

# Evaluating the Effectiveness of a Balanced Plate Intervention

## ABSTRACT

**Objective:** To evaluate the effectiveness of 3 educational sessions on nutrition knowledge and behavior in a virtual Facebook group run by a Registered Dietitian.

**Design:** Quasi-experimental design

**Methods:** Three educational sessions were created based on the needs of the Nourished with Emily Facebook group members. Pre and post tests were used to determine a difference in knowledge before and after the intervention. Behavior change was also evaluated in participants.

**Setting:** Virtual; Zoom

**Participants:** Women who are between the ages of 25-55, live across the United States, and are employed who are members of the Nourished with Emily Facebook group.

**Intervention:** A pre-test was sent out to those that signed up before the intervention. A zoom link was sent to all participants who signed up. The 3 educational sessions were based off the areas on the needs assessment survey that were answered incorrectly by most participants. A post-test was sent to participants after the final educational session as well as another post test one week later.

**Results:** There was no significant difference between the mean total scores of the pre and post tests. There was also no significance difference in the qualitative data found on the pre and post tests. However, it was seen that the participants reported that they did apply the information they learned from the intervention on post test that was sent out 1 week after the last session.

**Conclusions and Implications:** The 3 educational sessions were not effective in significantly increasing nutrition knowledge in this virtual population. These findings reject the authors' hypothesis that the educational sessions would increase knowledge of the participants.

## INTRODUCTION

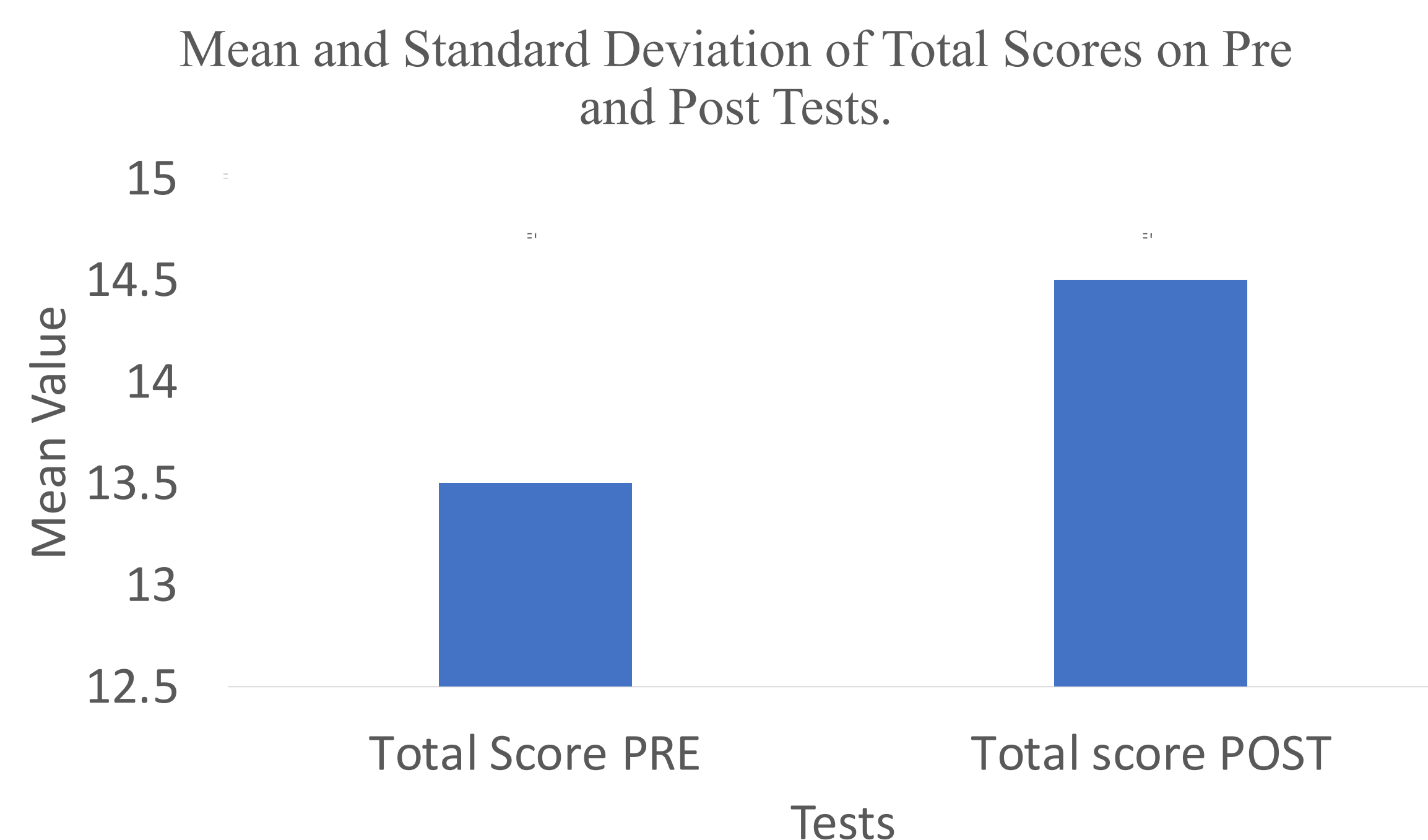
- The population looked at was the Nourished with Emily Facebook group members.
- Nutrition knowledge varies throughout the population due to several different reasons.
- By not having accurate nutrition knowledge, one may be unaware of how their behaviors affect their likelihood of developing certain diseases.
- Only around 5% of nutrition information read online is posted by actual Registered Dietitians.<sup>1</sup> Emily Tills, a Registered Dietitian runs the Nourished with Emily Facebook group where accurate information is posted.
- Common themes that emerged from the needs assessment given to members of this Facebook group were the parts of a balanced plate and portion sizes, sodium recommendations, as well as fat sources and the different types of fat.
- A 3-part educational session was created that reviewed these topics.
- Pre and post tests were distributed to those who attended the sessions to determine if knowledge was gained as well as if they applied this knowledge to their daily life (behavior change).
- The purpose of this study is to evaluate the effectiveness of 3 educational sessions based on the Adult Learning Theory on the nutrition knowledge and behavior of the population.

