical Therapist</u> |
|-------------------|-------------------------|---------------------------|
| N | 309 | 356 |
| Gender | | |
| Male | 149 (48.2%) | 148 (41.6%) |
| Female | 160 (51.8%) | 208 (58.4%) |
| Age | | |
| Range | 22-67 years | 23-62 years |
| <i>M ± SD</i> | 34.18 ± 8.32 | 38.58 ± 6.17 |
| Experience | | |
| Range | 1-33 years | 1-36 years |
| <i>M ± SD</i> | 10.67 ± 7.34 | 13.18 ± 6.17 |

Design & Procedure

Athletic Trainers (n = 1000) and Physical Therapists (n = 1000) were randomly selected from professional member databases of the National Athletic Trainers' Association (NATA) and the American Physical Therapy Association (APTA). Practitioners were contacted via electronic and physical mailings respectively to complete a single administration survey which measured their beliefs about the effectiveness of psychological skills for increasing adherence and recovery speed of injured athletes undergoing rehabilitation.



Measures

- The Attitudes About Imagery (AAI) measures attitudes about psychological skills for enhancing adherence and recovery speed of injured athletes. The AAI survey includes demographic questions and 15 items on a 7-point Likert scale measuring attitudes about the effectiveness of mental imagery, self-talk, goal setting, and pain control on adherence and recovery speed of injured athletes.
- The AAI survey was developed for this research based on components of the Integrated Model of Response. Four experts from three areas of specialization (sport psychology, athletic training and physical therapy) assessed the content validity. The survey demonstrated good test-retest reliability (.60 to .84) and Cronbach's alphas ranged from .65 to .90. The measures of internal reliability and inter-item reliability support the experts' guidance on content validity.

Hypotheses

Hypothesis I: Athletic trainers who graduated from an accredited education program would report significantly more positive attitudes on the effectiveness of mental imagery as compared to those athletic trainers who did not graduate from an accredited program.

Hypothesis II: Athletic trainers in accredited programs would report significantly more positive attitudes on the effectiveness of mental imagery as compared to physical therapists.

Hypothesis III: Possessing formal education on the use of mental imagery will be related to more positive attitudes regarding its use to rehabilitate injured athletes.

Hypothesis IV: Interest in receiving formal education on mental imagery will be related to more positive attitudes regarding its use to rehabilitate injured athletes.

Results

Table 2. ANOVA Results on Formal Education, Formal Training, and Interest in Gaining Formal Training

| | Yes | | No | | F | p | ES |
|-----------------------------|---------|--------|---------|--------|-------|------|-----|
| | M | SD | M | SD | | | |
| Accredited Program | n = 210 | | n = 145 | | | | |
| Mental Imagery | 5.34 | ± 1.06 | 5.33 | ± 0.95 | .002 | .962 | .01 |
| Goal Setting | 6.39 | ± 0.91 | 6.32 | ± 0.81 | .573 | .450 | .09 |
| Positive Self-talk | 6.02 | ± 0.87 | 6.04 | ± 0.70 | .045 | .833 | .03 |
| Pain Control | 6.32 | ± 0.90 | 6.21 | ± 0.90 | 1.39 | .239 | .12 |
| Formal Training | n = 115 | | n = 550 | | | | |
| Mental Imagery | 5.66 | ± 0.86 | 5.27 | ± 0.98 | 15.32 | .000 | .45 |
| Goal Setting | 6.50 | ± 0.70 | 6.10 | ± 0.96 | 16.97 | .000 | .57 |
| Positive Self-talk | 6.19 | ± 0.62 | 5.93 | ± 0.86 | 9.68 | .002 | .42 |
| Pain Control | 6.29 | ± 0.89 | 6.18 | ± 0.94 | 1.19 | .277 | .12 |
| Interest in Formal Training | n = 415 | | n = 250 | | | | |
| Mental Imagery | 5.56 | ± 0.89 | 4.99 | ± 1.00 | 59.67 | .000 | .64 |
| Goal Setting | 6.29 | ± 0.85 | 5.96 | ± 1.02 | 20.04 | .000 | .39 |
| Positive Self-talk | 6.08 | ± 0.77 | 5.80 | ± 0.90 | 18.59 | .000 | .36 |
| Pain Control | 6.29 | ± 0.88 | 6.04 | ± 1.00 | 11.15 | .001 | .28 |

