

## Diabetes empowerment scores among type 2 diabetes mellitus patients and its correlated factors: a cross-sectional study in a primary care setting in Malaysia

### ABSTRACT

**Background:** There are limited studies on diabetes empowerment among type 2 diabetes patients, particularly in the primary care setting. **Aim:** To assess the diabetes empowerment scores and its correlated factors among type 2 diabetes patients in a primary care clinic in Malaysia. **Methods:** This is a cross sectional study involving 322 patients with type 2 diabetes mellitus (DM) followed up in a primary care clinic. Systematic sampling method was used for patient recruitment. The Diabetes Empowerment Scale (DES) questionnaire was used to measure patient empowerment. It consists of three domains: (1) Managing the psychosocial aspect of diabetes (9 items); (2) Assessing dissatisfaction and readiness to change (9 items); and (3) Setting and achieving diabetes goal (10 items). A score was considered high if it ranged from 100 to 140. Data analysis was performed using SPSS version 25 and multiple linear regressions was used to identify the predictors of total diabetes empowerment scores. **Results:** The median age of the study population was 55 years old. 56% were male and the mean duration of diabetes was 4 years. The total median score of the DES was 110 [interquartile range (IQR) = 10]. The median scores of the three subscales were 40 with (IQR = 4) for "Managing the psychosocial aspect of diabetes"; 36 with (IQR = 3) for "Assessing dissatisfaction and readiness to change"; and 34 with (IQR = 5) for "Setting and achieving diabetes goal". According to multiple linear regressions, factors that had significant correlation with higher empowerment scores among type 2 diabetes patients included an above secondary education level ( $P < 0.001$ ), diabetes education exposure ( $P = 0.003$ ), lack of ischemic heart disease ( $P = 0.017$ ), and lower glycated hemoglobin (HbA1c) levels ( $P < 0.001$ ). **Conclusion:** Diabetes empowerment scores were high among type 2 diabetes patients in this study population. Predictors for high empowerment scores included above secondary education level, diabetes education exposure, lack of ischemic heart disease status and lower HbA1c.

**Keyword:** Diabetes; Diabetes Empowerment Scale; Empowerment; Malaysia; Primary care; Scores; Type 2 diabetes

