

The Role of Psychological Intervention with ACL Reconstructive Patients: A Critically Appraised Topic

Zaichenko D, Medina McKeon JM: Ithaca College, Ithaca NY

Focused Clinical Question: In patients undergoing rehabilitation for ACL injury or surgery (P), does psychological intervention enhanced rehabilitation (I) result in increased knee-related self-efficacy or clinical outcomes (O) compared to standard care (C)? **Data Sources:** PubMed was searched through September 2017. Search terms included iterations of ACL, rehabilitation, adhere, psychology, and postoperative, and were limited to studies published after 2007. **Study Selection:** Selection criteria required that studies investigated 1) psychological intervention to enhance ACL rehabilitation or 2) knee-related self-efficacy as related to clinical outcomes after ACL injury or surgery. **Data extraction:** Selected outcomes of interest were 1) knee-related self-efficacy for present or future knee ability, as measured by the Athletic Injury Self-Efficacy Questionnaire(AIESQ) or Knee Self-Efficacy Scale(K-SES); 2) patient-reported outcomes(PROs), as measured by the Knee Injury and Osteoarthritis Outcome Score(KOOS) and Lysholm Knee Scale; 3) strength (single-limb knee extension, knee flexion, and leg press); and 4) functional tests (single-limb hop for distance, single-limb countermovement jump, and 30s single-limb side hop). Higher scores indicate better knee-related self-efficacy, PROs, strength, or functional tests, respectively. The factors assessed were 1) psychological intervention (combinations of guided imagery, relaxation, education); 2) acceptability of knee outcomes (acceptable/not acceptable). Means, standard deviations, and sample sizes were extracted at for outcomes at 6wks, 24wks, and/or 52wks. **Summary measures:** Individual Hedge's g effect sizes(ES) [95%CIs] were calculated for all variables. One summary model was used to evaluate the pooled effect of psychological intervention on knee-related self-efficacy. Six additional models (3 for knee-related self-efficacy at present, 3 for knee-related self-efficacy of future performance) evaluated the pooled effect of knee-related self-efficacy on PROs, strength, and functional tests. **Evidence Appraisal:** Although selection criteria allowed for non-randomized studies to be included, the PEDro scale was used identify potential threats to validity. **Search Results:** Three studies met selection criteria. Study design varied: 2 studies were RCTs; 1 study was a nonrandomized clinical trial. **Data Synthesis:** Three studies were analyzed. The effect of psychological intervention on knee-related self-efficacy was weak (ES=0.2[-0.3, 0.7], p=0.50). For current assessment of knee-related self-efficacy there was a weak effect for those with 'acceptable' vs. 'not acceptable' outcomes, with CIs that encompassed zero for all three models; these were pooled together (ES=0.3[0.1, 0.5], p=0.01). However, for assessment of future knee-related self-efficacy, there was a strong effect for 'acceptable' outcomes for PROs (ES=0.8[0.4, 1.2],p<0.001) and functional tests (ES=0.7[0.0, 1.3], p=0.06), but a weak effect for strength (ES=0.1[-0.3,0.6],p=0.50). **Evidence Quality:** Included studies had PEDro scores of 4, 4, and 8 of 10. All studies demonstrated similar group baseline characteristics, and reported appropriate statistics and results. All 3 studies failed to blind the patients and treating therapists. Two studies did not randomize participants or conceal group allocation. **Conclusions:** Projected knee-related self-efficacy had a strong effect on rehabilitation success as measured by

PROs and functional tests; however, has a weak effect on acceptable strength measures. Perhaps self-efficacy is better at capturing patient-oriented outcomes, such as subjective and objective assessments of function, but is less likely to accurately predict disease-oriented, impairment-based outcomes. Assessing knee-related self-efficacy in patients undergoing ACL-R may assist in the chance of effective rehabilitation. Although psychological intervention did not increase knee-related self-efficacy, there was a possibility that a ceiling effect may have influenced the results. The average knee-related self-efficacy scores at baseline were within 15% of the maximum score. Additionally, there was a chance that the regular interaction with a clinician may have a similar effect to the experimental condition. However, in those with a knee-related self-efficacy deficit, psychological intervention may be beneficial, and ultimately improve clinical outcomes. ATs should assess knee-related self-efficacy and consider referring ACL-injured patients who demonstrate lower-than-expected scores. **Word Count: 599**