Effectiveness of Nutrition Education Intervention in Schenectady County Meal Site Participants

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ABSTRACT

Background: The rapid growth of the aging population presents challenges for the healthcare industry. Increased longevity is often accompanied by higher risk of chronic disease, functional impairment, and food insecurity. Programs offered by Offices of the Aging seek to combat these issues through the provision of meals, nutrition education, physical activities, social activities, and health screenings. A needs assessment conducted at Schenectady County congregate meal sites revealed a high prevalence of cardiovascular disease and, despite educational offerings, significant nutrition knowledge deficits.
Objective: To evaluate the effectiveness of multiple sessions of heart-healthy nutrition education on congregate meal site participants' nutrition knowledge, dietary habits, and blood pressures.
Methods: 16 participants were recruited at the Glenville meal site. Changes in dietary habits and nutrition knowledge were evaluated by comparing FFQ and nutrition knowledge assessment data collected during the needs assessment to post-intervention results. Changes in blood pressure were evaluated by comparing pre- to post-intervention measurements.
Results: There were non-significant increases in overall nutrition knowledge assessment scores, as well as the scores for questions pertaining to the salt and fat content of foods. There were no significant changes in dietary habits or blood pressure measurements as compared to baseline.
Conclusions: Further research is needed to evaluate whether more educational sessions over a longer duration of time might be more effective at impacting changes in nutrition knowledge, dietary behaviors and health outcomes.

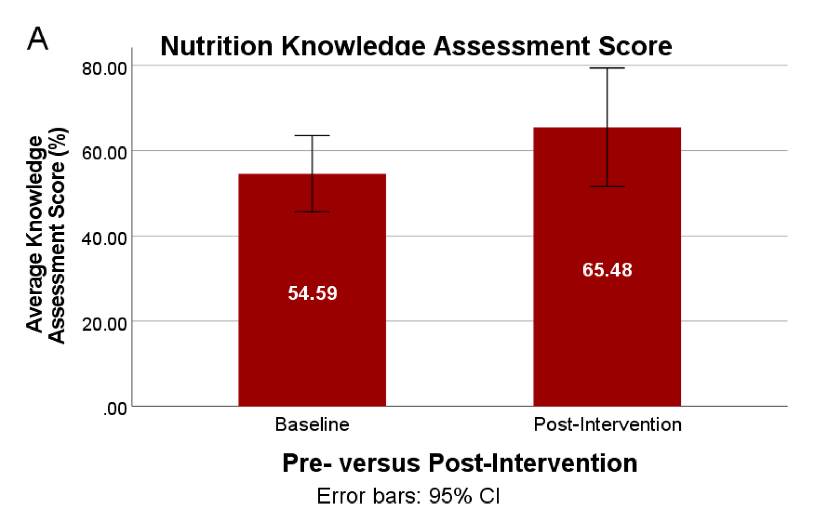
INTRODUCTION

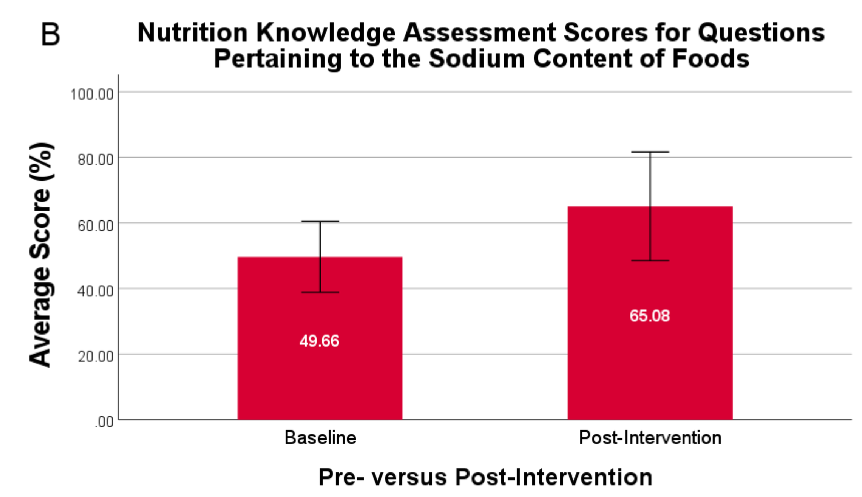
- It is New York state policy that nutrition education presentations be provided at Office of the Aging congregate meal sites at least six times a year.
- A needs assessment conducted in the fall of 2023 found that there are significant nutrition knowledge deficits amongst Schenectady County meal site participants.
- Participants were able to correctly identify the salt content of foods with 49.7% accuracy and the fat content of foods with 52.4% accuracy.
- A significant proportion of the population was also found to have cardiovascular disease.
- The purpose of this study was to evaluate the effectiveness of education sessions about blood pressure and high cholesterol at improving nutrition knowledge, dietary behaviors, and blood pressure for participants.

