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Research Reviews
Therapeutic Alliance and Pain

Introduction: Contextual factors – psychological, social, and environmental – interact with health care interventions to influence outcomes.[1] Therapeutic alliance (TA) is one such contextual factor. Therapeutic alliance is defined as "the working rapport… between the patient and the therapist."[2,3] To date, much of the research on therapeutic alliance has occurred in psychology.[4-7] Nevertheless, researchers have begun investigating the role of therapeutic alliance in physical therapy.[1,2,8-12]

Literature Overview: The evidence base continues to grow to support a significant relationship between therapeutic alliance and physical therapy outcomes. Outcomes including pain,[2,8,9,13] function,[9,13] disability,[1,9] and adherence[12] have all been closely linked to therapeutic alliance. Therapeutic alliance research in physical therapy has thus far focused on low back pain.[2,9,14-17] Future research should investigate the role of therapeutic alliance in a variety of conditions. The aim of the present review is to provide an overview of the relationship between therapeutic alliance and musculoskeletal pain.

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Articles

Kinney M, Seider J, Beaty AF, Coughlin K, Dyal M, Clewley D. The impact of therapeutic alliance in physical therapy for chronic musculoskeletal pain: A systematic review of the literature. Physiother Theory Pract. 2020 Aug;36(8):886-898. doi: 10.1080/09593985.2018.1516015. Epub 2018 Sep 28. PMID: 30265840.

Abstract

Objective: To systematically determine the specific impact of therapeutic alliance (TA) on chronic musculoskeletal pain, identify factors influencing TA between physical therapists and patients with chronic musculoskeletal pain, and determine the working definition of TA across studies. *Data Sources*: Databases, including PubMed, CINHAL, and Embase, were searched from inception to January 2017. *Study Selection*: The initial search resulted in 451 papers. After screening, seven studies were identified that examined the role of TA on chronic pain (> 12 weeks) management in physical therapy settings. *Data Extraction*: Authors extracted data into tables. Risk of bias was assessed using Cochrane Collaboration methodology. *Data Synthesis*: Three studies examined the influence of a strong TA coupled with physical therapy on pain outcomes. Four studies identified factors that positively and negatively influenced TA. The working definition of TA was identified in each study.

Conclusions: Emerging evidence suggests that for individuals participating in physical therapy for chronic musculoskeletal pain, a strong TA may improve pain outcomes. In order to facilitate a strong TA, physical therapists must understand factors that positively and negatively influence the relationship. Studies demonstrate that the definition of TA remains consistent as it transitions to the physical therapy setting.

Ferreira PH, Ferreira ML, Maher CG, Refshauge KM, Latimer J, Adams RD. The therapeutic alliance between clinicians and patients predicts outcome in chronic low back pain. Phys Ther. 2013 Apr;93(4):470-8. doi: 10.2522/ptj.20120137. Epub 2012 Nov 8. PMID: 23139428.

Abstract
Background: The impact of the relationship (therapeutic alliance) between patients and physical therapists on treatment outcome in the rehabilitation of patients with chronic low back pain (LBP) has not been previously investigated. *Objective*: The purpose of this study was to investigate whether the therapeutic alliance between physical therapists and patients with chronic LBP predicts clinical outcomes. *Design*: This was a retrospective observational study nested within a randomized controlled trial. *Methods*: One hundred eighty-two patients with chronic LBP who volunteered for a randomized controlled trial that compared the efficacy of exercises and spinal manipulative therapy rated their alliance with physical therapists by completing the Working Alliance Inventory at the second treatment session. The primary outcomes of function, global perceived effect of treatment, pain, and disability were assessed before and after 8 weeks of treatment. Linear regression models were used to investigate whether the alliance was a predictor of outcome or moderated the effect of treatment. *Results*: The therapeutic alliance was consistently a predictor of outcome for all the measures of treatment outcome. The therapeutic alliance moderated the effect of treatment on global perceived effect for 2 of 3 treatment contrasts (general exercise versus motor control exercise, spinal manipulative therapy versus motor control exercise). There was no treatment effect modification when outcome was measured with function, pain, and disability measures. *Limitations*: Therapeutic alliance was measured at the second treatment session, which might have biased the interaction during initial stages of treatment. Data analysis was restricted to primary outcomes at 8 weeks. *Conclusions*: Positive therapeutic alliance ratings between physical therapists and patients are associated with improvements of outcomes in LBP. Future research should investigate the factors explaining this relationship and the impact of training interventions aimed at optimizing the alliance.

