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Assessing the Effectiveness of a Self-Efficacy and MyPlate-Based Intervention on Nutrition Knowledge of Crunch Fitness Members

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ABSTRACT

Background: Nutrition-related chronic diseases represent a significant health and economic burden in the United States. Despite established dietary guidelines, a gap exists in translating nutrition knowledge into lifestyle choices, particularly among individuals engaged in regular exercise, necessitating targeted interventions to bridge this knowledge gap.

Objective: To evaluate the effectiveness of the nutrition education intervention designed to increase nutrition knowledge in Crunch Fitness members.

Methods: A quasi-experimental design study and pre/post-intervention assessments were used to measure the effectiveness of two 60-minute intervention sessions based on enhancing self-efficacy through the Social Cognitive Theory, improving knowledge about MyPlate, food groups, and the drawbacks of short-term diets to Crunch Fitness members (n=12) voluntarily participating in the intervention. Participants underwent pre- and post- intervention surveys, with a follow-up survey one month later. Independent two-sample *t* tests were used to assess for significant changes in nutrition-related knowledge/skills and improvement in self-efficacy.

Results: The results reveal there was a significant difference in posttest scores when compared to the pretest scores of the knowledge section of the survey immediately following the intervention (p =.001) and at the one-month follow-up (p =.025). For the self-efficacy questions section of the survey, results reveal there was a significant difference in posttest scores when compared to pretest scores, (p =.002) immediately following the intervention, but not at the one-month follow up (p=.054).

Conclusion: In conclusion, the nutrition education intervention given at Crunch Fitness effectively increased participants' nutrition knowledge long-term, as evidenced by significant improvements in posttest survey scores one-month following the intervention.

INTRODUCTION

Nutrition-related chronic diseases represent a massive and largely preventable public health and economic burden in the United States.[1] According to the 2019 Global Burden of Disease Study of 195 countries, dietary factors are the single leading cause of death, exacting an even greater health burden than smoking.[2]

The US Dietary guidelines defines five food groups (fruits, vegetables, grains, proteins, dairy) and suggests limiting added sugars, sodium, and fats.[1] MyPlate, a part of the guidelines, assists individuals in making improved food selections.[1] Yet, the American diet remains notoriously unhealthy. Data from 2020 Dietary Guidelines for Americans showed 59% of male adults and 63% of female adults were exceeding the daily recommended added sugar intake, 73% of male adults and 70% of female adults exceeded the recommended saturated fat intake, 97% of male adults and 82% of female adults exceeded the recommended daily sodium intake and average intakes of fruits, vegetables, and dairy fell below the range of recommended intakes for all adults.[3]

A limitation of the Guidelines and MyPlate is the lack of knowledge and understanding on how to apply these tools to an individual's daily lifestyle.[1] Among the determinants of food choices in individuals, nutrition knowledge is considered as one of the factors affecting food intake.[4] According to Miller et al. individuals will change their diets appropriately when they get accurate information about what they should eat, and they should know the effects of food consumption on health.[5]

To effectively promote healthy nutrition in individuals, it is important to understand the determinants of their behaviors and change in these behaviors. One important theory of behavior change is Bandura's Social cognitive theory (SCT), which has been used extensively in the

health behavior literature to predict health behaviors and elicit behavior change. The theory focuses on self-efficacy, outcome expectations, self-regulation, and perceived impediments on behavior, including changes in dietary intake.[6] Self-efficacy is an important aspect in behavior change as self confidence in one's own ability to achieve something can provide motivation necessary to follow through with a change in behavior. A recent study by Anderson et al., showed that changes in self-efficacy and self-regulation were associated with changes in fat and fruit and vegetable intake in church members participating in an intervention involving these SCT constructs.[7]

Research has been done using MyPlate and the Social Cognitive theory to address the lack of nutrition knowledge, however, few initiatives have focused on these elements in improving the nutrition-related knowledge in a population of people who exercise.[1,6] Therefore, this study focuses on the population of Crunch Fitness members, a small gym located in Schenectady, NY.

Thirty-two members from Crunch Fitness were surveyed to assess fitness goals, exercise frequency per week, nutrition knowledge, previous dieting experience, barriers to reaching fitness goals, and perception of body image. After completing this needs assessment at Crunch Fitness, it was identified there was a food and nutrition-related knowledge deficit related to uncertainty on how to apply nutrition information as evidenced by a majority of participants (56%) expressed only "somewhat confidence" in their understanding of what constitutes as a healthful diet, the two main barriers to reaching their fitness goals were poor diet (47%) and time constraints (41%) and finally, a strong interest among participants in learning about diet and how to balance macronutrients. The objective of this study is to evaluate the effectiveness of the nutrition education intervention designed to increase nutrition knowledge in Crunch Fitness

members. Therefore, the author hypothesized that providing nutrition and/or food education interventions among this population could bring the greatest benefit for improving overall dietary quality and improving their ability to apply the nutrition education to their lifestyles.

