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Letter to the Editor

Unjustified extrapolation

Letter to the editor on:

Rabey, M; Smith, A; Beales, D; Slater, H; O'Sullivan, P. (2017). Pain provocation following sagittal plane repeated movements in people with chronic low back pain. Associations with pain sensitivity and psychological profiles. In: Scandinavian Journal of Pain 16, S22–28. doi:10.1016/j.sjpain.2017.01.009.

We would like to thank the authors of the article 'Pain provocation following sagittal plane repeated movements in people with chronic low back pain: Associations with pain sensitivity and psychological profiles' [1] for attempting to further explore the use and value of patient generated repeated movements in the assessment of low back pain patients. We agree that pain provocative responses from repeated movement testing for patients with low back pain impairments can enhance estimates of the patients' likelihood of a good or poor rehabilitation outcome and guide treatment decisions regarding exercise prescription during the episode of care. Many well designed observational studies and clinical trials have reported on this capacity [2–8]. The article has the potential to elaborate on the relationship between provocative pain responses following repeated movements in people with back pain. However, for the reasons outlined below, we feel that the article does not fulfil this potential and suggest that the extrapolations made are beyond the scope of the study methodology.

1. 'Data driven' repeated movement testing?

The authors claimed that, in contrast to prior published pain classification models, their three pain subgroups were data driven, standardized, and devoid of clinical opinion bias, yet provided no chance corrected inter-rater reliability or validity data supporting their hypothetical provocation pain classification model. Rabey and colleagues utilized a self-defined form of repeated movement testing. Asking a patient to pick up a pencil and to look at the ceiling 'however they wished, and at whatever speed they wished' would be considered an unusual method to standardize a repeated movement testing protocol. In addition, the authors failed to reference or discuss the clinometric data reported in many prior studies regarding other provocative pain classification models. For example, Kilpikoski et al. reported excellent reliability data ($k = 0.90$) for identifying favourable pain responses during repeated movements using McKenzie methods [9]. Werneke et al., reported that pain diagrams and overlay templates allowed objective and reliable judgements ($k = 0.96$) to classify patients [10]. The authors created the impression that the repeated movement tests used in their study are superior to other psychometrically sound repeated movement methodologies previously reported in the spine literature. Therefore, the article offers only a scant review of an extensive library of repeated movement related research.

2. Methodology of repeated movement testing

Rabey et al. acknowledge the significant differences in their protocol for repeated movements compared to other researched clinical protocols. In fact, data from prior studies demonstrate the importance of repeated movement testing in the frontal plane [5,11]. In clinical practice unloaded positions are more commonly used in the assessment and treatment process. It is therefore unsurprising that the proportion of participants demonstrating pain amelioration (10.9%) is dramatically less than previously reported e.g. pain centralization was reported at 42–74% in a recent systematic review [12]. We would suggest that these differences compromise any extrapolation of the author's cursory repeated movement protocol to any other protocol previously described, such as that used with McKenzie methodology.

3. Previous data – acute versus chronic?

The authors' statement that prior studies on repeated movements had dealt mainly with non-chronic or exclusively acute patient population contrasts with data previously reported. For example, Werneke et al. reported that 71% of subjects were not acute and of those 53% were chronic [10] using the same operational definition of chronicity recommended by Rabey et al. [1].

4. Extrapolation of results from a cursory repeated movement examination to a comprehensive biopsychosocial system of diagnosis and management

When referring to former studies with suboptimal outcomes, the authors have mixed their references, lumping in studies that used entirely different examination methodology with a study that based on the principles of McKenzie's method of Mechanical Diagnosis and Therapy - so called MDT [5,13–16]. From these studies only Long et al. used a repeated movement protocol to categorize patients [5]. The results of her study show the efficacy of directional preference exercises compared to exercises in the opposite direction or general exercises. This reported efficacy is consistent with the 2012 Clinical Practice Guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association, which states: *Clinicians should consider using repeated exercises in a specific direction determined by treatment response to improve mobility and reduce symptoms in patients with acute or sub acute low back pain with mobility deficits* [17].

Within MDT, a thorough clinical examination using standardized repeated *end range* test movement in conjunction with a patient centred history taking helps to classify patients into subgroups which guide the management strategy for these patients. Picking up a pencil and looking at the ceiling is certainly NOT 'end range' and the whole minimalist procedure is not comparable to

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the therapeutic alliance MDT clinicians develop in the assessment process to formulate a diagnosis TOGETHER with the patient [18].

The authors imply that MDT is not addressing the multidimensional nature of LBP conditions. Here Rabey and colleagues missed substantial evidence that MDT does successfully address issues identified as barriers to recovery. Earlier studies have shown that MDT intervention can significantly reduce fear and disability beliefs [2], somatization [3], fear avoidance [2,4,19] and depressive symptoms [3], as well as improving pain self-efficacy [4]. The strong emphasis of MDT on education, empowerment, reassurance, a self-treatment focus and a patient-centred approach may well be responsible [19].

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