Executive Summary: Empowering Behavior Change in Adults with Diabetes Through Nutrition Education and Motivational Interviewing

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Main Points

- Participants demonstrated improved knowledge, motivation, and confidence in managing their diabetes.
- Motivational interviewing (MI) enhanced participant engagement and dietary habits.
- The intervention fostered social bonds, leading to increased program engagement.
- Self-reported nutritional behaviors improved significantly (58.3% to 87.5%).

Background and Purpose

A 2022 Community Health Needs Assessment for a small rural county in North Carolina identified a significant gap in diabetes self-management education among older adults, with county rates exceeding state and national averages (Central Carolina Hospital, 2022). This lack of education contributes to poor glycemic control, increased risk of complications, and higher healthcare costs within the aforementioned county. Diabetes is a leading cause of death in the U.S., with over $400 billion in annual healthcare costs (CDC, 2024), and is significantly influenced by lifestyle behaviors, particularly nutrition. Poorly controlled diabetes leads to adverse health outcomes and end-organ damage. Many individuals struggle with the long-term self-care required for effective management, as traditional education often fails to address necessary motivational factors. This project aims to address this gap through the implementation of small group education workshops and one-on-one MI sessions to empower participants, enhance readiness to change, and improve self-care management, aligning with the Quadruple Aim.

Methodology

The project, combining nutrition education and motivational interviewing (MI), was conducted over 12 weeks at a senior center in rural North Carolina. Adults with type 2 diabetes were recruited through flyers, a health fair, and word of mouth. Grounded in Prochaska's Stages of Change Theory, the intervention included three interactive workshops:

- Building the Foundation: Defined the components of diabetes, macronutrients, and the connection between nutrition and diabetes self-care management.
- Becoming a Plate Master: Built skills to read nutrition labels, discussed components of a healthy diet, and strategies for successful meal planning.
- Bringing It All Together: Identified resources for healthy cooking and recipes, discussed SMART goals and action plans, and the importance of a social support system.

The fourth session featured a healthy cooking demonstration. The project lead, trained in MI, led workshops and one-on-one MI sessions (held within one week of each workshop) using a customized script designed for the project. The MI sessions addressed individual participant needs, enhanced their readiness to change, and supported their self-care management. Data was collected, including demographics, pre- and post-intervention assessments, MI responses, and intervention evaluations. Microsoft Excel and Google Sheets were used for data analysis.

Results

The pre-survey total participant score was 58.3%, which increased to 87.5% in the post-survey (calculations were based on the responses to the seven Likert-scale questions). Participants exhibited an improved understanding of diabetes, including its causes, complications, and the role of nutrition in diabetes self-care management. They reported increased motivation and confidence in making healthier food choices. MI provided an opportunity for customized feedback, which participants found valuable. Several participants

reported improved glycemic control and increased consumption of fruits, vegetables, protein, and fiber. The survey findings revealed significant improvement in participants' desire to change nutritional behaviors (see Figure 1). Attrition was observed during the project. One participant left the project after the second workshop.

These outcomes highlight the project's success in improving participants' knowledge, motivation, and dietary habits, while identifying areas for future improvement, such as addressing attrition and sustaining long-term motivation.

Figure 1. Measures participants' responses to the survey question assessing the readiness to improve eating habits

