



Mobile Health Intervention Program: Efficacy of High-Risk Middle-aged and Elderly Adults Suffering from Hypertension and Hypercholesterolemia in Taiwan

Wu Meng-Ping, M.N., Chang Po-Lun, PhD; Lee Chien-Hsien, MD, PhD; Yu Wen-Ruey, MD;
Kao Mu-Jung, MD

Introduction: The objective of this study is to evaluate the effectiveness of a mobile health program targeting seniors with a high risk of hypertension and hypercholesterolemia. Taiwan has gradually become a country with a high percentage of senior citizens. With changes in diet and living habits, the number of seniors suffering from hypertension and hypercholesterolemia is on the increase. In recent years, the use of mobile medical applications for self-healthcare management has been increasing among the senior population. A particular medical application system was evaluated for efficacy in disease prevention, health alerts, and seeking early treatment by enabling participants to measure and control their own health, thus reducing unnecessary medical consultations and contributing to the more efficient use of limited medical resources. Method: The study subjects were selected from residents living in the Shilin district of Taipei City, Taiwan, aged between 50 and 70. All of our subjects were diagnosed with a high risk of hypertension and hypercholesterolemia. We used a structured questionnaire to collect data on participants' background, a Hypertension & High Cholesterol Management Self-Efficacy Scale questionnaire, and a Hypertension & High Cholesterol Self-Care Activities questionnaire. The participants were instructed in using the mobile medical APP for updating their relevant personal healthcare records (for instance: physiologic index, time of taking medicine, chronic disease management, etc.). Participants completed assessments at baseline and after 6 months. Results: 66 participants (mean age= 61.01) were evaluated throughout a 6-month study period. The results indicated that there was no change in their BMI, Triglyceride and HDL-C. In addition, their LDL-C had slightly dropped. However, there was a significant improvement in the SBP ($p < 0.001$), DBP ($p < 0.001$), and Self-Care Activities questionnaire ($p < 0.001$) between the baseline and the 6-month follow-up. Discussion: Reliable instruments were used to measure the effectiveness of the mobile health program for a senior population in Taiwan suffering from a high risk of hypertension and hypercholesterolemia. The application was found to have a positive effect on the self-healthcare of participants with hypertension and hypercholesterolemia and helped them maintain a higher level of healthy behavior in both physical and mental respects. Although there is no statistically significant difference in LDL-C, there was a slight improvement. Furthermore, we can use information relating to medical technology as well as to the health education program to build a better health and medical network system in the future so that senior participants with a high risk of hypertension and hypercholesterolemia could achieve a better quality of life.