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Effect of whole-body vibration exercise and muscle strengthening, balance, and walking exercises on walking ability in the elderly.

Kawanabe K, Kawashima A, Sashimoto I, Takeda T, Sato Y, Iwamoto J.

Kawashima Orthopaedic Clinic, Chiba, Japan.

Abstract

The present study was conducted to determine the beneficial effect of whole-body vibration (WBV) exercise in addition to muscle strengthening, balance, and walking exercises on the walking ability in the elderly. Sixty-seven elderly participants were divided into two groups; the WBV exercise plus routine exercises group (n=40) and the routine exercises alone group (n=27). WBV exercise was performed on a Galileo machine (Novotec, Pforzheim, Germany) at an intensity of 12-20 Hz, for a duration of 4 minutes, once every week. All the participants in both the groups were similarly instructed to undergo routine exercises such as balance and muscle strengthening training, and take walking exercise twice a week. The period of this study was 2 months to evaluate the acute effects of WBV exercise. The mean age of the participants was 72.0 years (range, 59-86 years). At baseline, there were significant negative correlations between age and the walking speed, step length, and maximum standing time on one leg. After the 2-month exercise program, the walking speed, step length, and the maximum standing time on one leg were significantly improved in the WBV exercise plus routine exercises group, while no significant changes in these parameters were observed in the routine exercises alone group. Thus, the present study showed the beneficial effect of WBV exercise in addition to muscle strengthening, balance, and walking exercises in improving the walking ability in the elderly. WBV exercise was safe and well tolerated in the elderly.

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