

# The effectiveness in preventing frailty of exercise intervention provided by community pharmacists to older persons with chronic conditions: a pragmatic randomized controlled trial

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## 【Background】

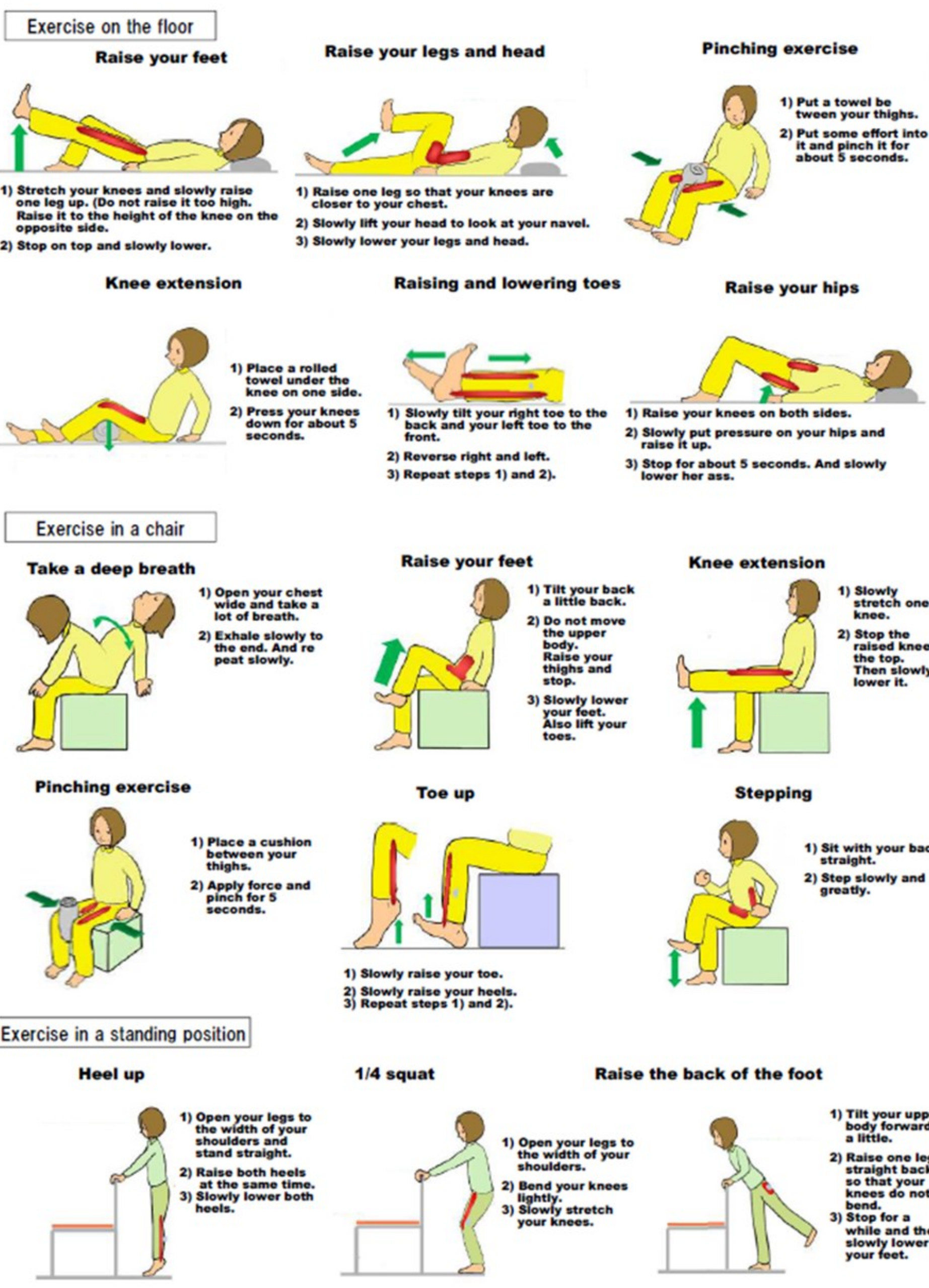
Once elderly patients become frail, the risk of falls, bone fractures, and other problems increases. Exercise intervention is a form of prevention that has a high degree of evidence.

