

Education helps decision-affordable, healthy food

Bettina Tahsin

Barriers to successful diabetes self-management in low-income populations include reduced access to healthy food along with limited awareness of healthy eating. In the United States, it is a public health paradox that those at the highest risk for obesity and type 2 diabetes are the most food insecure, meaning unable to consistently afford or have access to enough healthy food to meet their nutritional needs.¹

One challenge faced by healthcare providers serving low-income populations is reducing the health risks posed by the consequences of these barriers. Can education and counselling empower low-income patients with type 2 diabetes to make healthier food choices within their means and improve their health?

Control of type 2 diabetes is heavily influenced by dietary choices. A frequent complaint of low-income individuals with diabetes is that by the end of the month all they can afford are cheap high-carbohydrate snack foods. Without money left for healthy, low-carbohydrate, low-calorie vegetables, this dilemma is a recipe for obesity and poor diabetes control. Can targeted, additional diabetes education help deter this trend?

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Study

The study focuses on implementing a diabetes nutrition education curriculum specifi-

cally targeted to the needs of a low-income, ethnically diverse population in the US suffering from obesity and uncontrolled type 2 diabetes.

The core principles of diabetes nutrition management are universal: carbohydrate and portion control, meal timing and coordination with medications, and weight management. What that actually looks like on the plate and how that is managed day-to-day is unique to each individual. Food and cultural preferences, and ability to buy appropriate foods that will keep people with diabetes healthy must be considered. Our study focused on these universal principles while also making it very specific to the needs and challenges of our population.

making for and control



The study setting is the diabetes clinic and lifestyle centre in the Fantus Clinic, the primary outpatient clinic of the Cook County Health and Hospitals System (CCHHS), located in Chicago, Illinois, USA. CCHHS is a network of hospitals and community clinics servicing a primarily low-income, ethnically diverse population at high risk for developing chronic diseases. Those overweight or obese make up 80% of the patient population. Ethnically, close to half of the CCHHS patient population is African American, one third Hispanic and the remaining reflective of Chicago's urban diversity.

The purpose of this study is to evaluate whether additional classes in nutrition and basic cooking could help obese, low-income

participants with type 2 diabetes lose weight and better manage their diabetes. Participants in the study were patients seen in the Fantus clinic's Network Diabetes Program (NDP), a diabetes clinic devoted to helping those with uncontrolled diabetes achieve greater diabetes control. NDP is staffed by endocrinologists, nurse practitioners, nurses, registered dietitians, and pharmacists, all

with specialised diabetes training, experience, and certification.

The site for the intervention classes is the Therapeutic Lifestyle Center (TLC), which is adjacent to the diabetes clinic. Conducting the intervention in the lifestyle centre is one of the advantages of the study programme compared to other hospital and community settings in low- and middle-

income countries. Our lifestyle centre includes a virtual kitchen and a mock grocery store plus additional classroom and exercise areas. While the study focused exclusively on nutrition, exercise was encouraged as part of a healthy lifestyle.

In total, 98 patients who have type 2 diabetes and an $HbA_{1c} \geq 7\%$ and obese ($BMI \geq 30$) are being recruited from the diabetes centre. Participants are randomised into either the control group, who receive their usual care at the diabetes centre, or the intervention group, who receive their usual care plus the additional classes.

Each group of eight participants going through the intervention attends a series of eight one-hour classes over the course of six months, followed by a two-hour grocery store tour. Classes are bi-weekly the first two months and then monthly for the next four months. At the end of the six months, participants are assessed for weight, blood glucose control, and other markers of overall health.

The eight classes, taught by a registered dietician/certified diabetes educator, follow the basics of diabetes nutrition management and focus on foods commonly eaten by the participant population. In this study to date, 67% are African American, 14% Hispanic, 11% Asian, and 8% White. The classes include:

1. **Label reading for diabetes** teaches which foods raise blood glucose, appropriate portion sizes, and how to assess food content by using the nutrition facts label.
2. **Meal planning for diabetes** discusses how the Plate Method, which includes half a plate of non-starchy vegetables, quarter plate of starchy foods, quarter plate of protein, plus a fruit and milk, can be used to both accommodate dietary preferences while also supporting good blood glucose control.
3. **Eating to lose weight** emphasises appropriate portion control and dietary strategies that will provide a healthy plate of food and also promote weight loss.

4. **Eating on a budget** translates dietary principles into cost-effective strategies for eating healthy on limited means.
5. **Feeling full on less** covers the benefits of eating whole foods for more fibre and greater satisfaction.
6. **Heart-healthy fats** addresses dietary that support good heart health, a primary concern in diabetes.
7. **Eating to control blood pressure** combines both sodium restriction and increasing vegetables for more potassium to improve hypertension.
8. **Eating out** applies the strategies already discussed to maintain healthy dietary control while dining out.

A **grocery store tour** at a budget-conscious supermarket concludes the programme and serves to put into practice healthy food selection on a budget.

Preliminary results

To date, three groups of the planned six groups to participate in the intervention have already completed the study and several interesting results have emerged. Compared to their control group counterparts, the intervention group participants have improved blood glucose control, as measured by their HbA_{1c} results. For instance, participants in one of the intervention groups decreased their average HbA_{1c} by

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People with diabetes learning about healthy and unhealthy food choices, Chicago, USA

0.7% compared to a decrease of 0.2% in participants in its paired control group. Those intervention patients with their diabetes solely managed by oral medications also achieved greater weight loss with an average 9.6 kg weight loss versus only 1.2 kg weight loss in its paired control group. However, intervention patients managed on insulin had a more difficult time with weight

loss, reflecting the challenges of insulin and weight control. But even these patients had improved blood glucose when compared to the control patients, reflecting a better understanding of matching carbohydrate content with insulin dosing.

Overall, participants who consistently attended classes demonstrated better understanding of

how to plan healthy meals that fit their budget and cultural eating patterns resulting in better blood sugar levels.

Summary

Given that a significant number of intervention group participants have improved HbA_{1c} results and achieved greater weight loss than control participants validates the power of diabetes education and counselling. Helping low-income individuals with type 2 diabetes make healthier food choices within their means can provide positive outcomes and a chance for better futures.

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BRIDGES project

Medical lifestyle centre community healthy eating initiative to improve diabetes outcomes

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References

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