Six-week Pilates Program Improved Postural Stability, Balance, and Isometric Back Strength in College-aged Athletes

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Pilates training engages core musculature and utilizes controlled repetitions of various movements to improve muscular strength and endurance, flexibility, balance, and posture. Although a growing body of research identifies the benefits of Pilates training for middle-aged and older adults, little emphasis has been placed on evaluating athletic populations. PURPOSE: To determine the effects of a short-term Pilates training program on postural stability, balance and core isometric back strength in NCAA DIII and competitive club sport athletes. METHODS: The experimental group of 16 off-season college-aged female athletes participated in a supervised Pilates training program, which took place two times each week for six weeks. The 30-minute Pilates sessions consisted of body weight training that progressed to the incorporation of dumbbells. Pre- and post-test measurements were taken in three functional tests, which included Force Plate Tandem Balance (FPTB), Limits of Postural Stability (LPS), and Biering-Sorensen Back Extension (BSBE). A control group of 10 college students, who maintained their normal physical activities, but were not involved in the Pilates training program, completed pre- and post-testing for comparison. RESULTS: There were no significant differences between the experimental and control groups at baseline testing. The control group did not show any significant changes between pre- and post-test measurements. The experimental group decreased path length in the FPTB assessment (39.8 inches vs. 36.5 inches, $p<0.05$). The experimental group also exhibited significant improvement in postural control score on the LPS assessment (37.1 vs. 47.4, $p<.001$). Finally, there was a significant increase in seconds held during the BSBE assessment among the experimental group (172.4 seconds vs. 187.7 seconds, $p<.05$). CONCLUSION: A six-week progressive Pilates program contributed to significant decreases in single-foot sway, increases in postural stability, and increases in isometric back strength in female college-aged athletes.