

Treatment outcomes for low back pain (LBP) can be equivocal because effective classification systems that match patients to specific treatments are lacking. Physical therapists (PTs) use the Movement System Impairment (MSI) classification approach that includes a standardized exam consisting of >200 exam items; however, it is uncertain if all exam items are needed to provide accurate classifications. Therefore, this study examined the validity of a shortened MSI exam by determining the agreement: (1) between 2 PTs using the original exam data; (2) among 4 raters using the shortened exam; (3) between classifications derived from the original exam with those compared to a shortened exam.

Aim 1: using the original exam, one PT examined and classified subjects with LBP (n=129) while the other PT later reclassified the same subjects using the same data. To reduce the number of exam items, we used a Principal Components Analysis on data collected from the Rotation and Extension with Rotation subgroups (n=121). Aims 2 and 3: the percent agreement and kappa statistics were computed for the 4 raters' shortened MSI reclassifications.

With the original exam, the 2 PTs had a percent agreement of 95% (kappa=0.87). Using the shortened exam, 4 raters had a percent agreement of 88% (kappa=0.82). Comparing raters' agreement on the original exam to the shortened exam classifications, the overall percent agreement ranged from 68%-70% (kappa=0.45-0.47). The inter-rater agreement for the Rotation and Extension with Rotation subgroups were 0.63-0.66 and 0.59, respectively.

The 2 PTs were reliable when comparing the subjects' original MSI classifications. The 4 raters' high inter-rater reliability of subjects' shortened MSI classifications showed that key items for classifications were not missing. Lastly, the moderate agreement in classifications between the original vs. the shortened MSI exams indicates the shorter exam holds promise for clinical use and will allow improved clinical efficiency.