

IMPLEMENTING A STANDARDIZED INTERVENTIONAL EXERCISE REGIMEN TO IMPROVE FUNCTIONAL MOVEMENTS IN FEMALE COLLEGIATE ATHLETES

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ABSTRACT

Background: Interventional exercises have been developed to help athletes improve scores on the Functional Movement Screen™ (FMS™). However, there is a paucity of research on the effects of a similar program in female athletes, as well as the effects of a standardized corrective exercise regimen. The purpose of this study was to assess whether an in-season, standardized interventional exercise program improves FMS™ score asymmetry and the composite score of female collegiate athletes.

Study Design: Prospective, quasi-experimental, cohort study

Methods: Forty-one (mean age 19.5 ± 1.2 years; body mass, 70.6 ± 11.5 kg ; height, 1.70 ± 0.083 m) NCAA Division III female soccer ($n = 10$), softball ($n = 17$), and basketball ($n = 14$) players participated in this study. The athletes completed the FMS™ screens prior to their season, regularly participated in four in-season standardized corrective exercises throughout three to four month athletic seasons, and completed the FMS™ screens in the postseason.

Results: The average score of all athletes before the season was 15.52 ± 0.63 and 16.04 ± 0.72 after the season. While the mean score of soccer players increased from 14.80 ± 0.92 to 16.1 ± 1.52 and the mean score of softball players increased from 15.83 ± 1.89 to 16.72 ± 1.41 at the end of the season, the mean score of basketball players dropped from 15.93 ± 1.49 to 15.29 ± 1.59 . Women's basketball players experienced a decrease in their composite FMS™ score ($\bar{x} = -0.571$, $p < 0.01$), while women's soccer players ($\bar{x} = +1.30$, $p < 0.05$) and softball players ($\bar{x} = +1.12$, $p < 0.05$) experienced an increase in mean score 2.28 times and 1.96 times greater in magnitude than the decrease in basketball players' composite FMS™, respectively. Fewer total athletes demonstrated asymmetries at postseason testing, decreasing from 24 at preseason testing to 15 at post-season testing ($p < 0.01$). Significant differences were not noted between athlete age and FMS™ scores ($p > 0.05$).

Conclusions: Standardized interventional programs during athletic teams' seasons may be used to help increase FMS™ scores and reduce asymmetry. Though more studies are warranted to address the negative effects of this standardized program in women's basketball players, this study demonstrated that the number of asymmetries significantly decreased from pre- to postseason among soccer and softball players, which may have implications for a higher resistance to injury.

Levels of Evidence: 3

Keywords: Asymmetry, corrective exercises, female athletes, Functional Movement Screen™ (FMS™), Movement system

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