

# Evaluating a Nutrition Education Intervention to Promote A Healthy Lifestyle Among Older Adults



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## ABSTRACT

**Objectives:** Evaluate the effectiveness of a new nutrition program developed to address the nutrition education needs of this community.

**Design:** Quasi-experimental Design

**Methods:** The intervention included a new nutrition education program at Carmine Carro Community Center over a period of 5 weeks. Multiple nutrition education classes (5 classes) for older adults in this community were provided to increase their knowledge and promote a healthy lifestyle. Participants were asked to attend each class session. Participants were recruited from the community senior center, located in Brooklyn, NY. Convenience sampling was used to recruit participants. Participants attended these classes as they liked, but they needed to be a member in order to be able to participate. Multiple tools were used to collect data to quantify the effectiveness of the intervention, which included pre-tests and post-tests surveys/questionnaires, nutrition exit slip, activities and games. Quantitative Data (participants surveys/questionnaire scores) were analyzed and compared using paired t-tests created using SPSS software. Qualitative Data were thematically examined to identify facilitators for this intervention, which included observations made during each class session.

**Results:** The nutrition education intervention program increased participants' knowledge about cholesterol ( $p < 0.05$ ). However, it demonstrated that there was no change following the diabetes lesson. Participants reported a positive experience with the nutrition intervention program that was implemented. Many were very involved during the class sessions. p-values were used to show the significance difference between the pre-tests and post-tests.

**Discussion:** This nutrition education intervention was effective in increasing the community's knowledge, and skills. Even Though participation varied during each class session, positive feedback was received from participants. Previous studies have demonstrated that nutrition education works in teaching participants to recognize a healthy diet and promote a healthy lifestyle. A bigger sample size was included in these studies. However, similar results were obtained as it gave participants the opportunity to participate in increasing their knowledge. Strengths of this study is that it provided researchers with complete control over all aspects of the independent variable, more generalizable, and have better external validity. Limitations of this study is that randomization is not used, participation was very low for some of the class sessions, time conflict with the class, bias (insufficient sample size and limited access to data), and classes are only offered in English.

## INTRODUCTION

- The prevalence of multiple chronic conditions is higher among older adults compared to the rest of the population in the United States.<sup>1</sup>
- The elderly tend to be affected by chronic conditions such as diabetes, and heart disease. Older adults have a general understanding of nutrition and healthy eating. However, nutrition knowledge is still limited among them.<sup>2,3</sup>
- Older adults frequently consider food and eating to be a matter of common sense and reveal a lack of interest in expanding their knowledge concerning nutrition. For this population, eating is influenced by daily habits which may have been established very early in life and remained unchanged.<sup>4</sup>
- Even though there is access to healthcare and resources and advances in public health, older adults are experiencing this. The quality of diet for older adults in the United States has declined over time. As people get older, they eat less and make different food choices. Maintaining a healthy diet can become more difficult as we grow older.<sup>5,6</sup>
- This specific population needs reliable health information to prevent and manage the disease, promote their health, and follow health recommendations.
- The purpose of this study is to evaluate the effectiveness of a new nutrition program developed to address the needs of limited previous nutrition education of this community.

