

Community-based Tai Chi and Injurious Falls, Balance, Gait, Fear of Falling in Older People

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Abstract

BACKGROUND AND PURPOSE: It is important to determine the effect of adherence to a tai chi program on falls and related functional outcomes in older people. This study examined the effect of a community-based tai chi program on injurious falls, balance, gait, and fear of falling among people aged 65 years and older in Taiwan.

SUBJECTS AND METHODS: In 6 rural villages in Taichung County, 1,200 subjects participated in the initial assessment. During a 1-year intervention period, all study villages were provided with education on fall prevention. Two villages had been provided tai chi exercise (n=472 participants or "tai chi villagers"), and 4 villages served as control villages (n=728 participants or "control villagers"). Injurious falls were ascertained by telephone interviews every 3 months over a 2-year study period; additionally, balance, gait, and fear of falling were assessed in 2 follow-up assessments.

RESULTS: Eighty-eight subjects, 83 from the tai chi villages and 5 from the control villages, participated and practiced in the tai chi program (the group labeled "tai chi practitioners"). After the tai chi program, injurious falls among the control villagers significantly declined by 44% (adjusted rate ratio [RR]=0.56; 95% confidence interval [CI]=0.36-0.92). Compared with the results for the control villagers, the decline was 31% greater (RR=0.69; 95% CI=0.30-1.56) among the tai chi villagers and 50% greater (RR=0.5; 95% CI=0.11-2.17) among the tai chi practitioners; the results did not reach statistical significance. Furthermore, compared with the scores for the control villagers, the scores for the tai chi practitioners increased by 1.8 points (95% CI=0.2-3.4) on the Tinetti Balance Scale and increased by 0.9 point (95% CI=0.1-1.8) on the Tinetti Gait Scale. No significant changes in the fear of falling were detected among the tai chi practitioners, tai chi villagers, and control villagers.

DISCUSSION AND CONCLUSION: Tai chi can prevent a decline in functional balance and gait among older people. However, the reduction in injurious falls attained with tai chi did not reach statistical significance; the statistical inefficiency may have resulted partly from the large decline in injurious falls in control villagers. Finally, the unexpected effect of educational intervention on reducing injurious falls in different settings needs to be further examined.