METHODS

Study Design

This study employed a quasi-experimental design and targeted members of Crunch Fitness, a local gym situated in Schenectady, NY. A 60-minute intervention was conducted on two separate occasions, with one delivered in person and another online. This approach aimed to maximize participation by offering flexibility in time and location for Crunch Fitness members. To measure changes in food and nutrition-related knowledge, three questionnaires were designed. A pre- and post- survey was given at the beginning and end of each intervention. The pre-intervention survey established baseline knowledge, while the post-intervention survey assessed immediate changes. A follow-up survey sent one-month post-intervention was emailed to participants to assess knowledge retention and compliance with learned tools and goals. The intervention session and surveys aligned with Social Cognitive Theory (SCT) principles, covered topics such as MyPlate, food group comprehension, and the rationale behind the ineffectiveness of short-term diets. The study received approval from the SUNY Oneonta IRB and the manager of Crunch Fitness. All study participants provided written consent.

Intervention

The 60-minute intervention course was delivered two times during the month of February and each session was guided by the same facilitator. The intervention was developed based on

Bandura's Social Cognitive Theory (SCT), the US Dietary Guidelines, MyPlate, and behavior change to achieve long-term weight loss or overall better health. The Social Cognitive Theory was applied to enhance self-efficacy amongst participants, specifically in terms of their ability to construct a well-balanced meal by applying the knowledge and skills learned during the intervention. Additionally, the content of the intervention was based upon recent evidence-based studies pertaining to the impact of restrictive calorie diets on long-term weight loss and using MyPlate as an educational tool to help consumers make better food choices.

The two interventions conducted lasted 60 minutes each. For the in-person intervention, content was delivered via a lecture using a PowerPoint displayed on a TV. For the online intervention, participants followed along with the PowerPoint displayed on their computer screens while the facilitator lectured. Participants were kept engaged by being asked various questions related to their previous dieting experiences, current goals and applying the MyPlate information learned to scenarios.

Participants and Recruitment

Course participants were recruited through gym announcements made at the end of workout classes, handouts distributed, flyers posted throughout the gym and marketing on social media. All handouts and flyers contained a QR code that allowed the participants to sign up for either intervention class ahead of time. 7 participants attended the in-person intervention session and 5 participants attended the online intervention session. All participants signed consent prior to the start of the intervention.

Measures

In order to assess change in knowledge, a 16 question pre- and post-intervention survey was used. The surveys were developed containing questions pertaining to labeling a MyPlate diagram, choosing which foods go into each food group, the impact of short-term diets on long-term weight loss and a section regarding participants' confidence levels in making healthy food choices. The first four questions of the survey asked about knowledge of MyPlate. The questions consisted of an unlabeled graphic of the MyPlate image and asked participants to identify parts of the graphic. The next two questions asked about food groups and which foods would "count" as protein and fruit intake. Four questions pertained to short-term diets and their effect on long-term weight loss and the body. The final six questions evaluated participants' confidence levels in making healthy food choices, preparing meals, overcoming challenges, making long-term changes, planning meals in advance and incorporating a variety of fruits and vegetables into daily meals.

Data Analysis

To assess if there was a significant change in the nutrition related knowledge among participants following the intervention, the quantitative data from the pre/post-intervention assessments were analyzed using SPSS. Survey questions were divided into two categories, nutrition-related knowledge (questions #3-10) and self-efficacy (questions #11-14). A two-sample statistical analysis t-test was used to compare the raw scores from each category from the pre- versus both the first and second post- intervention survey. To determine statistical significance, the level for significance was set at $P < 0.05$.

RESULTS

Nutrition Knowledge

(See **Appendix A** for pre-intervention Survey, **Appendix B** for the first post-intervention survey and **Appendix C** for the second post-intervention survey)

The pre- and post- intervention results from the nutrition knowledge section (survey questions #3-10) are presented in **Figure 1**. An independent two-sample *t* test was conducted to compare mean nutrition knowledge scores related to pre- and post- intervention assessments, which assessed their knowledge regarding MyPlate, foods that go into each group, and the impact of short-term diets on long-term weight loss. The results reveal there was a significant difference in posttest scores when compared to the pretest scores of the knowledge section of the survey (p =.001) (**Fig. 1**).