## 【Objective】

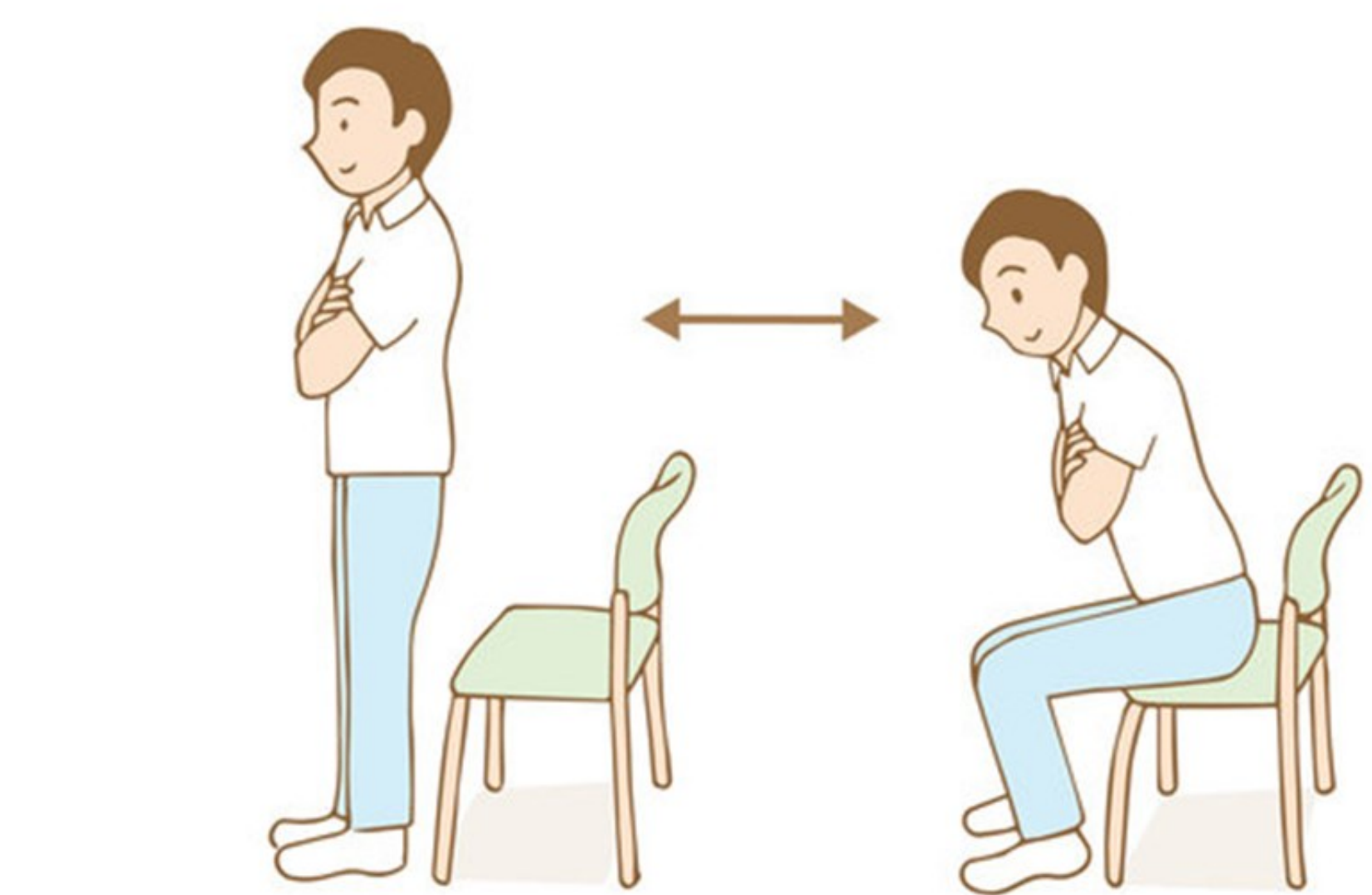
We investigated the effectiveness of frailty prevention consisting of intervention by community pharmacists at 11 pharmacies operated by Osaka Pharma Plan.

