

## **Effectiveness of simplified diabetes nutrition education on glycemic control and other diabetes-related outcomes in patients with type 2 diabetes mellitus**

### **ABSTRACT**

**Background & aims:** The study aimed to evaluate the effectiveness of the Simplified Diabetes Nutrition Education (SDNE) on glycemic control and other diabetes-related outcomes in patients with type 2 diabetes mellitus (T2DM). **Methods:** This a randomized controlled trial (RCT) randomized 208 patients with T2DM [mean age =  $48.8 \pm 11.8$  years, Glycated Hemoglobin (HbA1c) =  $9.5 \pm 2.4\%$ , and Body Mass Index =  $28.0 \pm 5.6$  kg/m<sup>2</sup>] to intervention group (n = 104) or control group (n = 104). Participants in the intervention group received a weekly diabetes nutrition module based on the health belief model for 12 weeks in addition to the usual care whereas the control participants were given the usual care. We evaluated HbA1c and diabetes-related outcomes (metabolic parameters, dietary intake, and physical activity level) at baseline, 12 weeks, and 22 weeks. Health beliefs, diabetes knowledge, and health literacy were also evaluated. **Results:** After 22 weeks, HbA1c improved significantly in the intervention group ( $-1.7\%$ ) from the baseline value, compared to the control group ( $+0.01\%$ ) ( $p < 0.001$ ). Furthermore, the intervention group also showed better improvement in metabolic parameters than the control group ( $p < 0.05$ ). Besides, dietary intake and physical activity levels improved significantly among the intervention group compared to the control group ( $p < 0.05$ ). Likewise, health beliefs, diabetes knowledge, and health literacy also improved significantly in the intervention group compared to the control group ( $p < 0.05$ ). **Conclusion:** SDNE improves glycemic control and other diabetes-related outcomes among the intervention group compared to the control group.

**Keyword:** Simplified education; Nutrition; Type 2 diabetes; Glycated hemoglobin; Health beliefs; Health literacy; Basrah; Iraq