FMS Squat Assessment and 2D Video Motion Analysis as Screening Indicators of Low Back Pain: A Cross Sectional Case- Study

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Abstract

Aim: Low back pain (LBP) is a disabling condition to individuals in the United States and physical therapy (PT) has been proven to be a beneficial treatment by analyzing their movement patterns. The main objective of this study was to analyze the deep squat component of the Functional Movement Screen (FMS) as an indicator of LBP while simultaneously using 2-D analysis. **Method:** This cross-sectional case study included 36 participants that completed a total of six deep squats. Three raters scored the FMS score of each participant. **Results**: The association between FMS score and the presence of LBP showed to be insignificant (p=0.119). Knee joint angles with 2-D analysis demonstrated a moderate correlation (ρ=0.520) to those with LBP, as well as knee joint angles on the ground (ρ=0.461). **Conclusion**: This study concluded that the FMS deep squat assessment was not a objective indicator of patients with LBP whereas 2-D motion capture was an objective measure.

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Introduction

Low back pain (LBP) is a prevalent and disabling condition creating personal and financial burdens on patients (Hoy et al., 2012). Low back pain is further classified as discomfort below the twelfth