## 【Methods】

In total, 103 elderly patients between 70 and 79 years of age (53 males and 50 females) who were suffering from chronic illnesses and who visited one of 11 pharmacies between January and March 2021 were enrolled. They were then randomly assigned to either the Intervention group (IG: 6 pharmacies, 61 patients) who were subjected to intervention by a pharmacist, or the Usual Care group (UG: 5 pharmacies, 42 patients) who were not subjected to intervention. At the beginning of the trial and 6 months after, their muscle mass, etc. were measured using a body composition meter, and their Five-Times Sit-To-Stand Test results were also measured. Patients in the IG were provided with information by way of leaflets during the time they were guided regarding taking their medication for a period of one to six months that encouraged exercising at home. Those in the UG were given the standard guidance related to taking their medication.



we distributed exercise documentation to patients

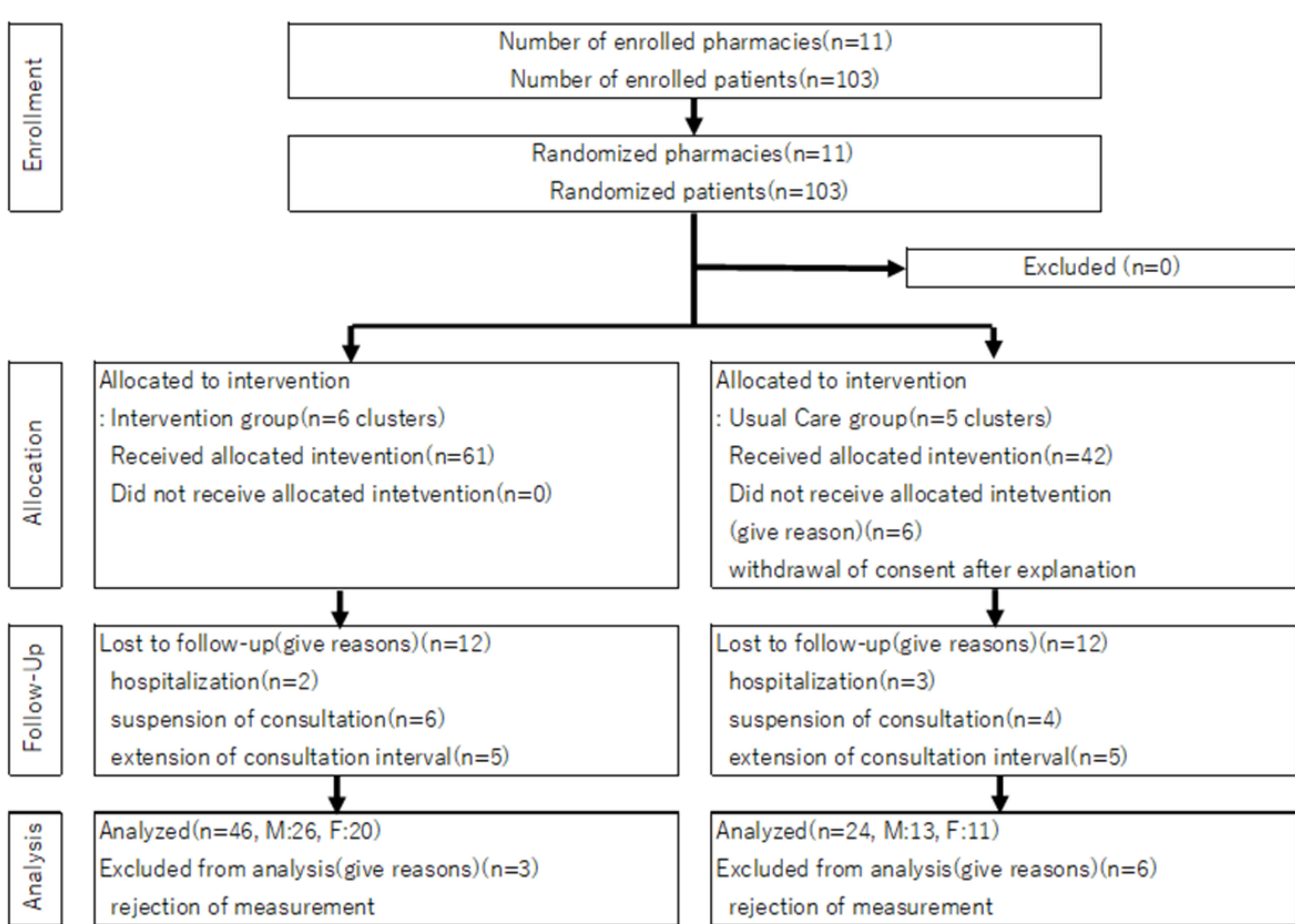


Schematic of the Five-Times Sit-To-Stand Test

COI Disclosure Information  
Noritake HIROTA  
I have no financial relationships to disclose.

