運動訓練、環境改善及教育對老人跌倒預防之隨機控制試驗

A Randomized Controlled Trial of Exercise Training, Environmental Modification and Education on Preventing Falls among Elderly Fallers

中文摘要

目的：針對台中縣新社鄉 65 歲以上跌倒就醫老人，執行運動訓練、環境改善與教育等三種介入並後續追蹤一年。分析介入後老人發生再跌倒的次數與需就醫的跌倒次數，藉此評估三種介入對預防老人再跌倒的效果。方法：研究設計採用隨機控制試驗(randomized controlled trial)，並在跌倒老人家中進行介入。利用區塊隨機分派(block randomization)的方式，以 1：1：1 比例將跌倒老人隨機分配至運動訓練組、環境改善組與教育組。研究期間從 2003 年 7 月底至 2006 年 8 月，共有 150 位老人參與。資料收集包括(1)基線測量：於老人家中進行結構式問卷的面對面訪視。(2)追蹤訪視：介入後每月一次到老人家中進行面對面追蹤。資料分析是利用多維存活時間邊際方法之 PWP（Prentice-Williams-Petersen）模式來分析介入後一年老人發生再跌倒的次數，藉此評估三種介入對預防老人發生再跌倒的效果。結果：以教育組為對照組，運動訓練組的老人於介入後發生再跌倒之危險性下降 12%，但結果不顯著；環境改善組的老人於介入後發生再跌倒之危險性上升 19%，但結果亦不顯著。結論：相對於教育介入，雖然運動訓練與環境改善不能有效地預防老人跌倒，但運動訓練對預防老人跌倒似乎有其效果存在，未來需要較多樣本數的研究來確認本研究的結果。

英文摘要

Purpose: This randomized controlled study evaluates the effects of exercise training, environmental modification, and education on preventing falls among elderly fallers aged 65 years and older. Methods: The study design was a randomized controlled trial. We conducted three interventions of exercise training, environmental modification, and education at older people's home from July 2003 to August 2006. One hundred and fifty participants were randomly assigned to the three intervention groups. Data collection included: (1) baseline personal interviews, and (2) follow-up personal interviews per month for ascertaining the occurrence of fall over an 1-year period. The Prentice-Williams-Petersen proportional hazards model was used to investigate the effects of the three interventions in preventing falls among elderly fallers. Result: Over an 1-year study period, compared with the educational group, the risk of falls in exercise training group declined 12% and the risk of falls in environmental modification group increased 19%. However these results were not statistically significant. Conclusion: Although exercise training and environmental modification

do not effectively prevent falls among elderly fallers, exercise training may prevent falls potentially, if the sample size is sufficient. Therefore, future studies with larger sample sizes are needed to confirm our result.