Fuentes J, Armijo-Olivo S, Funabashi M, Miciak M, Dick B, Warren S, Rashiq S, Magee DJ, Gross DP. Enhanced therapeutic alliance modulates pain intensity and muscle pain sensitivity in patients with chronic low back pain: an experimental controlled study. Phys Ther. 2014 Apr;94(4):477-89. doi: 10.2522/ptj.20130118. Epub 2013 Dec 5. Erratum in: Phys Ther. 2014 May;94(5):740. PMID: 24309616.

Abstract
Background. Physical therapy influences chronic pain by means of the specific ingredient of an intervention as well as contextual factors including the setting and therapeutic alliance (TA) between provider and patient. *Objective*. The purpose of this study was to compare the effect of enhanced versus limited TA on pain intensity and muscle pain sensitivity in patients with chronic low back pain (CLBP) receiving either active or sham interferential current therapy (IFC). *Design*. An experimental controlled study with repeated measures was conducted. Participants were randomly divided into 4 groups: (1) AL (n 30), which included the application of active IFC combined with a limited TA; (2) SL (n 29), which received sham IFC combined with a limited TA; (3) AE (n 29), which received active IFC combined with an enhanced TA; and (4) SE (n 29), which received sham IFC combined with an enhanced TA. *Methods*. One hundred seventeen individuals with CLBP received a single session of active or sham IFC. Measurements included pain intensity as assessed with a numerical rating scale (PI-NRS) and muscle pain sensitivity as assessed via pressure pain threshold (PPT). *Results*. Mean differences on the PI-NRS were 1.83 cm (95% CI 14.3–20.3), 1.03 cm (95% CI 6.6 –12.7), 3.13 cm (95%

CI 27.2–33.3), and 2.22 cm (95% CI 18.9 –25.0) for the AL, SL, AE, and SE groups, respectively. Mean differences on PPTs were 1.2 kg (95% CI 0.7–1.6), 0.3 kg (95% CI 0.2– 0.8), 2.0 kg (95% CI 1.6– 2.5), and 1.7 kg (95% CI 1.3–2.1), for the AL, SL, AE, and SE groups, respectively. *Limitations*. The study protocol aimed to test the immediate effect of the TA within a clinical laboratory setting. *Conclusions*. The context in which physical therapy interventions are offered has the potential to dramatically improve therapeutic effects. Enhanced TA combined with active IFC appears to lead to clinically meaningful improvements in outcomes when treating patients with CLBP.

Cheing G, Vong S, Chan F, Ditchman N, Brooks J, Chan C. 2014. Testing a path-analytic mediation model of how motivational enhancement physiotherapy improves physical functioning in pain patients. J Occup Rehabil. 24:798–805.

Abstract
Purpose Pain is a complex phenomenon not easily discerned from psychological, social, and environmental characteristics and is an oft cited barrier to return to work for people experiencing low back pain (LBP). The purpose of this study was to evaluate a path-analytic mediation model to examine how motivational enhancement physiotherapy, which incorporates tenets of motivational interviewing, improves physical functioning of patients with chronic LBP. *Methods* Seventy-six patients with chronic LBP were recruited from the outpatient physiotherapy department of a government hospital in Hong Kong. *Results* The re-specified path-analytic model fit the data very well, χ 2(3, N = 76) = 3.86, p = .57; comparative fit index = 1.00; and the root mean square error of approximation = 0.00. Specifically, results indicated that (a) using motivational interviewing techniques in physiotherapy was associated with increased working alliance with patients, (b) working alliance increased patients' outcome expectancy and (c) greater outcome expectancy resulted in a reduction of subjective pain intensity and improvement in physical functioning. Change in pain intensity also directly influenced improvement in physical functioning. *Conclusions* The effect of motivational enhancement therapy on physical functioning can be explained by social–cognitive factors such as motivation, outcome expectancy, and working alliance. The use of motivational interviewing techniques to increase outcome expectancy of patients and improve working alliance could further strengthen the impact of physiotherapy on rehabilitation outcomes of patients with chronic LBP.

