



# Interdisciplinary team approach for the elderly of frailty : The community-based outpatient care mode in Taiwan

Tsuei-Ping Lee<sup>1</sup>, Chih-Yuan Fang<sup>1</sup>, Yu-Han Tseng<sup>1</sup>, Ching-Lin Shih<sup>1</sup>, Huey-Jen Lay<sup>2</sup>

<sup>1</sup>Physical Therapist of Rehabilitation Department, Ministry of Health & Welfare Feng Yuan Hospital, Taichung, Taiwan, R.O.C.  
<sup>2</sup>Superintendent of Ministry of Health & Welfare Feng Yuan Hospital, Taichung, Taiwan R.O.C.

## Objective

Elderly frailty is not only a decline in physical strength, but a gradual decline in the physiological functions of multiple systems. The prevalence of frailty among the elderly in Taiwan is about 8.3%.

Resistance training can improve the muscle strength and physical activity of the elderly with significant effects. In this study, 12 weeks of self-training exercise at home with elastic bands can improve the related functional indicators of the elderly, promote the quality of life and reduce the state of disability.

## Methods

A quasi-experimental design with a interdisciplinary intervention was used in frail elders from the community. The Fried frailty index, grip strength of both hands, 6-meter walking speed test and waist circumference were measured before and after the intervention.

A one-hour exercise group education course was given before exercise, followed by 12 weeks self-training exercise at home, including low intensity resistance training with elastic band (Ratings of Perceived Exertion level 11), stretch exercise and aerobic exercise (two sets a week, 40 minutes one set). The physical therapist adjusted the training intensity of the subjects based on a total of three time points once a month (Figure 1). SPSS 22.0 version was adopted as data statistical analysis.

## Results

Average age in 82 completed of 104 recruited cases is 71.5±4.8 y/o and 65.9% are women. After 12 weeks of intervention, they accomplished 2.5±0.8 times of group health education courses and 20.4±14.3 sets of elastic-band home exercise. The frailty index (pre-intervention 1.8±0.8, post-intervention 1.3±0.6, p<0.001) and women's waist circumference (pre-intervention 82±9.9 cm, post-intervention 80.4±9 cm, p=0.005) were both significantly decreased. The grip strength ( for men, pre-intervention 31.6±5.2kg, post-intervention 34.0±6.5kg, p=0.01; for women, pre-intervention 20.0±4.1kg, post-intervention 21.9±4.5kg, p<0.001) and the walking speed of 6 meters (pre-intervention 0.86±0.2 m/s, post-intervention 0.89±0.2 m/s, p=0.014) had significantly increased (Table 1).

Table 1. Assessment before and after 12weeks intervention.

	Pre-intervention	Post-intervention	p value
Fried frailty index	1.8±0.8	1.3±0.6	<0.001
Grip strength (male) (kg)	31.6±5.2	34.0±6.5	0.01
Grip strength (female) (kg)	20.0±4.1	21.9±4.5	<0.001
6-meters walking speed test (meter/sec)	0.86±0.2	0.89±0.2	0.014
women's waist circumference (cm)	82±9.9	80.4±9	0.005

## Conclusion

The study in Taiwan showed a 12-week, interdisciplinary team approach for elderly of frailty with elastic-band home exercise mode, improving the frailty index, waist circumference, grip strength and walking speed with statistically significant difference. In the future, we will consider different duration of intervention and variety of sports field, combined with keeping diary records and re-visit physical therapists giving health education guidance, in order to get more improvements on the function of the frail elderly.

**Keywords:** Exercise, Elderly, Frailty, Interdisciplinary team approach

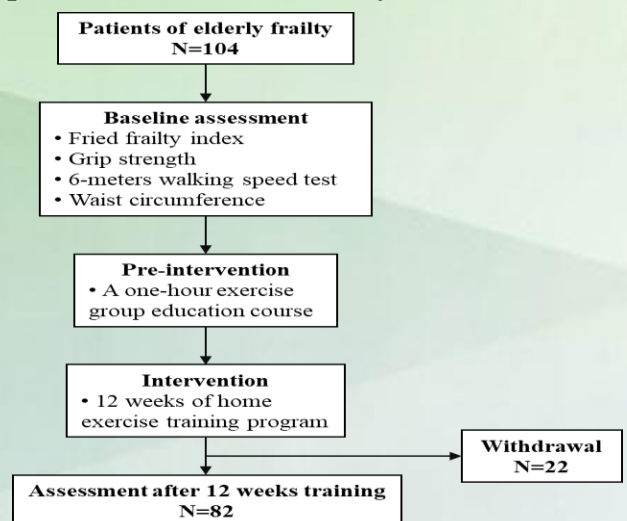


Figure 1. Flow diagram of study protocol.