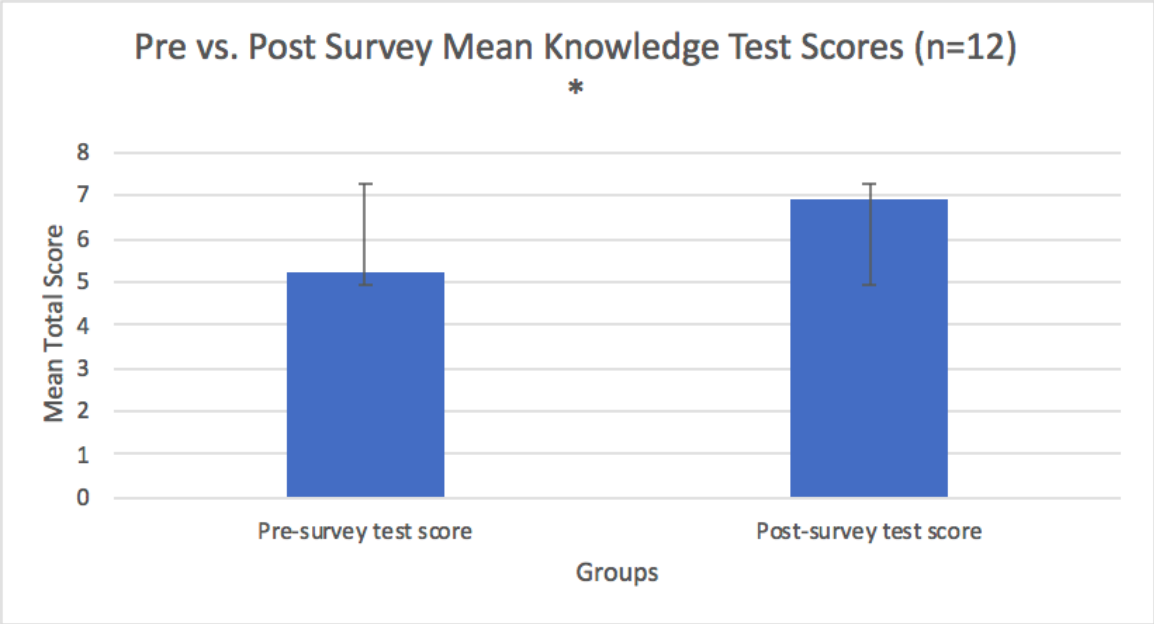

Figure 1. Changes in the mean group scores from the pre- and post-intervention nutrition knowledge questions (survey questions #3-10). Mean group scores are based on the average points earned by participants (n=12) out of the total possible points (8). The changes in mean

group scores from the pre- and post- intervention assessment were statistically significant (p =.001). *Indicates significance of $P < .05$.

One month following the intervention, a second post- intervention survey was given to participants again to assess long-term knowledge. The pre- and second post- intervention results from the nutrition knowledge section (survey questions #3-10) are presented in **Figure 2**. An independent two-sample t test was conducted to compare mean nutrition knowledge scores related to pre- and second post- intervention assessments. The results reveal there was a significant difference in posttest scores one month following the intervention when compared to the pretest scores of the knowledge section of the survey (p =.025) (**Fig. 2**).

