Lorestan Medical Sciences and Health Services
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The Effect of a Behavioral Counseling Program on Glycemic Control, Physical Function and Self-Management of Patients with Diabetes Susceptible to Peripheral Artery Disease

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Abstract

Background: Type 2 diabetes mellitus (T2DM) constitutes a principal modifiable risk factor for peripheral arterial disease (PAD), wherein suboptimal self-management and poor glycemic control precipitate lower-extremity complications. This study aimed to elucidate the efficacy of a targeted behavioral counseling intervention on glycemic control, physical activity levels, and self-management behaviors among T2DM patients predisposed to PAD.

Method: A randomized controlled clinical trial was conducted on 90 T2DM patients at high risk for PAD. Following initial convenience sampling, participants were allocated into intervention (n=45) and control (n=45) groups utilizing stratified block randomization. Over a two-month period, the intervention group received seven behavioral counseling sessions predicated on the 5A model (comprising four face-to-face and three telephone sessions), while the control group received routine standard care. Pre- and post-intervention assessments included fasting and random blood glucose levels (quantified via calibrated personal glucometers), self-management capabilities (utilizing the Diabetes Self-Management Questionnaire - Revised [DSMQ-R]), and physical activity profiles (assessed via the International Physical Activity Questionnaire - Short Form [IPAQ-SF]).

Results: Intragroup analyses revealed a statistically significant post-intervention reduction in both fasting and random blood glucose levels across both study groups. However, after adjusting for baseline covariates, these glycemic indices were significantly lower in the intervention group compared to the control group ($P < 0.001$). Furthermore, the intervention group exhibited a substantial post-intervention increase in the total DSMQ-R score and all its respective subscales (with the exception of healthcare team cooperation), whereas the control group demonstrated marginal declines or non-significant variations; between-group differences remained highly significant post-adjustment for baseline values ($P < 0.001$). Significant improvements in IPAQ-SF scores were exclusive to the intervention group ($P < 0.001$), with regression analysis indicating that this enhancement in physical activity was predominantly driven by participants exhibiting low baseline activity levels.

Conclusion: The implementation of a 5A-based behavioral counseling paradigm yields significant short-term improvements in glycemic control, augments self-management behaviors, and enhances physical activity among sedentary T2DM patients predisposed to PAD. The integration of such structured counseling into routine clinical care, complementary to pharmacotherapy and lifestyle modifications, offers a pragmatic strategy for the secondary prevention of lower-extremity vascular complications in this high-risk demographic. Keywords: Type 2 Diabetes Mellitus; Behavioral Counseling; Diabetes Self-Management; Blood Glucose; Physical Activity; Peripheral Arterial Disease.