Clinical examination of the lumbar spine comprises pain provocation tests including active trunk movements and passive accessory intervertebral motions (PAIVMs). These tests help to determine a pain provocative movement direction and the lumbar level(s) of involvement, which in turn helps to determine manual therapy management of low back pain (LBP).

Objectives: To evaluate the inter-examiner agreement and validity of these combined pain provocation tests.

Method: Two blinded raters examined 36 subjects (18 asymptomatic; 18 subacute non-specific LBP). Two types of pain provocation tests were carried out: Physiological movements in single (flexion/extension) and combined planes; PAIVMs of each lumbar vertebra in prone with the lumbar spine in neutral, flexion, and extension position.

Results: The inter-observer agreement was good to excellent for the identification of flexion \( [K = 0.87 - 1] \) or extension \( [K = 0.65 - 0.74] \) as the most painful pattern of spinal movement.

In healthy subjects 0% were identified as having a flexion provocative pattern and 8.8% were identified as having an extension provocative pattern.

In the LBP group, 20% were identified as having a flexion provocative pattern versus 60% with an extension provocative pattern.

The average inter-examiner agreement for PAIVMs was moderate to excellent \( [K = 0.42 - 0.83] \).

The lower lumbar vertebrae showed a significant \( (p<0.001) \) higher prevalence of positive pain responses to PAIVMs than the upper lumbar vertebrae in each group and significant difference in the prevalence of positive responses between the groups as well.

The examiners showed acceptable sensitivity \( [0.67 – 0.87] \) and specificity \( [0.82 – 0.85] \) to distinguish subjects with LBP using the clinical classification rule.

Conclusion: The use of a combination of pain provocative tests have acceptable inter-examiner reliability and validity to identify the main pain provocative movement pattern and the lumbar segmental levels of involvement. These tests can be used with confidence by clinicians to aid in the manual therapy management of LBP.
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