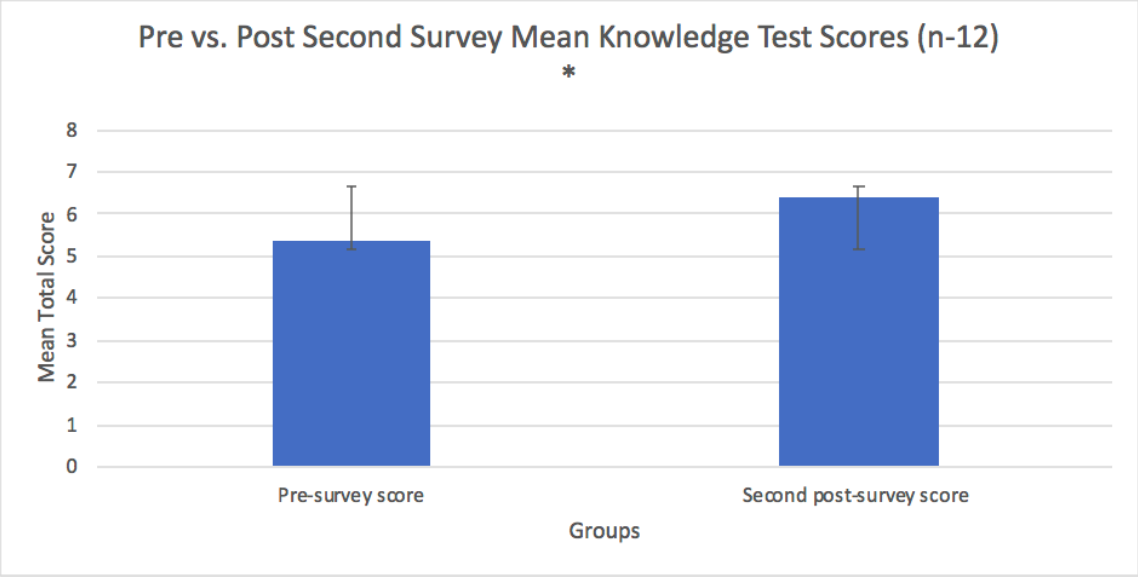

Figure 2. Changes in the mean group scores from the pre- and second post-intervention nutrition knowledge questions (survey questions #3-10). Mean group scores are based on the average points earned by participants (n=12) out of the total possible points (8). The changes in mean group scores from the pre- and post- intervention assessment were statistically significant (p =.025). *Indicates significance of $P < .05$.

Self-efficacy

(See **Appendix A** for pre-intervention Survey, **Appendix B** for the first post-intervention survey and **Appendix C** for the second post-intervention survey)

The pre- and post-intervention results from the self-efficacy section (survey questions #11-14) are summarized in **Figure 3**. Points were assigned to each answer for the questions in this section. If the participant answered "not at all" they were given 0 points for that question, "somewhat confident" was given 1 point and "very confident" was given 2 points. Total points were out of 8. An independent two-sample *t* test was conducted to compare mean self-efficacy scores related to pre- and post- intervention assessments, which assessed their confidence levels in making healthy food choices, preparing meals, overcoming challenges, and making long-term changes. The results reveal there was a significant difference in posttest scores when compared to the pretest scores of the self-efficacy section of the survey (p =.002) (**Fig. 3**).