METHODS

- This study was conducted at Schenectady County's Glenville congregate meal site, on two consecutive Thursdays.
- Sixteen meal site attendees participated, with 9 recruited the first week and 7 recruited the second week.
- The intervention consisted of two twenty-minute education presentations with accompanying handouts – on managing high blood pressure the first week and managing high cholesterol the second week.
- Dietary habits were assessed using select questions from the NHANES FFQ[1], nutrition knowledge using select questions from the GNKQ-R[2], and blood pressure using an electronic blood pressure monitor.
- Baseline dietary habits and nutrition knowledge were collected from participants at all four Schenectady County meal sites during the needs assessment conducted in the fall of 2023.
- Blood Pressure was collected from study participants prior to the first education session and again following the second session.
- Nutrition knowledge assessment scores, dietary habits, and blood pressure measurements were assessed using non-parametric independent sample t-tests. (p was considered significant at <0.05)

RESULTS





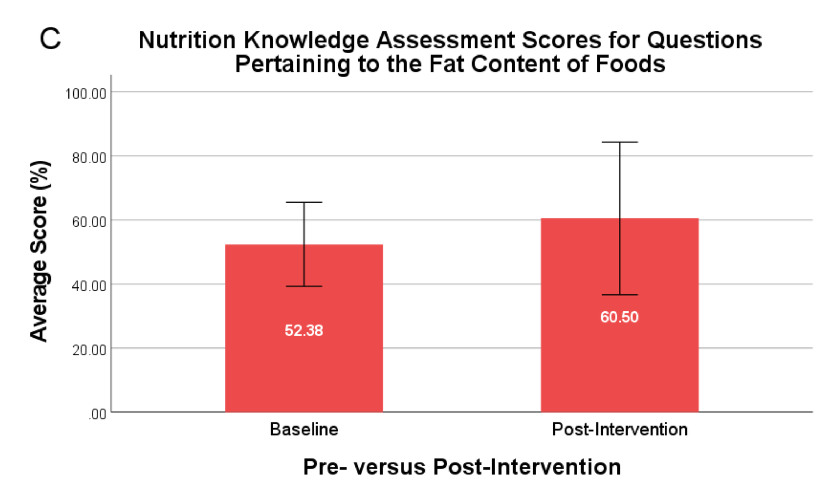
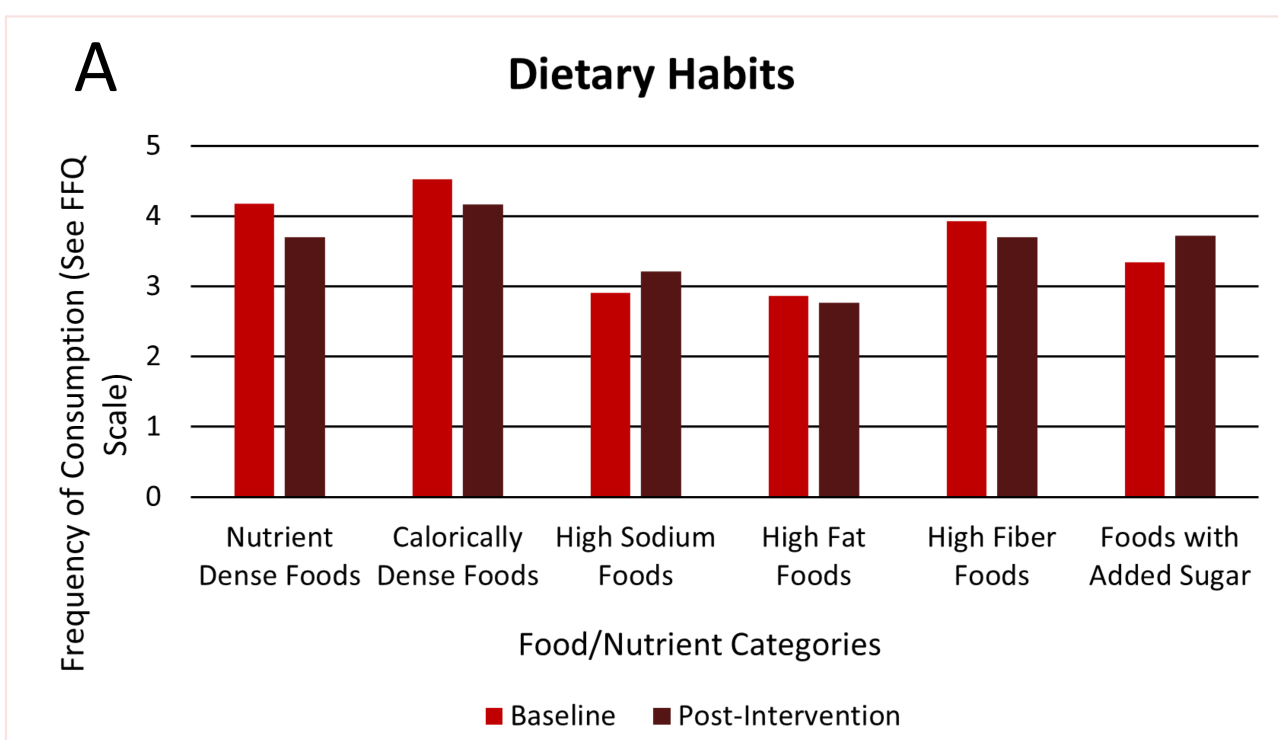


