Reviewer’s report

Title: Dry needling in a manual physiotherapy and therapeutic exercise protocol for patients with chronic mechanical shoulder pain of unspecific origin: a protocol for a randomized control trial

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Reviewer: Leica S Claydon

Reviewer's report:

Introduction

From the literature reviewed, how much pain relief is achieved with manual therapy and exercise? What level of pain relief are you hoping to achieve with the addition of dry needling?

Methods

There appears to be a typographical error in the randomisation allocation ratio (8,8,8,4,8) think the 4 needs to be deleted.

Eligibility criteria for the participants- need a referenced definition of non-specific shoulder pain. At the moment this is unclear how this is defined and therefore assessed.

Interventions

There are multiple interventions- it would be useful if these were mapped to the previous literature. This seems quite an intense programme - is this normal practice for chronic pain?

Outcomes

Why is DASH a primary outcome? The study is not powered for this outcome. A minimally clinically significant difference of 9-11mm on the VAS is on the low side in the literature it is usually 15-20mm.

Secondary outcome- recording pressure pain threshold on the tibialis anterior presumes a systemic effect of dry needling- yet this is not considered anywhere.

Sample size- this seems a bit on the low side. Is 'TE 0.25' a small effect size? This would not be clinically observable
Blinding- there is insufficient detail on the placebo condition. What were the participants informed? How can the clinician (who is performing the dry needling) be blind to baseline VAS? Do they not seek feedback from the participant re pain levels for the appropriateness of the dry needling technique?

Was the statistician blind to group allocation?

Statistical Analysis

The first paragraph mentions students t test for independent samples or Mann Whitney if the data are not normally distributed. Then the rest of this section is about repeated measures ANOVA with corrected contrasts. Which will be used as all outcomes are recorded multiple times? In addition difference scores are likely to regress to the mean it is better if raw scores and used and the baseline score is used as a covariate in the ANCOVA.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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I am able to assess the statistics

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