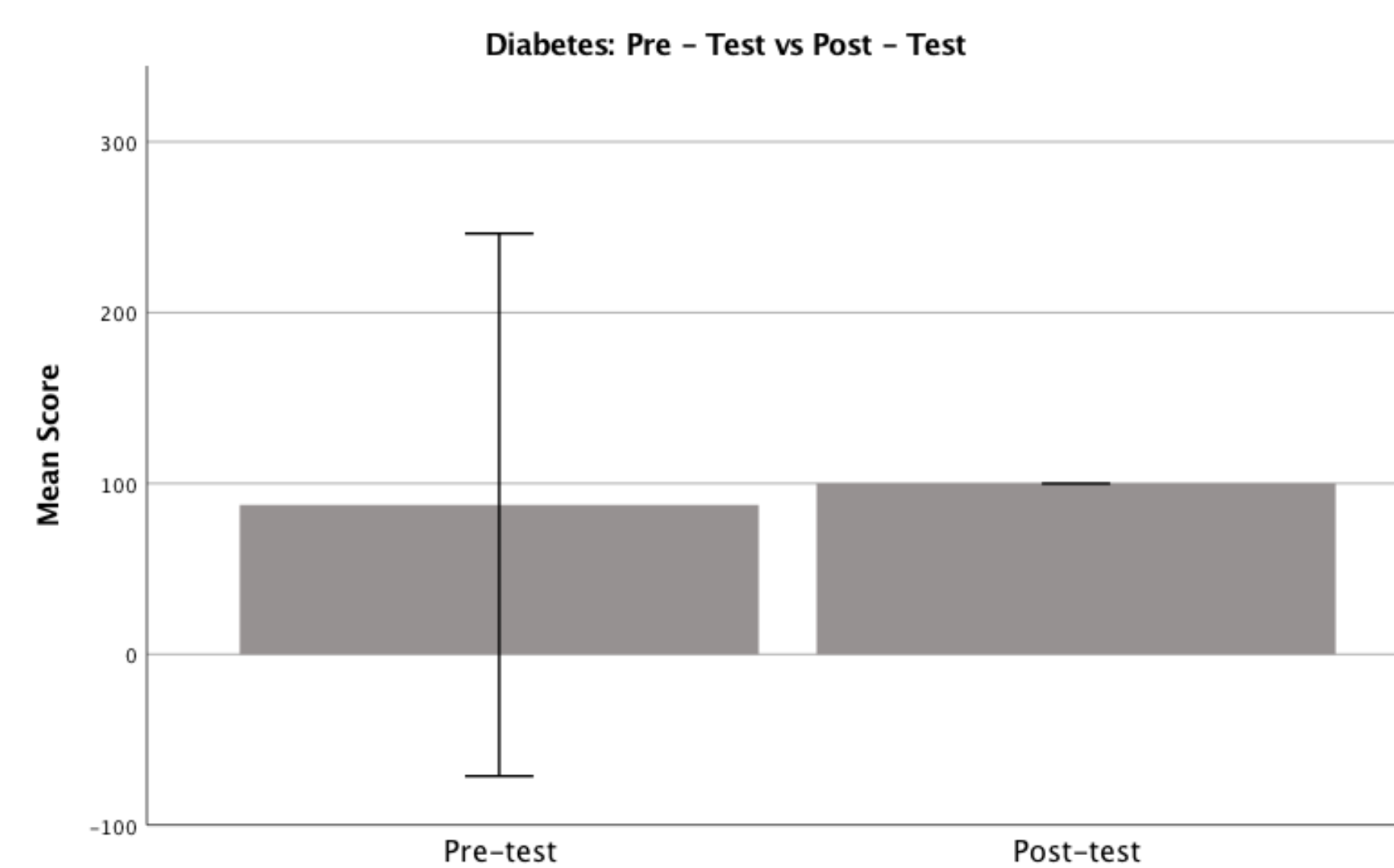
## METHODS

- This study was conducted in a community senior center, Carmine Carro Community Center over a period of 5 weeks between February and March 2023.
- Participants were recruited from the community senior center, located in Brooklyn, NY. Convenience sampling was used for recruiting participants. Participants attended these classes as they liked, but they must be a member, in order to be able to participate.
- There were 0 - 10 participants in each class. Each class included a different group of people. They must sign up for it at the beginning of each class session during that day.
- Multiple tools were used to collect data to quantify the effectiveness:
  - Pre-tests and Post-tests Surveys/Questionnaires
  - Nutrition Exit Slip
  - Create a Meal Plan Activity
  - Nutrition Label Quiz Activity
  - Jeopardy Game
- Excel sheets, including tables and graphs, were used to organize the data.
- Quantitative Data (participants surveys/questionnaire scores) were analyzed and compared using paired t-tests created using SPSS software.
- Qualitative Data were thematically examined to identify facilitators for this intervention, which included observations made during each class session.

