

EVALUATING THE RELATIONSHIP BETWEEN CLINICAL ASSESSMENTS OF APPARENT HAMSTRING TIGHTNESS: A CORRELATIONAL ANALYSIS

Brittany L. Hansberger, DAT, AT¹

Rick Loutsch, DAT, AT²

Christy Hancock, DAT, AT³

Robert Bonser, DAT, AT, PES⁴

Alli Zeigel, DAT, AT⁵

Russell T. Baker, PhD, DAT, AT⁶

ABSTRACT

Background: Hamstring tightness is a common condition typically assessed via the active knee extension (AKE), passive straight leg raise (PSLR), V-sit and reach (VSR), and finger-floor-distance (FFD).

Purpose: The purpose of this study was to investigate the relationships between four common clinical tests of apparent hamstring tightness. A secondary purpose was to compare the differences in correlations between sub-groups based on positive test findings.

Study Design: Descriptive, correlational laboratory design.

Methods: Recreationally active individuals (N=81; 23.7 ± 5.9 years) performed the AKE, PSLR, VSR, and FFD in a randomized order, and subsequent correlational analyses were conducted.

Results: Strong correlations were identified between the VSR and FFD ($r = -.798$, $r^2 = .637$, $p < .001$); moderate correlations were demonstrated between the PSLR and FFD ($r = -.565$, $r^2 = .319$, $p < .001$) and PSLR and VSR ($r = .536$, $r^2 = .287$, $p < .001$). Low correlations were found between the PSLR and AKE ($r = -.284$, $r^2 = .081$, $p = 0.01$), AKE and VSR ($r = -.297$, $r^2 = .088$, $p = .007$), and AKE and FFD ($r = .263$, $r^2 = .069$, $p = .018$). If one assessment was identified in a subject as dysfunctional, all relationships were affected, regardless of which assessment was dysfunctional.

Conclusions: The AKE, one of the most common measures for apparent hamstring tightness, has low correlations with the other assessments. Based on the findings of this study, it is possible that not all assessments of AHT are measuring the same phenomena, with each involving different factors of perceived hamstring length.

Level of Evidence: Level 2b.

Key Words: Active knee extension, gold standard, hamstring length, treatment-based classification

CORRESPONDING AUTHOR

Brittany Hansberger

Towson University

8000 York Rd,

Towson, MD 21252

E-mail: b_hansberger@yahoo.com

¹ Towson University, Towson, MD, USA

² Northwestern College, Orange City, IA, USA

³ Azusa Pacific University, Azusa, CA, USA

⁴ Waynesburg College, Waynesburg, PA, USA

⁵ Colorado Mesa University, Grand Junction, CO, USA

⁶ University of Idaho, Moscow, ID, USA