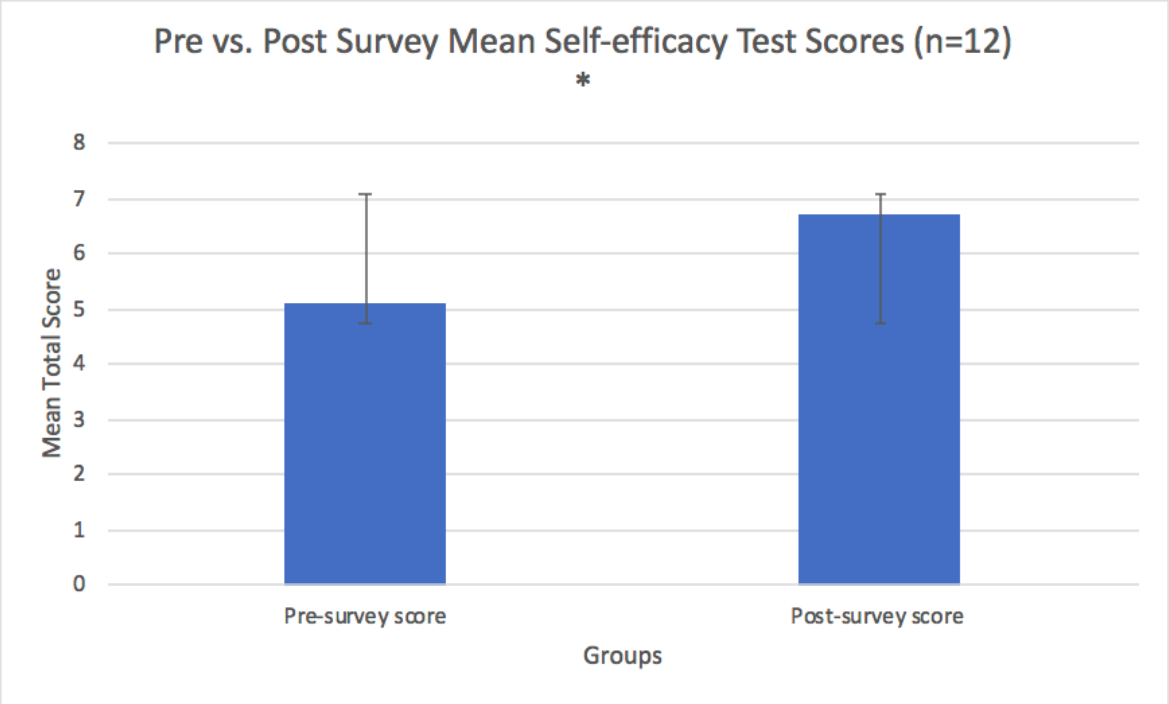

Figure 3. Changes in the mean group scores from the pre- and post-intervention self-efficacy questions (survey questions #11-14). Mean group scores are based on the average points earned by participants (n=12) out of the total possible points (8). The changes in mean group scores from the pre- and post- intervention assessment were statistically significant (p =.002). *Indicates significance of $P < .05$.

One month following the intervention, a second post- intervention survey was given to participants again to assess long-term knowledge. The pre- and second post-intervention results from the self-efficacy section (survey questions #11-14) are summarized in **Figure 4**. Points were assigned to each answer for the questions in this section. If the participant answered "not at all" they were given 0 points for that question, "somewhat confident" was given 1 point and "very confident" was given 2 points. Total points were out of 8. An independent two-sample t test was conducted to compare mean self-efficacy scores related to pre- and second post-intervention assessments. The results reveal there was not a significant difference in posttest scores one month post- intervention when compared to the pretest scores of the self-efficacy section of the survey (p =.054) (**Fig. 4**).

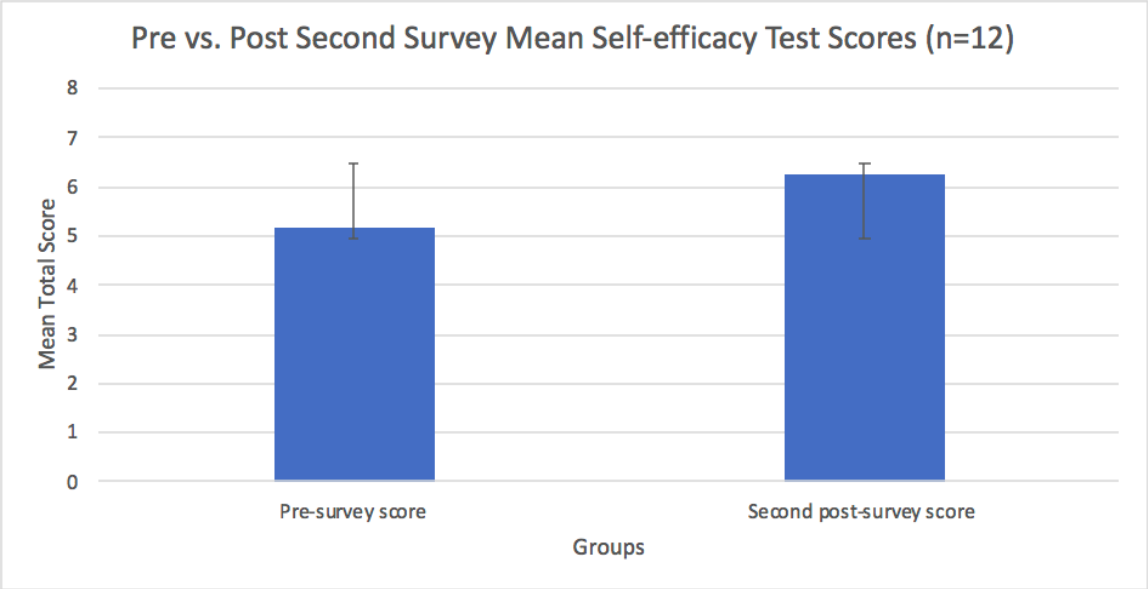

Figure 4. Changes in the mean group scores from the pre- and second post-intervention self-efficacy questions (survey questions #11-14). Mean group scores are based on the average points earned by participants (n=12) out of the total possible points (8). The changes in mean group scores from the pre- and post- intervention assessment were not statistically significant (p =.054).

DISCUSSION

The current study showed that an intervention based on Bandura's Social Cognitive Theory (SCT), MyPlate, and behavior change to achieve long-term weight loss or overall better health did increase nutrition related knowledge and self-efficacy among Crunch Fitness Participants immediately following the intervention.