## METHODS

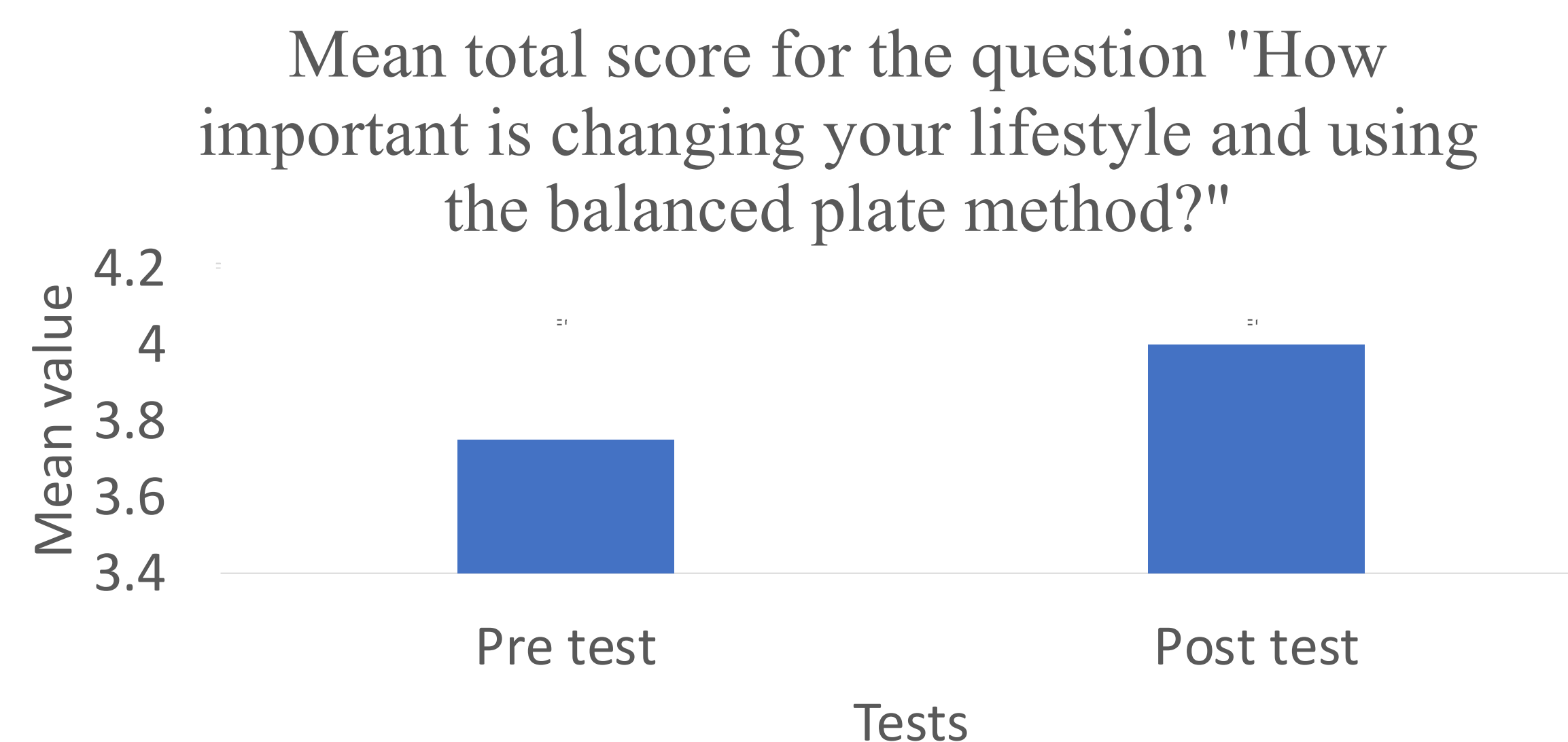
- The population evaluated for this study were members of the Nourished with Emily Facebook group.
- The educational sessions discussed what a balanced plate looks like/portion sizes, types of fat/sources of fat, and sodium recommendations.
- The inclusion criteria for participants included being over the age of 18, and a member of the Nourished with Emily Facebook group.
- The exclusion criteria included being under the age of 18, being a 1:1 client with any coach from Nourished with Emily, or not being a member of the Nourished with Emily Facebook group. 1 on 1 clients were not allowed to join this study because the information provided in this intervention is gone over with client with their Nourished with Emily coach.
- 2 participants who signed up attended all 3 educational sessions.
- The pre and post tests were adapted from the General Nutrition Knowledge Questionnaire (GNKQ). The GNKQ is a previously validated questionnaire.
- The second posttest that was sent one week later had short answer questions related to the behavior of the participants. This was created by the researcher.
- A t-test assuming unequal variances was used to determine if there was any significant change in the mean total scores before and after the intervention. The p value of <0.05 was used.
- The multiple choices questions that used the Likert scale were given number from 1-5 for each answer and a t-test assuming unequal variances was done on the total score of participants.
- The responses to the short answer questions on the posttest after one week were examined by using content analysis to track behavior changes in the participants.

## RESULTS

- In Figure 1, the t-statistic was -1.414 which is not significant as a p-value of <.05 was used.
- The significance was found to be .2301 which is not less than 0.05. This shows that there is not a significant difference between the mean total scores of the pre and post tests.
- In Figure 2, the t-value for question 16 was -0.292 which is not significant as a p-value of <.05 was used.
- The significance was found to be 0.779 which is not less than 0.05.
- In figure 3, the t-value for question 17 was -1.666 which is also not less than 0.05.
- The significance was found to be 0.1466 which is also not less than 0.05.
- In figure 4, participants agreed or strongly agreed that they would use the information they learned during the educational sessions in their daily life.

