ABSTRACT

Purpose: In the United States, 16 million individuals currently live with diabetes mellitus; approximately 20% of individuals over the age of 65 in North America have this condition. Age related physiological changes increase the risk for this disease, and because of the growth of the aging population in the United States, the prevalence of diabetes mellitus is on the rise. Patients with uncontrolled hyperglycemia have increased risk for many acute and chronic complications. Elderly patients, due to various socioeconomic factors as well as limited understanding of their condition, tend to have difficulty with blood glucose regulation, which is increased by lack of access to health care, resulting from family situations, geographic location, health insurance, family situation, physical ability or personal attitudes. The purpose of this study is to assess the effect of an individual diabetes education program on the understanding and management of diabetes mellitus in the homebound elderly population.

Methods: The population for this study consisted of patients over the age of 65 with diabetes mellitus, enrolled in the homecare program at one urban health care center. The participants were divided by the staff of the homecare program into a control and a study group. Both groups received the standard of care for their diabetic management and other medical conditions, and the study population was involved in an individual diabetes education course in their home, consisting of education on topics such as disease pathology, medications, foot care, diet, exercise and complications. A standard curriculum was used, but the education also addressed topics about which each patient had questions or concerns. The course involved 5 sessions of about 1 to 2 hours in length over a period of 5 weeks; education was administered by second-year physician assistant students. Impact of the education was assessed by measuring changes in hemoglobin A1C, BMI, waist-hip ratio, systolic blood pressure and weight, as well noting changes in knowledge by comparing results on a brief quiz about diabetes taken both pre- and post-education.

Results: Of the eight patients studied, there was no significant difference when comparing changes in systolic blood pressures of the subject to control groups ($p$-value 0.204). There was no significant difference between when comparing changes in body mass index of the subject to control groups ($p$-value 0.2758). There was no difference between the pre ($p$-value 0.0218) or post ($p$-value 0.908) hemoglobin A1C’s when comparing the subject and control groups. When comparing the pre and post test scores of subjects receiving education, scores trended toward significance ($p$-value 0.0781).

Conclusions: Based on results of this study, diabetic education in homebound elderly appears to improve knowledge, but no conclusive statements can be made regarding effects on disease progression.