• 系統編號	RG9810-0126
• 計畫中文名稱	跌倒老人之長期追蹤結果、骨質密度與太極拳運動
• 計畫英文名稱	--
• 主管機關	行政院衛生署
• 計畫編號	NHRI-EX98-9805PI
• 執行機構	台北醫學大學傷害防治學研究所
• 本期期間	9801 ~ 9812
• 報告頁數	68 頁
• 使用語言	中文
• 研究人員	林茂榮；；；；； Lin, Mau-roung；；；；；
• 中文關鍵字	骨質密度；跌倒；功能結果；傷害；老人；太極拳；；
• 英文關鍵字	Bone mineral density；Fall；Functional outcome；Injury；Older people；Tai chi；；

• 中文摘要

本計劃第一年研究成果分爲兩部分。第一部分是回顧老人跌倒預防介入策略之文獻，文獻回顧內容包括：跌倒風險評估、多重因子介入、運動訓練、調整用藥、改善環境、改善視力、補充維他命 D 與鈣、裝置心律調節器以及教育等。介入前應評估老人跌倒風險，對社區老人可使用簡易的步態平衡測試，對機構內(含安養院及醫院)老人可使用周全性跌倒風險評估。多重因子介入爲同時減少跌倒多項危險因子，已被證明是最有效且可靠的跌倒預防方法，但人力與經濟成本也最高；平衡運動(如太極拳)不只降低跌倒發生且能同時獲得其他身心健康利益；減少老人精神異常治療用藥可大幅較低跌倒，但老人用藥習慣不易改變；環境改善介入適合過去曾跌倒的老人；白內障手術能減少大部分視力不良老人的跌倒；維他命 D 與鈣補充與髖部護具對機構內老人跌倒的減少有顯著效果；裝置心律調節器只適合極少數老人；教育無法顯著降低老人跌倒。最後，本計劃亦討論跌倒預防介入方法選擇、臨床人員角色、機構內跌倒預防與研究、跌倒相關教育、以及健康專業間結合等老人跌倒預防相關議題。第二部分研究成果是以羅序分析(Rasch analysis)驗證世界衛生組織生活品質問卷簡明版(WHOQOL-BREF)應用於老人時的心理計量特性，WHOQOL-BREF 有生理、心理、社會、環境四個範疇。此部分以先前研究收集 1200 位六十五歲以上老人爲樣本，檢驗 WHOQOL-BREF 個每範疇的單一向度(scale dimensionality)、題目難度(item difficulty)、量尺信度與區別度(scale reliability and separation)、題目適中性(item targeting)、試題與受試者相對位置圖(item-person map)、以及題目差別功能(differential item functioning，簡稱 DIF)等心理計量特性。結果顯示 WHOQOL-BREF 四個範疇皆爲單一向度且具有良好信度。題目與受試者相對位置圖顯示每個範疇題目難度與受試者能力之間分配適切，但社會範疇在題目數量不足導致範圍不夠。心理範疇有一題(身體意象)使年輕老人與老老人之間有 DIF 存在，而社會關係範疇有兩題(性生活與朋友支持)使性別間(男、女老人)與兩組年齡間(年輕老人、老老人)有 DIF 存在。羅序分析是一種可全面評估 WHOQOL-BREF 心理計量特質的方法，可找出 WHOQOL-BREF 需改善的地方。身體意象、性生活、朋友支持三題在兩組年齡間有 DIF 存在，可能會造成健康相關生活品質測量誤差。

• 英文摘要

In the first year of this project, study results are divided into two parts. The first part is a review of strategies for fall-prevention in older people. Strategies for fall-prevention consist of fall-risk assessment, multifactorial interventions, exercise training, reduction in medications use, environmental modifications, vision improvement, vitamin D and calcium supplementation, cardiac pacing, and education. Before an intervention can be prescribed, a fall-risk assessment, including functional balance and mobility tests for the community-dwelling elderly and a more comprehensive battery of tests for the institutionalized and hospitalized elderly, needs to be conducted. Labor intensive and costly multifactorial interventions are the most effective and most consistent in reducing falls. Balance exercise programs, particularly tai chi, efficiently and effectively reduce falls and have other health-related benefits. Psychotropic medications can be reduced to prevent many falls, but it is difficult to change medication-taking behavior in the elderly. Changing the environment is an appropriate response in cases with a history of falls, and cataract surgery can reduce falls in those who are visually impaired. Vitamin D, calcium supplementation, and hip protectors are also effective for institutionalized elderly.

Cardiac pacing can help only a few elderly people while educational programs are ineffective. Finally, fall-related issues (including selection of an appropriate strategy for prevention), role playing of clinicians, study of falls prevention in institutionalized and hospitalized elderly, fall-related education, and coordination of health care practices, are discussed in detail. The second part of study results is the psychometric evaluation of the World Health Organization's Quality of Life (WHOQOL-BREF) questionnaire in older people using Rasch analysis. In the Rasch analysis, a total of 1200 subjects aged ≧65 years were recruited to complete the 26-item WHOQOL-BREF. Scale dimensionality, item difficulty, scale reliability and separation, item targeting, item-person map, and differential item functioning (DIF) were examined. The four WHOQOL-BREF scales (physical capacity, psychological well-being, social relationships, and environment) were found to be unidimensional and reliable. The item–person map for each domain indicated that the spread of the item thresholds sufficiently covered the latent trait continuum being measured. However, gaps in content coverage were identified in the social domain. Analyses of the DIF revealed that one psychological item (body image) exhibited DIF across the two age groups (old–old vs. young–old) and that two social items (sexual activity and friends' support) displayed DIF across genders and the two age groups. Rasch analysis is a comprehensive method of psychometric evaluation of the WHOQOL-BREF and identifies areas for improvements. Three items displaying age-related DIF (body image, sexual activity, and friends' support) may potentially cause biased health-related QOL assessments, and their impacts on scores should be carefully examined.