Figure 1. Nutrition Knowledge Assessment Scores at baseline (n=21) and following the intervention (n=9). A) Average nutrition knowledge assessment scores for the pre- and post-intervention groups, (p = 0.083). B) Average nutrition knowledge scores for questions pertaining to the sodium content of foods between the pre- and post-intervention groups, (p = 0.053).
C) Average nutrition knowledge scores for questions pertaining to the fat content of foods, (p = 0.247).



B

Never	1 time per month	2-3 times per month	1-2 times per week	3-4 times per week	5-6 times per week	1 time per day	2 or more times per day
1	2	3	4	5	6	7	8

Figure 2. Assessment of dietary habits, broken down by nutrient and food categories of interest, at baseline (n=21) and following the intervention (n=9). A) Reported average frequency of consumption at baseline and post-intervention of nutrient dense foods, calorically dense foods, high sodium foods, high fat foods, high fiber foods, and foods with added sugars, (p = 0.225, p = 0.379, p = 0.266, p = 0.415, p = 0.359, and p = 0.206 respectively). Light red = pre-intervention, Dark red = post-intervention B) The FFQ scale used to assess frequency of consumption

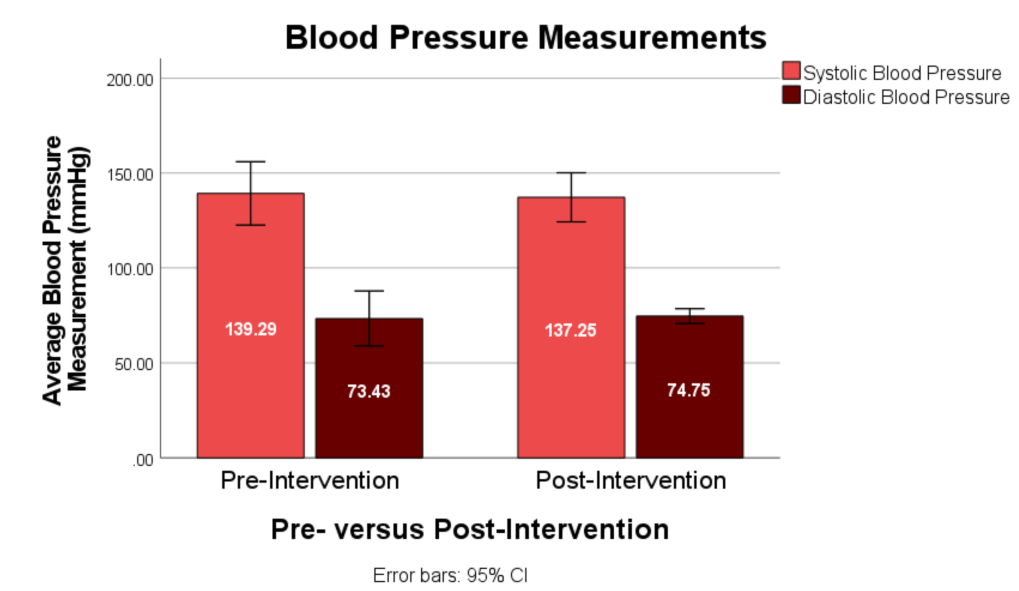


Figure 3. Average systolic and diastolic blood pressure measurements prior to (n=7) and following the intervention (n=12), (p = 0.415 and p = 0.397 respectively). Light red = systolic blood pressure, Dark red = diastolic blood pressure.

- Although not statistically significant, nutrition knowledge scores were improved overall. Scores were most improved on questions pertaining to the sodium content of foods, with approximately a 16% increase in scores following the intervention.
- Dietary behaviors and blood pressures remained stable across the intervention, although the limited time frame over which dietary and blood pressure changes were assessed may be a contributing factor.
- Similar studies have found statistically significant increases in nutrition knowledge and dietary behaviors following education interventions that made use of longer educational sessions and/or spanned a longer time frame. These intervention formats may be successful as they give participants more time to learn and implement behavior changes. [3,4]
- Similarly, studies have shown that use of self-measured blood pressure has been demonstrated to improve blood pressure control over the course of months to years. [5,6]
- The lack of statistical significance in this study's findings could be attributed to the small sample size (n=16).

CONCLUSION

The findings of this study support the need for future research using larger sample sizes and an increased number of education sessions over a longer study duration to evaluate whether this would significantly increase participants nutrition knowledge and would provide adequate time to see significant changes in behavior and/or health outcomes.

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