Lakke SE, Meerman S. Does working alliance have an influence on pain and physical functioning in patients with chronic musculoskeletal pain: a systematic review. J Compassionate Health Care 2016;3:1.

Abstract
Background Working alliance can possibly influence patients' experiences of pain and physical functioning. The aim of this systematic review is to merge evidence from literature regarding the influence of patients' perceived working alliance on pain and physical functioning in patients with chronic musculoskeletal pain. *Methods* A systematic review in which randomized controlled trials and cohort studies were included that assessed the influence of working alliance on either pain or physical functioning in patients with chronic musculoskeletal pain. The methodological quality of the included studies were rated by means of the PEDro score and STROBE statement. *Results* The first step of the search process provided 1469 studies. After screening, five studies were included in this review including one RCT and four cohort studies of patients with chronic musculoskeletal pain. One cohort study was rated as low methodological quality and the other studies as high methodological quality. There was a significant effect of working alliance on the outcome of pain severity, pain interference, and physical functioning in all studies. Physical functioning was measured by means of questionnaires and functional capacity tests. The effect on questionnaires was positive; the effect was conflicting on functional capacity. *Conclusion* When influencing pain with treatment, a patient's perceived working alliance during treatment does predict pain reduction and improvement in physical functioning. It is recommended to inquire about a patient's working alliance during treatment in patients with chronic musculoskeletal pain.

Miyamoto GC, Fagundes FRC, de Melo do Espírito Santo C, de Luna Teixeira FM, Tonini TV, Prado FT, Cabral CMN. Education With Therapeutic Alliance Did Not Improve Symptoms in Patients With Chronic Low Back Pain and Low Risk of Poor Prognosis Compared to Education Without Therapeutic Alliance: A Randomized Controlled Trial. J Orthop Sports Phys Ther. 2021 Aug;51(8):392-400. doi: 10.2519/jospt.2021.9636. Epub 2021 May 7. PMID: 33962515.

Abstract
Objectives To compare the effectiveness of an education intervention with or without the addition of the therapeutic alliance to no education intervention in patients with nonspecific chronic low back pain (LBP) and low risk of poor prognosis. *Design* Randomized controlled trial. Randomization was performed using randomly generated numbers. *Methods* Two hundred twenty-two patients with nonspecific chronic LBP and low risk of poor prognosis from 2 university physical therapy services in Taubaté, Brazil were randomized into 3 groups: education plus therapeutic alliance, education only, and no education. Primary outcomes were pain (measured with the numeric pain-rating scale) and patient-specific disability (measured with the Patient-Specific Functional Scale), assessed 1 month after randomization. The patients, therapists, and assessors were not blinded due to the nature of the intervention and self-reported outcomes. *Results* Patients were recruited between November 2015 and February 2017. There was a loss of 17 (7.6%) follow-up assessments at 1 month, 28 (12.6%) at 6 months, and 31 (13.9%) at 12 months after randomization, and intention-to-treat analyses were conducted. There were no significant differences in pain between groups. However, there was a significant improvement in patient-specific disability for the education-plus–therapeutic alliance and education-only groups compared to no education after 1 month (mean difference, −1.41; 95% confidence interval: −2.31, −0.51 and −0.95; 95% confidence interval: −1.85, −0.04, respectively). *Conclusion* An education intervention did not provide clinically relevant improvements in patient-specific disability and did not influence pain in patients with nonspecific chronic LBP and low risk of poor prognosis. Additionally, there was no difference between interventions with or without emphasis on the therapeutic alliance. J Orthop Sports Phys Ther 2021;51(8):392–400. Epub 7 May 2021. doi:10.2519/jospt.2021.9636

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