



Title	Confirmatory factor analysis on traditional Chinese version of 26-item Diabetes Self-Efficacy Scale (C-DSES) in Chinese patients with type 2 diabetes mellitus
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Assessing self-efficacy behaviour of type 2 diabetes mellitus in primary care

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Introduction: Self-efficacy is a process that helps patients in self-management to take care of their quality of life and achieve satisfactory disease control. The study aimed to find out whether higher degree of self-efficacy was associated with better health-related quality of life (HRQOL) and glycaemic control in patients with diabetes mellitus in Hong Kong primary care.

Methods: A total of 488 type 2 diabetic patients (T2DM) attending a government GOPC in Hong Kong were interviewed face-to-face using a structured questionnaire containing the Chinese version of the 26-item diabetes self-efficacy scale (C-DSES) and the Chinese (Hong Kong) SF-12 Health Survey. Each C-DSES total score was correlated with glycaemic control measured by HbA1c, and the SF-12 Physical Component Summary (PCS) and Mental Component Summary (MCS) scores.

Results: 54.3% of subjects had HbA1c >7% (mean, 7.38±1.27%) and 51.2% were elderly (mean age, 65.3±11.0 years). C-DSES total score was correlated with SF-12 PCS ($r=0.26$, $P<0.001$) and MCS ($r=0.12$, $P=0.007$) scores. There was no correlation between C-DSES and HbA1c level, and no significant difference on C-DSES between good and bad glycaemic control. No correlation between SF-12 scores and HbA1c was found. Multivariate regression analyses showed that C-DSES total score was an independent predictor of PCS and MCS after adjustment for age, gender, BMI, duration of diabetes.

Conclusion: Our study has demonstrated a relationship between self-efficacy and HRQOL among diabetic patients. Improving self-efficacy may help improve HRQOL probably by improving illness coping even if there is no change to the disease severity. Further prospective studies should evaluate interventions for the improvement of self-efficacy of patients with diabetes mellitus.

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Introduction: Diabetes Self-efficacy Scale (C-DSES), translated to traditional Chinese version from the West, assesses the strength of patients' beliefs in their own abilities to respond to diabetes mellitus. The aim of study was to validate the factorial structure of traditional Chinese version of C-DSES by confirmatory factor analysis (CFA) for a use in a Hong Kong population with diabetes mellitus.

Methods: Traditional Chinese version of the 26-item C-DSES was administered by interviewers to 488 subjects with type 2 diabetes mellitus (T2DM). The C-DSES has six subscales including dietary management, regular exercise, medication taking, regular self-monitoring, foot care, and hyper- or hypoglycaemia prevention/treatment. The six-factor CFA model was examined by goodness-of-fit indices according to threshold criteria suggested by Joreskog & Sorbom.

Results: The fit of CFA model was good when Root Mean Square Error of Approximation (RMSEA) was close or less than 0.08; the ratio of Chi-square statistic to degree of freedom was between two and five; the goodness-of-fit index (GFI) was close to or greater than 0.9. Because RMSEA was 0.065 (90% CI, 0.060-0.070) and model Chi-square statistic of 869 with 284 degrees of freedom (ratio, 3.06), the CFA model provided a good fit even when the GFI with 0.88 was a bit lower than 0.9.

Conclusion: The six-factor model of C-DSES was revealed good factorial structure, supporting the construct validity of C-DSES in Chinese subjects with T2DM. This scale is an applicable and valid instrument to measure the effectiveness of interventions to control the blood glucose and prevent diabetic complications.

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