Findings indicated that the post intervention survey scores immediately after the intervention were significantly higher in both the nutrition knowledge section (p=.001) and self-efficacy section (p=.002), indicating a notable improvement in participants' understanding of nutrition concepts and their confidence levels in making healthy food choices, preparing meals,

overcoming challenges, and making long-term changes. The results of the one-month follow-up survey indicate sustained significant improvement in nutrition knowledge among participants (p=0.025). This finding underscores the effectiveness of the intervention in conveying lasting nutrition-related knowledge to participants, potentially facilitating long-term dietary behavior change. However, while improvement in nutrition knowledge remained significant, there was no statistically significant change in self-efficacy scores between the pre- and second post-intervention assessment (p=0.54). This suggests that while participants retained the knowledge acquired during the intervention, there may have been limited impact on their confidence or belief in their ability to apply this knowledge in real-life situations.

The application of SCT in health promotion interventions has been widely studied and consistently shown promising results in various populations.[7,9,10] For instance, studies implementing SCT-based interventions in community centers, schools, primary care practice and workplace wellness programs have reported improvements in nutrition-related behaviors and psychological determinants such as self-efficacy and outcome expectancies.[7,9,10] The current study's findings align with these studies, underscoring the efficacy of SCT-based approaches in promoting healthier dietary practices and enhancing individuals' confidence in their ability to make lifestyle changes.

Additional studies have shown incorporating novel strategies like MyPlate into nutrition education interventions enhanced participants' understanding of dietary concepts, promoted healthier food choices and significantly increased nutrition knowledge post intervention.[1,8] Nazmi et al. presented findings from a randomized control trial that showed incorporating MyPlate + NOVA in nutrition education interventions increased nutrition knowledge when compared to the control group in the study.[1] Although, no significant differences were detected

between the MyPlate + NOVA and MyPlate groups.[1] This finding suggests that while the addition of the NOVA classification may enhance participants' understanding of nutrition concepts, the core principles of established dietary guidelines like MyPlate remain effective in promoting dietary awareness and classification skills.

Although most of the results were statistically significant, the sample size is rather small (n=12). A major challenge was getting more individuals to participate to reach a larger population. Future research should examine how to encourage participation through use of incentives to get larger, more diverse samples to help validate the effectiveness of similar interventions across different demographic groups and settings. Another limitation to this study was the short duration of the intervention. The relatively brief duration of the intervention sessions may have limited the depth and scope of the educational content delivered. Future research should examine how a longer intervention may impact long-term nutrition knowledge and self-efficacy.

Furthermore, while the current studies intervention focused on improving nutrition knowledge and self-efficacy, other factors influencing dietary behaviors, such as socioeconomic status, food accessibility, and cultural influences, were not explicitly addressed. Future interventions could benefit from considering these contextual factors to develop more comprehensive and culturally sensitive approaches to promoting healthy eating habits. The discrepancy between sustained knowledge improvement and unchanged self-efficacy highlights a potential area for further research to be done, such as incorporating additional strategies to improve participants' confidence in implementing healthier dietary choices.

CONCLUSION

The nutrition education intervention given at Crunch Fitness effectively increased participants' nutrition knowledge, as evidenced by significant improvements in post- intervention survey scores even one month following the intervention. However, while there was a significant increase in knowledge, the self-efficacy scores did not show a statistically significant change over the same period, suggesting potential areas for further refinement in the intervention's design to support participants' confidence in applying the gained knowledge to their dietary choices.