## 【Results】

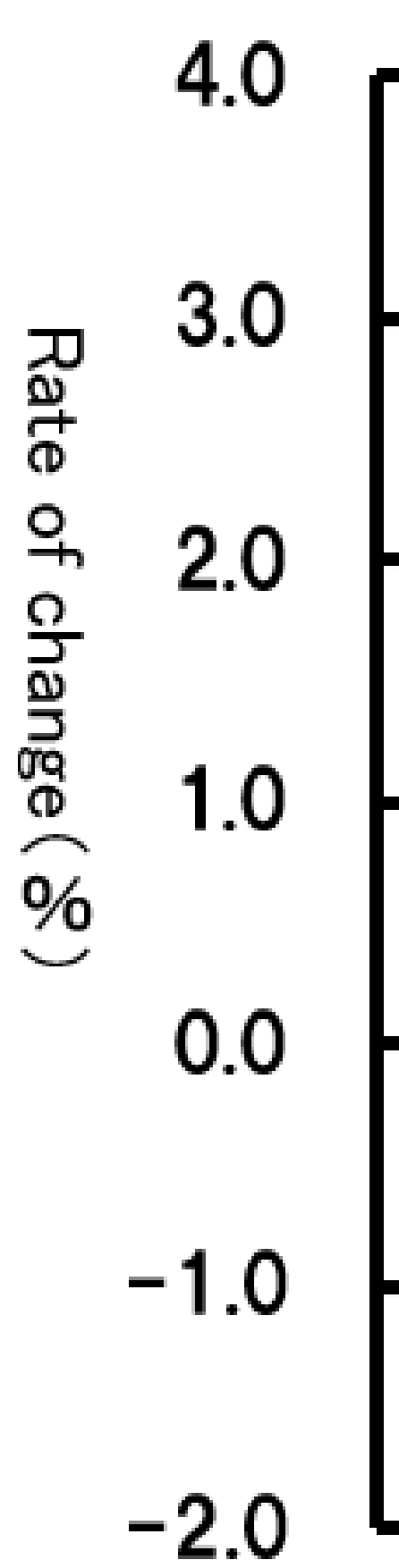
The amount of change in muscle mass was 1.08±7.83% (95%CI: -1.24-3.41) in IG and -0.43±2.73% (95%CI:-1.58-0.72) in UG, indicating that there was a trend toward an increase in IG. The percent change in the Five Times Sit-To-Stand Test times at +6M was -0.002±0.24% (95%CI: -0.09-0.05) in IG and -0.04±0.21% (95%CI:-0.13-0.07) in UG, but in cases in which the second measured time was faster than the first measured time, the results were 65.2% for IG and 29.2% for UG, indicating a significant difference ( $p = 0.00563$ ).



Number of enrolled patients in each group and number of patients whose muscle mass could be measured after 6 months

## The amount of change in muscle mass

**【Intervention group (IG)】**  
n=46  
Average rate of change: 1.08%  
Standard Deviation: 7.83%  
95%CI: -1.24% ~ 3.41%



**【Usual Care group (UG)】**  
n=24  
Average rate of change: -0.43%  
Standard Deviation: 2.73%  
95%CI: -1.58% ~ 0.72%

Mann-Whitney U test  $p = 0.376$

## Rate of change in secondary endpoints

Second time	IG	UG
Faster	30 (65.2%)	7 (29.2%)
No change	16 (34.8%)	17 (70.8%)
Slower		
Total	46 (100.0%)	24 (100.0%)

Odds Ratio: 4.48  $p = 0.00563$

Although there was a trend toward increased muscle mass with the pharmacist's intervention, there was no statistically significant difference.

## 【Conclusion】

Despite the fact that the amount of time community pharmacists can devote to providing guidance on taking medications is limited, it has been previously reported that providing information to patients causes a change in patient behavior. The results of the present study are highly significant as they suggest the possibility that this may hold true even when used to prevent frailty, based on the evidence obtained.