• 計畫中文名稱	血壓生物回饋之成效及機轉		
• 計畫英文名稱	Effects and Mechanisms of Real-Time BP Biofeedback		
• 系統編號	PG9404-0578	• 研究性質	應用研究
• 計畫編號	NHRI-EX94-9409SC	• 研究方式	補助(研究/辦理)
• 主管機關	行政院衛生署	• 研究期間	9401 ~ 9412
• 執行機構	台北醫學大學護理學研究所		
• 年度	94 年	• 研究經費	2795 千元
• 研究領域	護理學, 基礎醫學類		
• 研究人員	蔡佩珊,鍾文耀,郭博昭,張文英		
• 中文關鍵字	生物回饋；血壓自我調節；高血壓前期；第一期高血壓		
• 英文關鍵字	Biofeedback；Blood Pressure Self-Regulation；Prehypertension；Hypertension, Stage I		
• 中文摘要	計劃主要有下列四項目的：（一）評估一個爲期八週的即時血壓生物回饋訓練方案是否能降低高血壓前期或第一期高血壓病人的血壓及血壓與 HPA 對心理壓力之反應性、（二）評估血壓生物回饋其降低血壓的生理機轉、（三）探討急性血壓自我調節的機轉、（四）探討預測血壓生物回饋成效的因素及（五）分析即時血壓生物回饋在降低血壓之成本效益。此外，本計劃將研發並測試一套可提供即時視、聽覺血壓訊號的電腦軟體來作爲本研究施行血壓生物回饋之用。 本研究將採用雙盲、隨機分配及「安慰劑」控制的實驗設計。預計招收六十位十八到五十五歲的高血壓前期或第一期高血壓病人。利用隨機分配的方式，三十位個案分配到實驗組，另三十位個案作爲控制組。實驗組的個案每週接受一次生物回饋訓練課程，共計八次，在實驗室中運用非侵入性、連續性的血壓回饋訊息來練習調節血壓。在「安慰劑」回饋訊息的狀況下，控制組將在八週期間，同樣在實驗室中練習控制他們的血壓。在八週訓練期後，全部個案繼續被追蹤八星期，研究期間總計十六週。血壓、心率變異性、壓力感受器敏感度、皮膚溫度、血壓及 HPA 對心理壓力的反應性及二十四小時血壓將重覆地在訓練前、訓練一週及八週後測試。 探討血壓生物回饋在降低血壓的長期成效方面的研究很缺乏，研究血壓自我調節之機轉方面的資料更是有限。本研究將測試一個創新的血壓回饋系統之可用性及其應用在高血壓治療之可行性，並評估即時血壓生物回饋在血壓自我調節之成效及機轉，結果將有助提供有關施行生物回饋的科學根據。		
• 英文摘要	This double-blind, randomized, placebo-controlled study will examine 1) whether an 8-week real-time blood pressure (BP)		

	biofeedback program can reduce BP, BP reactivity, and HPA reactivity to mental stress in participants with prehypertension to stage I hypertension, 2) the physiologic mechanisms by which BP biofeedback lowers BP in participants with prehypertension to stage I hypertension, 3) the physiologic mechanism underlying acute BP self-regulation, 4) the means to predict which persons with prehypertension to stage I hypertension will be able to lower their BP using real-time BP biofeedback, and 5) the cost and effectiveness of real-time BP biofeedback as a modality for BP reduction. In addition, we will design and test a software system that allows for delivering both visual and auditory real-time BP signals and placebo signals in a pilot study with a separate group of participants. Sixty participants with prehypertension or stage I hypertension, aged from 18 to 55 will be recruited for this study. They will be randomly assigned into two groups: the experimental (N = 30) and control group (N = 30). Participants in the experimental group will be trained to self-regulate their BP with the use of real-time, continuous arterial BP feedback signals in eight once-a-week training sessions. Participants in the control group will be told to manipulate their BP while observing ? HHH ? HH ? H ? Hplacebo ? HHH ? HHH feedback signals in eight laboratory sessions. Following the treatment period, there will be an 8-week follow-up period, resulting in a total study period of 16 weeks. Clinic BP, heart rate variability, baroreceptor sensitivity, skin temperature, cardiovascular and HPA reactivity to stress, and ambulatory BP will be repeatedly measured at baseline, 1 week, and 8 weeks following the treatment period. Studies that examine long-term treatment effects of BP biofeedback are lacking and there are limited data available regarding mechanisms involved in acute BP self-regulation. This study will test the usability of an innovative BP biofeedback system and the feasibility of its application in the treatment of hypertension. The results of this study will determine the efficacy of BP self-regulation using real-time BP biofeedback and the mechanism by which BP biofeedback lowers BP. This will help to provide scientific rationale for the practice of BP biofeedback.