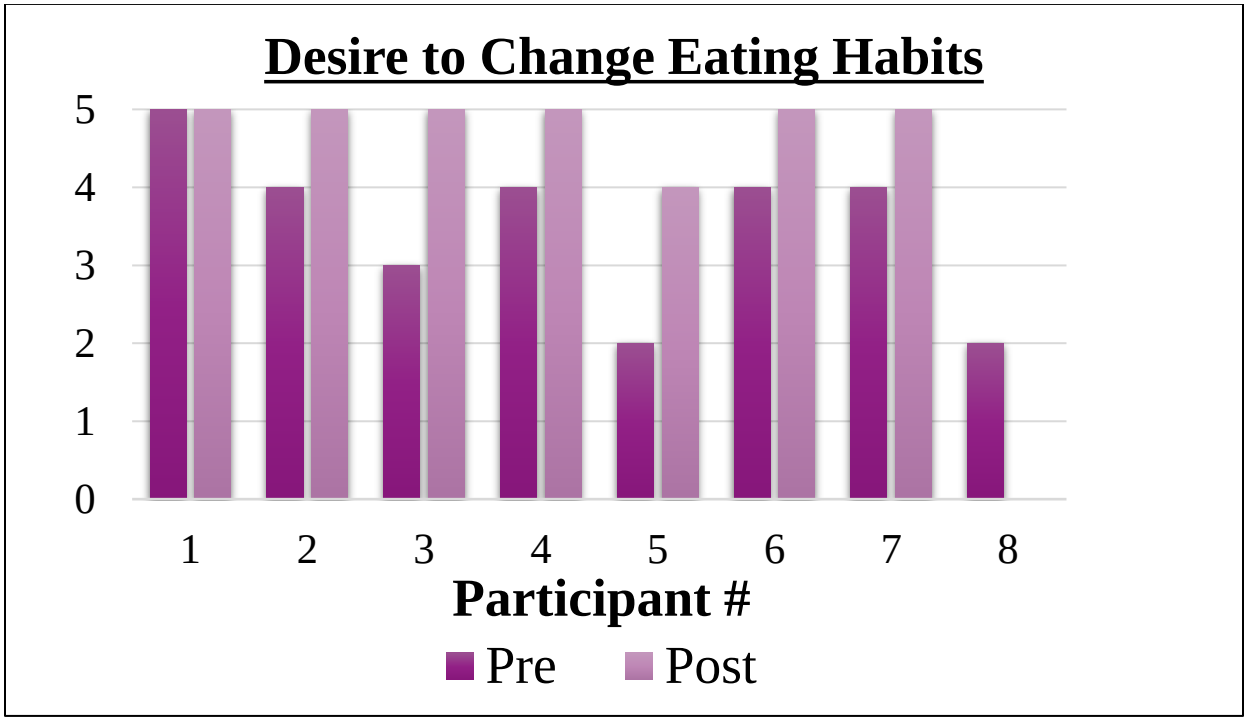

Figure 1: Ratings on the y-axis were scored based on participants' responses. Zero (0) indicates no response. Ratings from 1 (strongly disagree) to 5 (strongly agree).

Strengths:

- Improved participant knowledge of nutrition and diabetes.
- Workshops and demonstrations provided practical knowledge of healthy food choices.

- MI empowered behavioral changes, increased confidence in food choices and meal preparation, and motivated participants to improve their health.
- Participants formed social bonds and demonstrated more proactive diabetes management.

Limitations:

- Short duration and lack of follow-up: The 12-week program did not allow for the assessment of the long-term impact of the intervention on sustained behavior change.
- Limited generalizability: The findings may not apply to other populations or settings due to the project's specific location at a senior center, reliance on self-reported data, small sample size, and focus on a specific demographic.
- Confounding factors: Several factors may have influenced the intervention's effectiveness, including participant retention, individual motivation, health literacy, social support, unaddressed comorbidities, and socioeconomic factors.

Implications:

Nurses can improve diabetes care through evidence-based nutrition education and MI interventions. Collaboration with other healthcare professionals can lead to comprehensive, individualized care plans, addressing the root causes of poor glycemic control and improving patient outcomes. Integrating these interventions into routine practice enhances care quality, potentially preventing or delaying complications and reducing healthcare costs. This holistic approach emphasizes lifestyle modifications alongside medical treatment. Furthermore, increased knowledge and self-efficacy empower individuals with diabetes to manage their condition more effectively, promoting healthier eating habits, contributing to overall community health, and potentially reducing the prevalence of diabetes and related conditions. Further

research should explore long-term outcomes and the effectiveness of this approach in diverse populations and settings.

Conclusions:

The project effectively improved participants' understanding of the connection between nutrition and diabetes, increased motivation to make healthier food choices, and enhanced confidence in diabetes management. Key findings included significant improvements in pre- and post-survey scores and positive feedback on the clarity and engagement of the educational workshops. Challenges faced included participants' attrition and concerns about sustaining progress post-intervention.

References

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