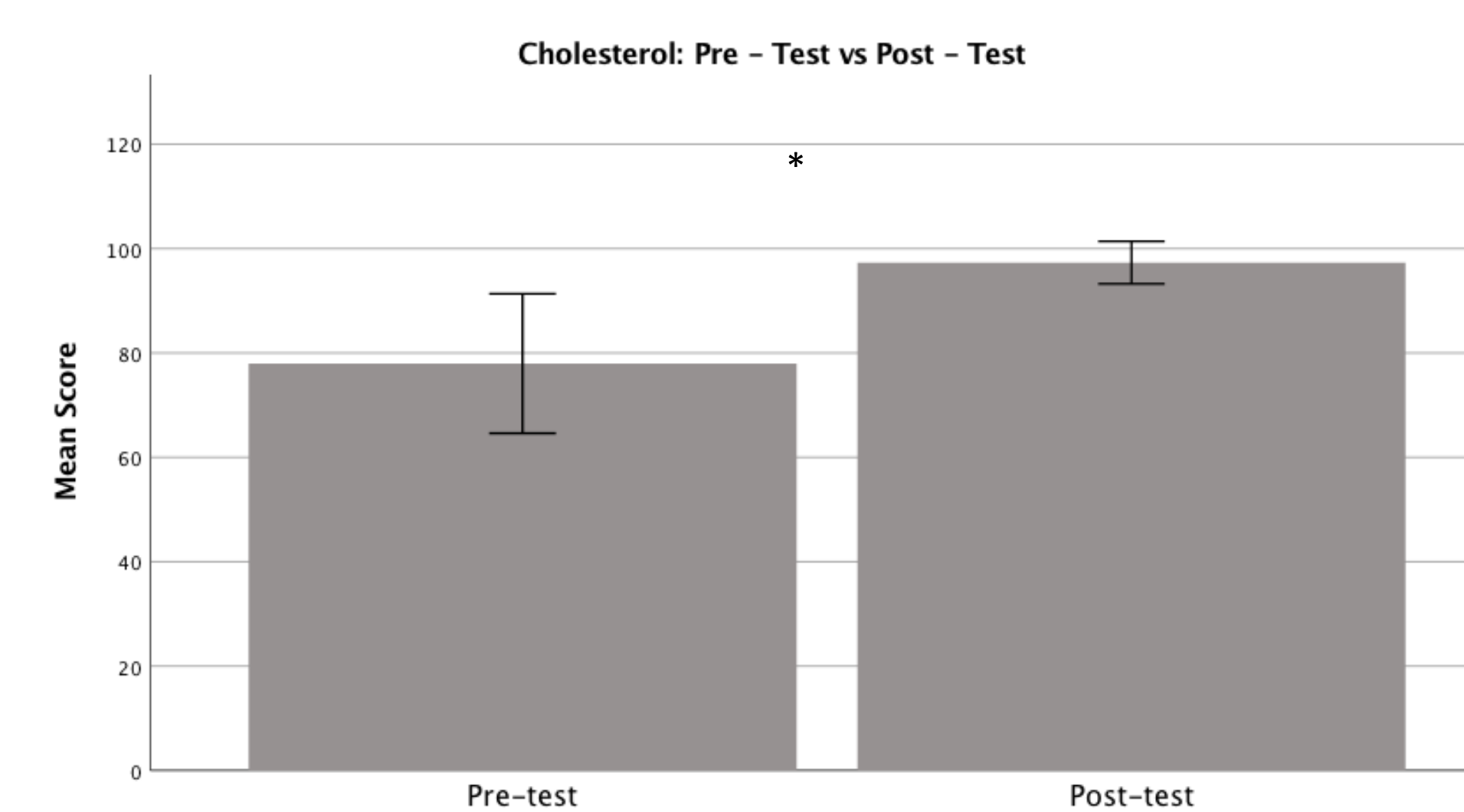
## RESULTS

Demographics of Participants			
Age	60+ years old		
Number of Participants	Total # of Participants	Male	Female
First Class Session	3	2	1
Second Class Session	2	0	2
Third Class Session	9	2	7
Fourth Class Session	10	2	8
Fifth Class Session	0	0	0

**Table 1.** Demographics of Participants. Participants reported a positive experience with the nutrition intervention program that was implemented. Many were very involved during the class sessions.



