

ORIGINAL RESEARCH

RELIABILITY AND VALIDITY OF A PARTIAL WEIGHT BEARING MEASURE OF LOWER EXTREMITY PERFORMANCE

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ABSTRACT

Background. Methods of measuring lower extremity function is limited for those with partial weight bearing (PWB) status in early phases of a lower extremity rehabilitation program.

Objectives. The purpose of this study was to measure intra-rater reliability of two lower extremity PWB performance measures using an incline exercise apparatus and to evaluate the concurrent validity and responsiveness to change of these two measures.

Methods. Thirty-seven adult patients with lower extremity injuries were measured on two PWB measures (PWB20 and PWB30) of lower extremity performance as well as several common measures of LE function. After initial testing, subjects were asked to return for retesting, following four to six weeks of rehabilitation intervention. Reliability of the data from the measures was tested using intraclass correlation coefficients (ICC); validity was based on bivariate correlations of the measures. The minimal detectable change (MDC) value and limb symmetry index (LSI) were used to study the responsiveness of the PWB measures.

Results. The ICC for the PWB20 and PWB30 were 0.95 and 0.98, respectively. The bivariate correlations of the PWB20 with stair climbing and walking speed were greater than those of the PWB30. Correlations ranged

from $r = 0.49$ to 0.72 between the PWB measures and the functional measures. For most patients, their change in score between initial testing and follow-up exceeded the MDC; the LSI improved for all patients.

Conclusion. Using the incline apparatus yielded reliable PWB data. In addition, performance on the PWB measures correlated fairly well with common measures of function.

Key words: partial weight bearing, incline apparatus, reliability, validity

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