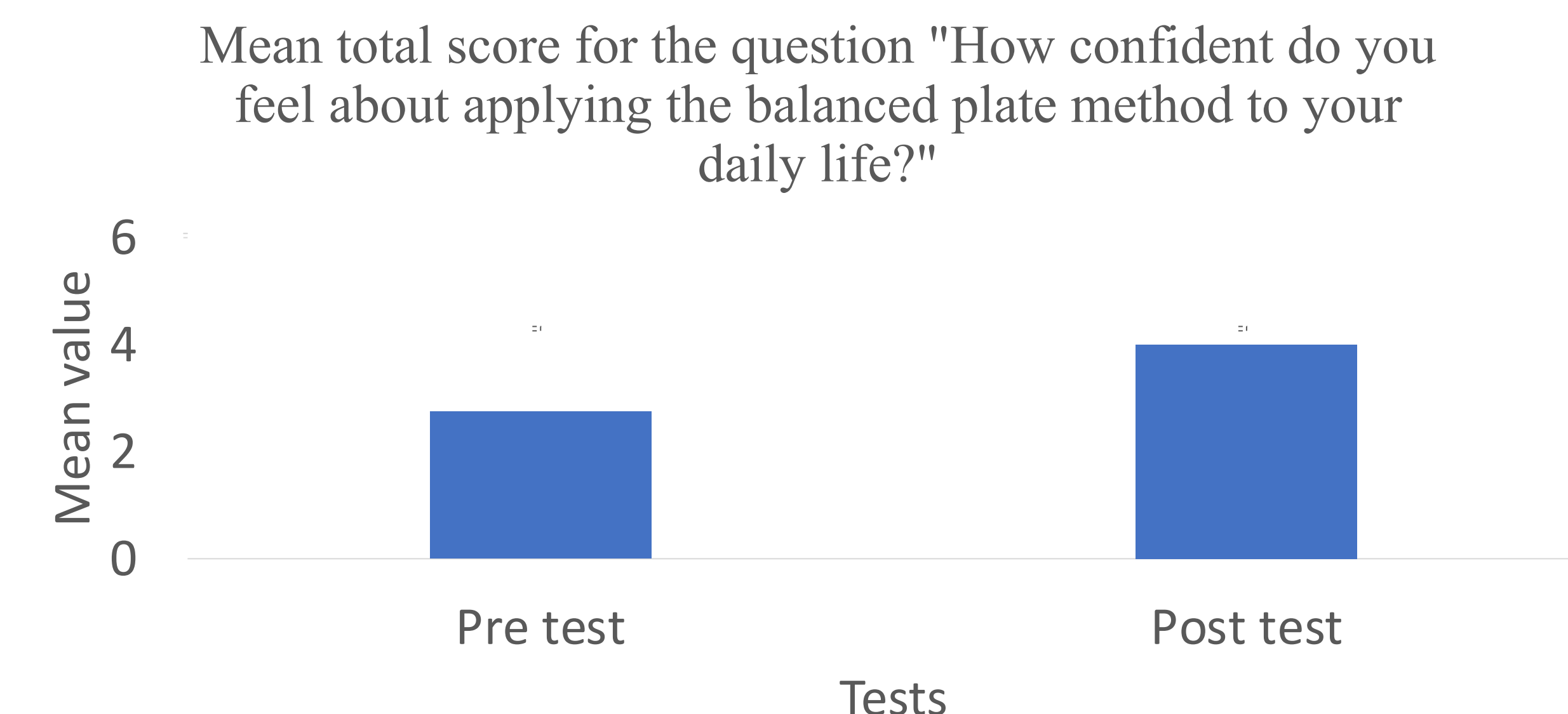


**Figure 1.** Mean and Standard Deviation of total scores on pre and post tests.

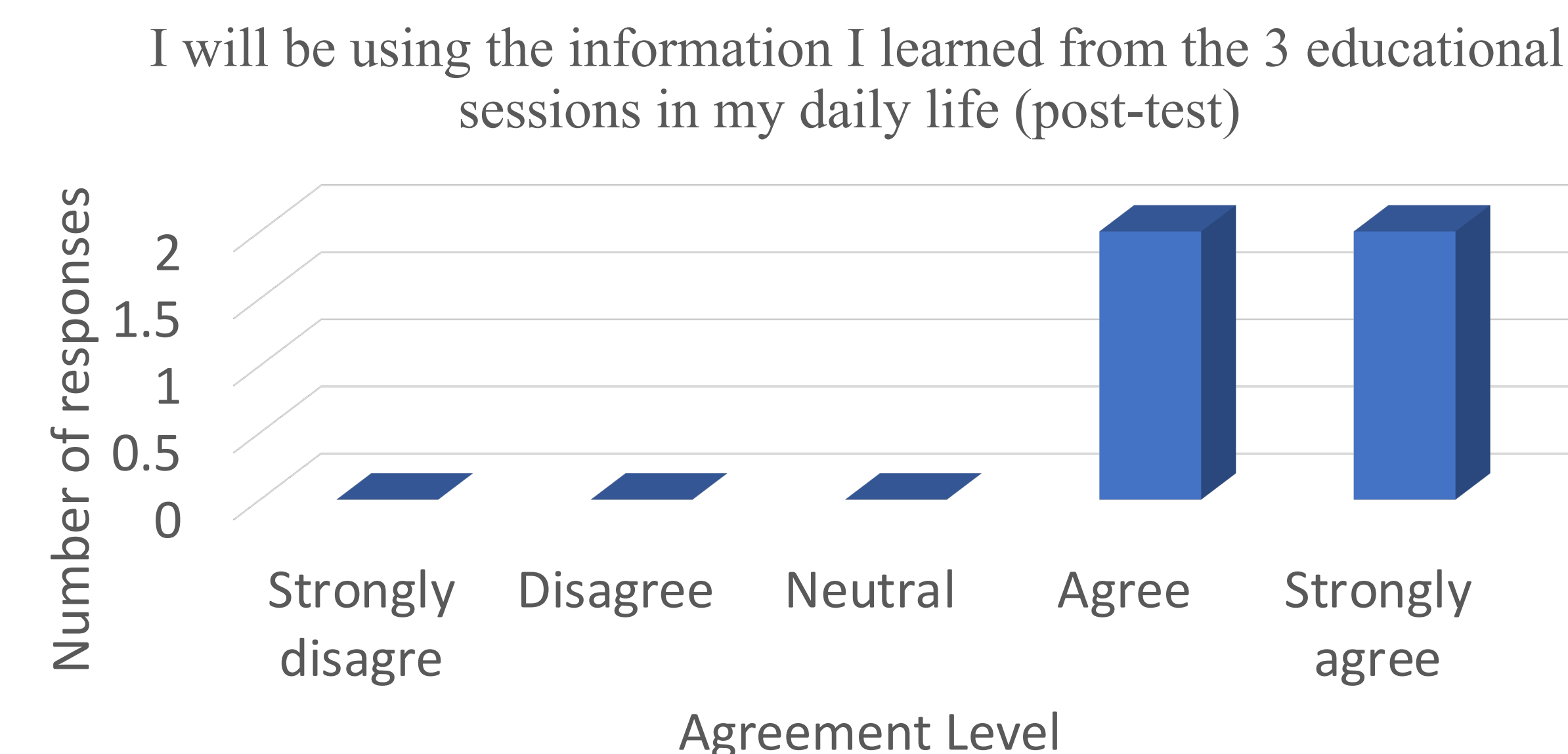


**Figure 2.** Mean values for the total scores on pre to post test answers to the question of how important is changing your lifestyle and using the balanced plate method.

## RESULTS, CONTINUED



**Figure 3.** Mean values for the total scores on pre to post test answers to the question of how confident do you feel about applying the balanced plate method to your daily life.



**Figure 4.** Post test answers to question 18; I will be using the information I learned from the 3 educational sessions in my daily life.

## CONCLUSION

- The findings from this study reject the authors' hypothesis that the educational sessions would increase knowledge of the participants.
- Even though the results were not found to be significant, several questions increased in correct responses and the participants reported being able to use this information in their lives.
- The goal of this study was to provide the participants with accurate nutrition information and have them be able to apply it to their daily lives.

## DISCUSSION

- This study was done on a small group of participants. This small group of participants prevented a waste of resources and time.
- This study had very specific inclusion and exclusion criteria.
- Questions from the GNKQ were used in the pre and post tests which helped make them more reliable since this questionnaire is already validated.
- This study took place over a very short amount of time which may have affected the results in the post test data.
- The number of participants who participated in all educational sessions and surveys may have affected the results.

## REFERENCES

- Adamski, M., Truby, H., M Klassen, K., Cowan, S., & Gibson, S. (2020, March 12). *Using the internet: Nutrition information-seeking behaviours of lay people enrolled in a massive online nutrition course*. Nutrients. Retrieved April 5, 2023, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7146568/>