**Figure 1.** Paired Sample Statistics of second class session: *Diabetes: Carbohydrates, Fiber, and Sugar*. Results show no significant difference as p-value was higher than 0.05.



**Figure 2.** Paired Sample Statistics of third-class session: *Cholesterol, Fats, Hypertension & Heart-Healthy Diet*. Results show significant difference as p-value is  $< 0.05$ . The nutrition education intervention program increased participant's knowledge about cholesterol ( $p < 0.05$ ).

Topic of Interest	# of Participants
Increasing muscle tone	1
Caffeine and Water Intake	1
Individual diet goals based on Male and Female	1
Sugar and Carbs	3
Staying on Diet	3

**Table 2.** Participants' topic of interest and the number of participants interested in that topic. Nutrition Exit Slips were used to assess what participants learned during each class session.

## RESULTS CONT'D

### Qualitative Data

#### Observations

#### First Class Session: *Balanced diet: MyPlate and Portion Size*

Participants were asked to complete a handout about MyPlate after the class session. It included a protein, grain, fruit, vegetable, and dairy. All participants were able to create a breakfast meal using the knowledge that was learned during the class.

#### Fourth Class Session: *Meal Planning, Snacking, and Recipes*

A cooking class demonstration was shown to the participants during the class session. Everyone was able to participate in making their chia seed pudding. This class received a lot of positive feedback. Many said that they would try the recipe at home. Participants had hand-on experience during this class session. In addition, a mini nutrition label quiz game was given to participants. They participated in it and were able to test their knowledge.

#### Fifth Class Session: *Intuitive Eating & Tips on Eating Out*

There were a couple of participants that signed up for this class session, however, none of the participants attended this class session. Effectiveness of this class session was not able to be assessed.

## DISCUSSION

- Even Though participation varied during each class session, positive feedback was received from participants. This nutrition education intervention was effective in increasing the community's knowledge and skills.
- Previous studies have demonstrated that nutrition education works in teaching participants to recognize a healthy diet and promote a healthy lifestyle. A bigger sample size was included in these studies. However, similar results were obtained as it gave participants the opportunity to participate in increasing their knowledge. For example:
  - Intervention group demonstrated a significant improvement in communicative health literacy, step count, engagement in moderate-to-vigorous physical activity, dietary variety, life-space mobility, social network size, grip strength, gait speed, and depressive symptoms.<sup>7</sup>
  - The community-based food education program, with the use of easy to implement strategies (short-duration lectures and dual-task problem-solving activities during exercise), had a positive and encouraging impact on nutrition-related knowledge in middle-aged and older patients with DM2.<sup>8</sup>
  - The *Take Heart* intervention, which included education about heart disease and support for a behavioral lifestyle change, using a goal-setting process based on self-regulation theory, was associated with modest improvements in sleep, fatigue, and cardiac symptoms burden.<sup>9</sup>
- Strengths
  - Provide researchers with complete control over all aspects of the independent variable, more generalizable, and have better external validity.
- Limitations:
  - Randomization is not used
  - Participation was very low for some of the class sessions. This may be due to classes being offered only to members of the senior community center. Time conflict with the class.
  - Bias (insufficient sample size and limited access to data)
  - Classes are only offered in English

## CONCLUSION

The new nutrition education program was effective in increasing the community's knowledge at Carmine Carro Center. However, from the results, it demonstrated that there was no change following the diabetes lesson, while there was an increased participant's knowledge following the cholesterol lesson ( $p < 0.05$ ). This may be due to the numbers of participants that attended the lesson, which may impact the results. Also, participants that attended had some prior knowledge about diabetes. Overall, these lessons influenced their behaviors and perspectives through cognitive learning theory and transformative approach. It gave participants the opportunity to learn, gain knowledge, and be active by participating and asking questions. Results demonstrated that these courses did have an impact on participants' knowledge and behaviors.

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