REFERENCES

1. Nazmi A, Tseng M, Robinson D, Neill D, Walker J. A nutrition education intervention using NOVA is more effective than MyPlate Alone: A proof-of-concept randomized controlled trial. *Nutrients*. 2019;11(12):2965. doi:10.3390/nu11122965.
2. Afshin A, Sur PJ, Fay KA, et al. Health effects of dietary risks in 195 countries, 1990–2017: A systematic analysis for the global burden of disease study 2017. *The Lancet*. 2019;393(10184):1958-1972. doi:10.1016/s0140-6736(19)30041-8.
3. 2020-2025 Dietary Guidelines for Americans. 2020. Accessed February 3, 2024. https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf.
4. Scalvedi ML, Gennaro L, Saba A, Rossi L. Relationship between nutrition knowledge and dietary intake: An assessment among a sample of Italian adults. *Frontiers in Nutrition*. 2021;8. doi:10.3389/fnut.2021.714493.
5. Miller LM, Cassady DL. The effects of nutrition knowledge on food label use. A review of the literature. *Appetite*. 2015;92:207-216. doi:10.1016/j.appet.2015.05.029.
6. Doerksen SE, McAuley E. Social cognitive determinants of dietary behavior change in University Employes. *Frontiers in Public Health*. 2014;2. doi:10.3389/fpubh.2014.00023.
7. Anderson ES, Winett RA, Wojcik JR. Self-regulation, self-efficacy, outcome expectations, and social support: Social Cognitive Theory and nutrition behavior. *Annals of Behavioral Medicine*. 2007;34(3):304-312. doi:10.1007/bf02874555.
8. Koning, Carmen. Effect of MyPlate Education on Overall Nutritional Knowledge at a Local Food Pantry and Resource Center in Watauga County, North Carolina. Dissertation. Appalachian State University; May 2017. https://core.ac.uk/download/pdf/345084676.pdf
9. Islam KF, Awal A, Mazumder H, et al. Social cognitive theory-based health promotion in Primary Care Practice: A scoping review. *Heliyon*. 2023;9(4). doi:10.1016/j.heliyon.2023.e14889.
10. Shamizadeh, T., Jahangiry, L., Sarbakhsh, P. *et al.* Social cognitive theory-based intervention to promote physical activity among prediabetic rural people: a cluster randomized controlled trial. *Trials* 20, 98 (2019). https://doi.org/10.1186/s13063-019-3220-z

APPENDIX A

This is a survey to assess the food and nutrition-related knowledge of the members at Crunch Fitness who are participating in this nutrition intervention. A survey will be given before and after the nutrition intervention to see how much nutrition-related knowledge was gained.

This is an anonymous survey. Please answer the following questions honestly and to the best of your ability.

1. I have seen the above figure before.
    a) True
    b) False
    c) Unsure
2. I often use the above graphic to help guide me in making food choices.
    a) True
    b) False
3. What food groups are represented by the red, green, orange and purple sections in the figure above?
    1. Fruits, vegetables, grains and protein
    2. Fruits, vegetables, protein and fats
    3. Grains, fats, fruits, and protein
    4. Protein, vegetables, grains, and fats
    5. Unsure
4. What is represented by the blue circle in the upper right-hand corner in the figure above?
    1. Water
    2. Dessert
    3. Grains
    4. Dairy
    5. Oils
5. Which of these CANNOT be considered a protein?

a) Nuts
b) Seeds
c) Beans
d) Peas
e) All of these are considered a protein
f) None of these foods can be considered a protein

6 To maintain a healthy weight people should cut out fat and bread completely.
   a) True
   b) False
   c) Unsure
7. Fruit can be fresh, canned, frozen, or dried in order to count as fruit intake.
   a) True
   b) False
   c) Unsure
8. If you were to decrease your caloric intake by 500 calories every week, you would continue losing one lb every week.
   a) True
   b) False
   c) Unsure
9. Very restrictive calorie diets (for example; a 1200 kcal diet plan) are best for long-term weight loss.
   a) True
   b) False
   c) Unsure
10. Losing weight by reducing calorie intake may result in…
   a) An increased metabolism
   b) An increase in hunger hormones
   c) An increase is muscle mass
   d) All the above

For the next few questions, please read and encircle one of the choices below each question that indicates how you feel.

11. I am confident in making healthy food choices.

Not at all Somewhat confident Very Confident

12. I am confident in my ability to prepare healthy meals for myself and my family.

Not at all Somewhat confident Very Confident

13. I believe I can overcome challenges to maintain a nutritious diet.

Not at all Somewhat confident Very Confident

14. I feel capable of making long-term changes to improve my eating habits.

Not at all Somewhat confident Very Confident

15. I regularly plan my meals in advance to ensure a balanced diet.

Never Sometimes Often Always

16. I incorporate a variety of fruits and vegetables into my daily meals.

Never Sometimes Often Always

APPENDIX B

This is a survey to assess the food and nutrition-related knowledge of the members at Crunch Fitness who are participating in this nutrition intervention. A survey will be given before and after the nutrition intervention to see how much nutrition-related knowledge was gained.

This is an anonymous survey. Please answer the following questions honestly and to the best of your ability.