Table 3. Grand Means and Standard Deviations of 4 Sub-scales on the Attitudes About Imagery Survey

| AAI Items | Athletic Trainers | | Physical Therapists | | F | P | ES |
|-----------------------------|--------------------|--------------------|---------------------|--------------|---|---|------------|
| | M (SD) | M (SD) | F | P | | | |
| Imagery Mean (8) | 5.39 (0.99) | 5.29 (0.96) | 1.70 | .19 | | | .10 |
| Imagery | 5.47 (1.21) | 5.62 (1.20) | 2.61 | .11 | | | .12 |
| Imagery | 5.56 (1.19) | 5.42 (1.27) | 2.17 | .14 | | | .12 |
| Imagery | 4.73 (1.45) | 4.91 (1.33) | 2.64 | .10 | | | .14 |
| Imagery | 5.95 (1.10) | 5.69 (1.16) | 9.00 | .003* | | | .24 |
| Imagery | 4.98 (1.49) | 4.85 (1.42) | 1.44 | .23 | | | .09 |
| Imagery | 5.19 (1.30) | 5.12 (1.24) | .587 | .44 | | | .06 |
| Imagery | 5.48 (1.19) | 5.28 (1.20) | 4.70 | .03* | | | .17 |
| Imagery | 5.80 (1.21) | 5.50 (1.24) | 9.92 | .002* | | | .25 |
| + Self-talk Mean (3) | 6.09 (0.72) | 5.88 (0.91) | 10.66 | .001* | | | .29 |
| + Self-talk | 5.28 (1.33) | 5.30 (1.25) | .025 | .87 | | | .02 |
| + Self-talk | 6.51 (0.89) | 6.17 (1.05) | 19.79 | .000* | | | .38 |
| + Self-talk | 6.46 (0.80) | 6.16 (1.00) | 17.54 | .000* | | | .35 |
| Pain Mean (2) | 6.35 (0.77) | 6.06 (1.03) | 17.00 | .000* | | | .38 |
| Pain Control | 6.37 (0.93) | 6.09 (1.17) | 11.60 | .001* | | | .30 |
| Pain Control | 6.35 (0.89) | 6.04 (1.05) | 16.43 | .000* | | | .35 |
| Goal Mean (2) | 6.43 (0.78) | 5.94 (1.00) | 49.30 | .000* | | | .63 |
| Goal setting | 6.41 (1.01) | 5.97 (1.10) | 29.80 | .000* | | | .44 |
| Goal Setting | 6.46 (0.81) | 5.92 (1.07) | 51.73 | .000* | | | .67 |

*Significant at p < .05 level

Discussion & Future Directions

- Significant mean differences were found on attitudes of effectiveness of psychological skills for those who reported formal training and those who reported interest in receiving formal training (p < .05). However, current continuing education opportunities are not abundant.
- Overall, Athletic Trainers and Physical Therapists hold positive attitudes on the effectiveness of psychological skills to augment the rehabilitation process. Contrary to prior research (Wiese, Weiss, & Yukelson, 1991), this promising finding prompts future research to explore practitioners' confidence in delivery of such techniques and identify the best vehicle for continuing education and other opportunities to improve confidence and therefore, use.
- Finally, Athletic Trainers held significantly more positive attitudes than Physical Therapists on 9 of 15 AAI items (p < .05). This finding potentially identifies differences between the two practitioner groups in the treatment of athletes who are rehabilitating a sport-injury.

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Kinesiology, Health Promotion, Recreation

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Purpose

The purpose of this study was to examine attitudes of Athletic Trainers ($N = 309$, Females = 160, Ages $M = 34.38$, $SD = 8.32$), Experience $M = 10.67$, $SD = 7.34$) and Physical Therapists ($N = 356$, Females 208, Age $M = 13.18$, $SD = 6.17$, Experience $M = 13.18$, $SD = 6.17$) on the effectiveness of mental imagery, goal setting, and positive self-talk to improve adherence and recovery speed of injured athletes. The Attitudes About Imagery (AAI) measures attitudes about psychological skills for enhancing adherence and recovery speed of injured athletes. The AAI survey includes demographic questions and 15 items on a 7-point Likert scale measuring attitudes about the effectiveness of mental imagery, self-talk, goal setting, and pain control on adherence and recovery speed of injured athletes. Higher scores on the 15 items indicate the participant strongly agrees with the statement.

Tested Hypotheses

Hypothesis I: Athletic trainers who graduated from an accredited education program would report significantly more positive attitudes on the effectiveness of mental imagery as compared to those athletic trainers who did not graduate from an accredited program.

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Hypothesis IV: Interest in receiving formal education on mental imagery will be related to more positive attitudes regarding its use to rehabilitate injured athletes.

Discussion:

Attitudes about the effectiveness of psychological skills were significantly difference for those who reported formal training and those who reported interest in receiving formal training. Both Athletic Trainers and Physical Therapists were found to hold positive attitudes on the effectiveness of psychological skills to augment the rehabilitation process. However, Athletic Trainers held significantly more positive attitudes than Physical Therapists on 9 of 15 AAI items ($p < .05$). These findings suggest that there are differences between the training and experience of the two practitioner groups in the treatment of athletes who are rehabilitating a sport-injury. Unfortunately current continuing education opportunities are not abundant.

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