

ORIGINAL RESEARCH

Effectiveness of Diabetic Self-Management Education on Managing Glycemic Levels in Adults with Type Two Diabetes in Juba County, South Sudan

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Abstract

Diabetes mellitus, especially Type 2 Diabetes (T2D), poses a public health challenge in South Sudan, with rising prevalence, suboptimal management, and numerous socioeconomic barriers. Diabetes Self-Management Education (DSME) has demonstrated effectiveness in improving clinical outcomes and empowering patients to manage their condition elsewhere, but its application remains inadequate in South Sudan. This study aimed to evaluate the effectiveness of a culturally tailored DSME program in improving glycemic control, self-management behaviors, diabetes knowledge, and quality of life among adults aged 45 and above with T2D attending Malakia Primary Health Care Centre in Juba, South Sudan. A randomized controlled trial involving 132 adults with T2D was conducted over three months. Participants were randomly assigned to either an intervention group (receiving structured DSME sessions plus routine care) or a control group (receiving routine care only). Data on clinical measures (HbA1c, fasting blood glucose, BMI, blood pressure), self-management behaviors, knowledge, and quality of life were collected pre- and post-intervention, and analyzed using paired and independent t-tests, with significance set at $p < 0.05$.

The intervention group showed significant improvements in clinical parameters: HbA1c (mean reduction, $p < 0.001$), fasting blood glucose ($p < 0.001$), BMI ($p < 0.001$), and blood pressure ($p < 0.001$). Significant behavioral changes included increased physical activity, medication adherence, dietary modifications, and blood glucose monitoring (all at $p < 0.05$). Participants also demonstrated a significant improvement in diabetes knowledge ($p < 0.001$). Despite socioeconomic challenges such as food insecurity and transportation barriers, the DSME intervention significantly improved the quality of life (at $p < 0.01$). Culturally appropriate DSME significantly enhances glycemic control, promotes healthier behaviors, and improves knowledge and quality of life among adults with T2D in South Sudan.

Keywords: Diabetes self-management education, Glycemic control, Quality of life, Type 2 diabetes, South Sudan