1. I have seen the above figure before.
    a) True
    b) False
    c) Unsure
2. I will use this graphic to help guide me in making food choices.
    a) True
    b) False
3. What food groups are represented by the red, green, orange and purple sections in the figure above?
    a) Fruits, vegetables, grains and protein
    b) Fruits, vegetables, protein and fats
    c) Grains, fats, fruits, and protein
    d) Protein, vegetables, grains, and fats
    e) Unsure
4. What is represented by the blue circle in the upper right hand corner in the figure above?
    a) Water
    b) Dessert
    c) Grains
    d) Dairy
    e) Oils
5. Which of these CANNOT be considered a protein?
    a) Nuts
    b) Seeds
    c) Beans
    d) Peas
    e) All of these foods can be considered a protein
    f) None of these foods can be considered a protein
6. To maintain a healthy weight people should cut out fat and bread completely.
    a) True
    b) False
    c) Unsure

7. Fruit can be fresh, canned, frozen, or dried in order to count as fruit intake.
    a) True
    b) False
    c) Unsure
8. If you were to decrease your caloric intake by 500 calories every week, you would continue losing one lb every week.
    a) True
    b) False
    c) Unsure
9. Very restrictive calorie diets (for example; a 1200 kcal diet plan) are best for long-term weight loss.
    a) True
    b) False
    c) Unsure
10. Losing weight by reducing calorie intake may result in…
    a) An increased metabolism
    b) An increase in hunger hormones
    c) An increase is muscle mass
    d) All the above

In the next 2-4 weeks, what are two **nutrition-related goals** you'd like to achieve?

For the next few questions, please read and encircle one of the choices below each question that indicates how you feel.

11. I am confident in making healthy food choices.

Not at all Somewhat confident Very Confident

12. I am confident in my ability to prepare healthy meals for myself and my family.

Not at all Somewhat confident Very Confident

13. I believe I can overcome challenges to maintain a nutritious diet.

Not at all Somewhat confident Very Confident

14. I feel capable of making long-term changes to improve my eating habits.

Not at all Somewhat confident Very Confident

15. I intend to make dietary changes based on the knowledge gained from this educational session.

Yes No Maybe

16. I am committed to incorporating healthier food choices into my lifestyle.

Yes No Maybe

APPENDIX C

This is a survey to assess the food and nutrition-related knowledge of the members at Crunch Fitness who participated in the nutrition intervention class given at Crunch Fitness. This survey will be given 2-4 weeks after the nutrition intervention class to see how much long-term nutrition-related knowledge was gained. This is an anonymous survey. Please answer the following questions honestly and to the best of your ability.

1. I have seen the above figure before.
    a) True
    b) False
    c) Unsure
2. I use this graphic to help guide me in making food choices.
    a) Never
    b) Sometimes
    c) Often
    d) Always
3. What food groups are represented by the red, green, orange and purple sections in the figure above?
    a) Fruits, vegetables, grains and protein
    b) Fruits, vegetables, protein and fats
    c) Grains, fats, fruits, and protein
    d) Protein, vegetables, grains, and fats
    e) Unsure
4. What is represented by the blue circle in the upper right hand corner in the figure above?
    a) Water
    b) Dessert
    c) Grains
    d) Dairy
    e) Oils
5. Which of these CANNOT be considered a protein?
    a) Nuts
    b) Seeds
    c) Beans
    d) Peas
    e) All of these foods can be considered a protein
    f) None of these foods can be considered a protein
6. To maintain a healthy weight people should cut out fat and bread completely.
    a) True
    b) False
    c) Unsure

7. Fruit can be fresh, canned, frozen or dried in order to count as fruit intake.
    a) True
    b) False
    c) Unsure
8. If you were to decrease your caloric intake by 500 calories every week, you would continue losing one lb every week.
    a) True
    b) False
    c) Unsure
9. Very restrictive calorie diets (for example; a 1200 kcal diet plan) are best for long-term weight loss.
    a) True
    b) False
    c) Unsure
10. Losing weight by reducing calorie intake may result in…
    d) An increased metabolism
    e) An increase in hunger hormones
    f) An increase is muscle mass
    g) All the above

Remembering back to the nutrition class, you wrote down two nutrition-related goals that you wanted to achieve in 2-4 weeks, what were they? Write I don't know if you can't remember.

_____

Did you achieve these goals? If not, what are the barriers you've faced to achieving these goals?

_____

For the next few questions, please read and encircle one of the choices below each question that indicates how you feel.

11. I am confident in making healthy food choices

Not at all Somewhat confident Very Confident

12. I am confident in my ability to prepare healthy meals for myself and my family.

Not at all Somewhat confident Very Confident

13. I believe I can overcome challenges to maintain a nutritious diet.

Not at all Somewhat confident Very Confident

14. I feel capable of making long-term changes to improve my eating habits.

Not at all Somewhat confident Very Confident