How Functional Movement Screening Scores Correlate to Y-Balance Scores

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Introduction

The Functional movement screening test (FMS) and the Y-Balance test (YBT) are both assessments that are used to predict injury risk among various populations. The FMS is a series of movements that are evaluated on the basis of the individual’s ability to complete a specified movement without alterations in balance and form. This test includes a variety of movements that cover the overall mobility of the entire body. It is said to identify “functional movement impairments and asymmetries” (Badenou et al. 2015). These criteria can help identify the injury risk of the individual being assessed.

The YBT is also designed to determine injury risk among the sample being assessed. This test specifically is said to determine the injury risk of the lower extremities. This test uses three different movements and is said to determine “limits to stability and asymmetrical balance”, which in turn, similar to the FMS, are used to determine injury risk (Shaffer et al. 2013).

Both the FMS and the YBT serve the same purpose, as it would be expected that the scores of both tests should have a strong positive correlation. The purpose of this study is to determine the level of correlation between the FMS and YBT assessments. The literature says that these two assessments have a moderately positive correlation (Koçak et al. 2019). The hypothesis of this study is that the FMS and YBT assessments will have a moderately positive correlation.

Methods

- FMS is used to show functional movement deficiencies. FMS aims to identify imbalances in mobility and stability.
- The Y-Balance Test is used to measure dynamic balance.
- The duration for testing lasted approximately two days. The FMS test was performed after a ten minute warm-up was completed. After twenty-four hours, the YBT was assessed respectively the same as FMS.
- Independent Variable – FMS and Y-Balance Test
- Dependent Variable – Correlation data between the two tests
- The data collected is between both tests and the quantitative ratios respectively achieved.

Results

The first correlation shows the Y-Balance test results, which consist of Anterior (R,L), Posteriormedial (R,L), Posteriorlateral (R,L), and Composite scores (R,L). These results showed all subjects were either at or above average. The second correlation table shows the FMS test results which consist of deep squat, hurdle step, inline lunge, shoulder mobility, impingement clearing test, active straight-leg raise, trunk stability push up, press-up clearing test, rotary stability, and posterior rocking clearing test. These results also show all subjects were either at or above average.

<table>
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<tr>
<th>FMS Scores as Compared to Average</th>
<th>Composite (R) Scores as Compared to Average</th>
<th>Composite (L) Scores as Compared to Average</th>
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<td>Score</td>
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Discussion

The norms for exercise, rest, and variables are all neutral in relation to changes. Exercise parameters are conducted to run the same throughout testing. Rest is also the same between participants being twenty-four hours of time. The variables are congruent to testing.

Results found in the three bar graphs were averages compared to the participants included in this study. Bar graph 1 are the FMS scores in relation to average scores. Bar graph 2 & 3 show the results between participants and average scores of the YBT.

Discrepancies can be related back to the FMS scoring parameters and the leniency at which scores were given. As for YBT, scoring were correctly calculated.

FMS is designed to identify movements that increase the risk for injury and insufficient movement reducing performance values. YBT is designed as a simple and reliable test to measure a person’s risk for injury based on dynamic balance.

Conclusion

This lab was conducted to determine the correlation between FMS scores and YBT scores. The tests were conducted over a two day period with the FMS being done on the first day and the YBT being done of the second day. This allowed for the subjects to be rested between the two tests. The lab performed confirmed the hypothesis presented by the literature and our group. This, in turn, means that the data provided has a moderately positive correlation. The main error found within this lab is the error in the scoring of FMS test.