



# Effects of Multiple Preventive Care Programs on Functional Fitness Training in Rural and Suburb Elderly

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## Background:

The aging of the population is an international trend. The skeletal muscle mass and muscle strength of the elderly will accelerate and decrease with age. Long term plans carry forward in Taiwan rural. The aims of this study were to assess the physical activity level and the prevalence of sarcopenia and frailty in the rural and suburb community-dwelling elderly adults; furthermore, we explored the effectiveness of functional fitness of the participants after the twelve-week intervention of multicomponent exercises program (MCEP).

## Methods:

An experimental pre-test and post-test design was used to recruit elder in rural and suburb of southern Taiwan. The MCEP was performed once a week for 12 consecutive weeks. The data collection form includes basic personal data, health status, IPAQ Taiwan activity survey short-term questionnaire, physical activity and functional fitness testing items, etc. Descriptive statistics and paired sample t-tests were used for the analysis.

Table 1 Demographic characteristics of samples

Variable	Douliu (N=18) Mean±SD	Huwei (N=10) Mean±SD
Age	71.94± 9.18	69.9±6.26
Height	153.6±7.35	153.22±3.52
Body Weight	57.35±12.61	57.73±6.07
Number of Chronic Diseases	1.78±1.59	2.1±2.02
Education Level	Number (%)	Number (%)
Illiterate	-	7(70.0)
Primary & Junior High Schools	5(27.8)	3(30.0)
Senior High School & Vocational	5(27.8)	-
Junior Colleges	4(22.2)	-
University and Graduate School	4(22.2)	-

## Keywords:

Functional fitness, Multi-component exercise program, Sarcopenia, Frailty, Community-dwelling elderly adult

## Result:

The average age of the 28 subjects read 69.9±6.26, 71.94±9.18 years old in the suburb and rural. Participants had significant improvements in the performances of open-eye stand, chair stand, arm curl, chair sit-and-reach, 2-min step and grasp tests after the MCEP, but the performances of close-eye stand, back scratch and 8-foot up and go tests did not have significant changes, which were associated with the lack of strength and duration of upper limb flexibility, balance training and aerobic exercise.

Table 2 Compare of the effects of the performance of the functional fitness and retention of fitness in rural(Huwei) and suburb(Douliu) community

Variable	Pre-post test (Suburb, n=18)	Retention Value (Suburb, n=15)	Pre-post test (Rural, n=10)	Retention Value (Rural, n=9)
Open-eye stand	.365	.016*	.010*	.052
Close-eye stand	.125	.287	.178	.023*
30s chair stand	.000***	.000***	.858	.169
30s arm curl	.000***	.000***	.001**	.000***
Back scratch test	.171	.723	.001**	.242
Chair sit-and-reach	.031*	.082	.010*	.029*
8-foot up and go test	.388	.045*	.620	.006*
Two-minute step	.000***	.000***	.038*	.016*
Grasp tests	.039*	.202	.001**	.091

P<.05\*, P<.01\*\*, P<.001\*\*\*

## Conclusion:

Therefore, we concluded that an twelve-week MCEP has the self-efficacy of encouraging elderly adults to exercise regularly. There is a gap between the suburb and the rural areas in terms of education and leadership. However, for the physically frail elderly adults, the probability of autonomous physical exercising after returning home was low, which led to poor fitness. The intervention of this exercise program can serve as a reference for health prevention and promotion in communities.