



## CORR Insights

**CORR Insights®: To What Degree Do Pain-coping Strategies Affect Joint Stiffness and Functional Outcomes in Patients With Hand Fractures?**

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**Where Are We Now?**

The influence of psychological factors on functional outcomes in clinical orthopaedics is becoming increasingly recognized. The World Health Organization has concluded that depression better predicts general health status than angina, asthma, diabetes, or arthritis [5]. In musculoskeletal health, depression has been demonstrated to predict self-reported upper extremity health status

for multiple diagnoses [7]. Depression, pain catastrophizing, and other psychological factors are the best available predictors of severity of pain and disability after ACL reconstruction, knee arthroplasty, and minor hand surgery [6, 8, 9]. Psychological symptoms are prevalent and inadequately recognized on clinical impression alone. After orthopaedic trauma, 45% of patients have clinically relevant symptoms of depression [1]; in spine patients, 64% have psychological

distress on screening questionnaires [2], and after severe lower limb injuries, 48% of patients screen positive for a likely psychological disorder [3]. Controversies remain regarding the relationships among psychological factors associated with physical impairment (as opposed to perceived disability), the degree to which psychological factors can be modified in the orthopaedic patient, and whether this is practical to achieve.

Roh et al. have focused on the role of pain-coping strategies on ROM and grip strength after hand fractures. They found that poor coping skills before surgery, as measured by high catastrophization and anxiety, were associated with weaker grip strength, decreased ROM, and increased disability after surgical treatment for hand fracture in the first 3 months after injury.

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**Where Do We Need To Go?**

The study by Roh and colleagues is relevant to clinical orthopaedists

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because the diagnoses are verifiable on diagnostic tests, the psychological factors are measurable, and the outcomes used are quantitative measures of physical impairment. Surgeons may feel inadequately equipped to address subjective perception of disability, but restoration of musculoskeletal function is central to the role of the orthopaedic surgeon in healthcare. The question is whether screening, counseling, and psychological interventions are effective and practical in improving recovery.

Pain catastrophizing and depressive symptoms occur on a spectrum, and financial resources are limited, so we will need to work out who will benefit from such interventions. Readers will note also in this study that poor coping skills did not show persistent effects on ROM beyond 6 months. It may be that “patience is a virtue,” in that we need to reassure our patients with psychological distress (and ourselves) that musculoskeletal function will improve, albeit more slowly, even when coping skills are deficient. Future studies will have to identify and assess interventions that can improve coping strategies, to see whether they can improve range of motion or grip strength after hand fracture, and whether they would be practical to implement.

## How Do We Get There?

We need to determine whether we can do anything differently for patients with maladaptive coping skills; this will require prospective comparative studies to evaluate whether patients might benefit from cognitive behavioral therapy or other psychotherapy interventions. Studies should also seek to identify the most accurate and least burdensome ways to identify patients with poor coping skills, so that appropriate patients can be identified, both for clinical and research purposes. This may involve computer adaptive testing to minimize time burden on the patient and the physician, and maximize accuracy of evaluation [4]. Collaboration with psychologists and other mental health experts will be instrumental in the development of psychological interventions for orthopaedic patients, but it is likely that the practical day-to-day implementation will need to be provided by health care providers already involved in their care, such as surgeons, occupational therapists, and other providers, or administered electronically through mobile applications or Internet web browsers. Existing knowledge in clinical psychology can be applied to orthopaedic patients and may become “tools in the toolbox” for surgeons,

nurses, and therapists in the care of their patients.

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