

# The effect of psychological (in)flexibility in anterior cruciate ligament reconstruction rehabilitation

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## Background

- Changes in mood and substance use can occur after anterior cruciate ligament (ACL) repair.
- Identifying predictors of mood disturbance and maladaptive behaviour may assist during rehabilitation.
- *Pain Catastrophizing* is associated with mood and pain intensity post ACL surgery (Tripp et al., 2003).
- *Acceptance* is an important psychological concept in adjustment to chronic pain, and is associated with depression and disability (McCracken et al., 2004).
- No previous studies have investigated the association between *Acceptance* and outcomes in rehabilitation following ACL repair.

## Aim

- To examine the relationship between both *Acceptance* and pain catastrophising as predictors of depression, pain intensity, and alcohol and substance use after ACL surgery

## Methods

### Participants

- Patients (mean = age 27 years, SD = 9.4 years) who have undergone ACL surgery completed assessment within 2 weeks of ACL surgery (N = 44) and at 6 months post surgery (N = 26).
- The most frequent primary sports were Australian Rules Football (n=13 ;29.5%); (n=8; 18.2%); and Basketball ( n=6; 13.6%).

### Measures

- Depression scale of the Depression Anxiety and Stress Scale (DASS; Lovibond & Lovibond, 1995)
- Acceptance Action Questionnaire (AAQ; Hayes et al., 2004)
- Pain Catastrophizing Scale (PCS; Sullivan et al., 1995)
- Numerical rating scale of pain intensity (NRS)
- The alcohol and substance use subscale of the Coping Orientations to the Problem Experience COPE (Carver, 1997).

## Results

Figure 1  
Means and standard deviations of criterion measure at 2 weeks and 6 months after ACL repair

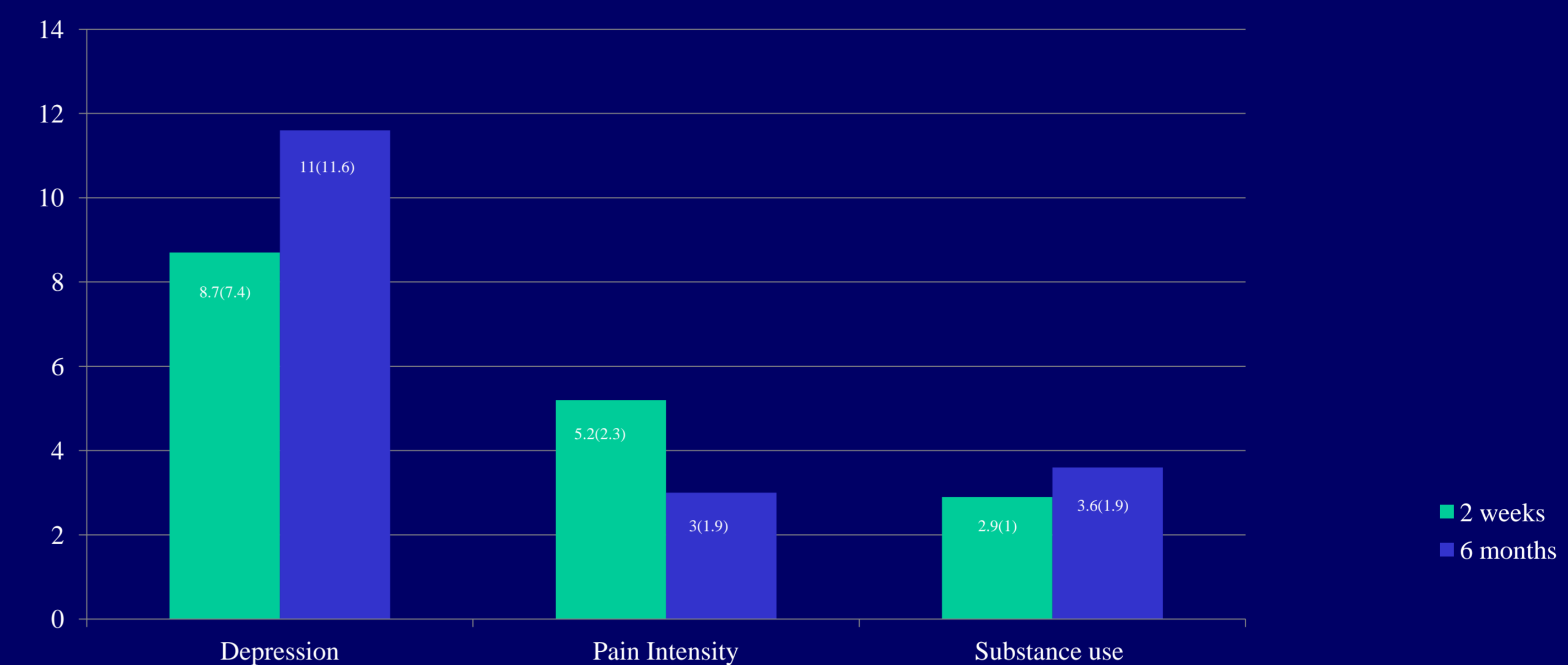


Table 1  
Zero order correlations between predictors at Time 1 and outcomes at Time 1 and 2

Predictors	2 weeks post surgery			6 months post surgery		
	Depression	Pain	Substance	Depression	Pain	Substance
Acceptance	.03	.11	-.41**	-.47*	.13	-.33
Catastrophizing	.35*	.38*	.21	.05	.14	.25

\* p < .05 ( 2 tailed), \*\* p < .01 ( 2 tailed)



## Conclusions

### Main Findings

- *Pain Catastrophizing* was associated with pain Intensity and affective disturbance at assessment, but not at 6 month follow-up
- *Acceptance* was associated with Depression at 6 month follow-up.
- *Acceptance* was also associated with substance use at assessment, but not follow-up.

### Implications

- Post ACL surgery, identification of patients who may respond poorly in rehabilitation may assist practitioners to provide early intervention psychological treatment.
- Psychological treatments that focus on *Acceptance* such as Acceptance and Commitment Therapy (ACT; Hayes et al., 2012) may have efficacy treating mood disturbance and behavioural dysfunction post ACL surgery.

### Future Studies

- Controlled psychological treatment studies are required to test the efficacy of targeting *Acceptance* post ACL surgery. Further longitudinal studies are required to confirm findings in populations with other sport injuries.

## References

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