Improvement in glycaemic control through structured diabetes self-management education (DSME) program

Wong KKC(1), Leung ELY(1), Woo YC(1), Yee ASW(1), Leung CY(1), Wong YF(1), Mak KY(1), Chan HKM(1), Lam SN(2), Tsui VYT(3), Yeung EWC(2), Yam HF(3), Lam JKY(1), Chow WS(1), Tan KCB(1)(4), Lam KSL (1)(4)

(1) Department of Medicine, (2) Department of Dietetics, (3) Department of Podiatry, Queen Mary Hospital (4) Department of Medicine, the University of Hong Kong

Keywords:
Diabetes
Glycaemic control
Empowerment
Diabetes Self-Management Education
Multidisciplinary
Type 2 Diabetes

Introduction
Diabetes is a common chronic disease associated with significant morbidity and mortality. Diabetes self-management education (DSME) is the process of teaching individuals to manage their diabetes and it is regarded as the cornerstone of care for individuals with diabetes. The aims of self-management education are to optimize metabolic control, prevent acute and chronic complications, and maintain quality of life at an acceptable cost.

Objectives
To assess the impact of a structured diabetes self-management education (DSME) program on the glycaemic control in patients with diabetes.

Methodology
Patients with type 2 diabetes attended complication screening and found to have sub-optimal glycaemic control, as defined by HbA1c level between 7.1% to 8.9%, were referred to KK Leung Diabetes Centre to attend a 3-hour DSME group program. The program includes multidisciplinary education and empowerment of patients on knowledge and skills in self-management by diabetes nurse, dietitian and podiatrist. Educational contents include knowledge and information on diabetes, lifestyle behaviours including diet and physical activities modifications; skills to improve glycaemic control, e.g. self-monitoring of blood glucose; tips on prevention and
identification of complications e.g. hypoglycaemia, hyperglycaemia, foot care, as well as coping skills. The baseline parameters for patients attended (the attendees) and not attended (the non-attendees) the DSME programme were compared. In addition, all patients attended the complication screening, regardless of their DSME attendance, had a reassessment of their glycaemic control in about six month. The change in HbA1c level of the attendees and non-attendees was assessed.

**Result**

From Aug 2013 to July 2014, 264 type 2 diabetes patients with sub-optimal glycaemic control were referred for DSME programme. 119 patients (male: 63 %) attended DSME with mean age 68.3 ± 10.9 and mean duration of diabetes 9.8 ± 7.6 years. There was no statistically significant difference in sex, age, duration of diabetes and baseline HbA1c level between the attendees and non-attendees. The DSME attendees showed significant improvement in HbA1c with the level dropped from 7.61% ± 0.61 to 7.29% ± 0.88 (P<0.001 ). Such an improvement in HbA1c level was not observed in the non-attendees (HbA1c 7.58% ± 0.49 to 7.50% ± 0.84, P=0.231). DSME programme, delivered in a multidisciplinary approach, is effective in improving glycaemic control by enhancing patients’ knowledge, skills and efficacy in self-management of diabetes. Patients with sub-optimal glycaemic control should be encouraged and motivated to attend DSME. Further individual reassessment can be considered to strengthen the beneficial effect of DSME in future.