

ABSTRACT

Background: Disordered eating attitudes and behaviors, nutrition-related knowledge deficits, and high acceptance rates of nutrition related misinformation concerning harmful weight control behaviors and attitudes are extremely prevalent among adolescents.

Objective: To assess the effectiveness of a self-efficacy and dissonance-based intervention that incorporates the principles of intuitive eating in improving nutrition related knowledge and skills, and in reducing the acceptance of nutrition misinformation related to harmful disordered eating and weight control attitudes.

Methods: A quasi-experimental design study and pre/post-intervention assessments were used to measure the effectiveness of a 3-session self-efficacy and dissonance-based intervention program in improving the nutrition related knowledge and skills, and in reducing the acceptance of nutrition misconceptions related to harmful weight control behaviors and attitudes of 8th grade physical education (PE) students (n=4) voluntarily participating in the fitness unit. Wilcoxon signed rank tests were used to assess for significant changes in nutrition-related knowledge/skills and the acceptance of nutrition related misconceptions.

Results: The intervention did not yield statistically significant improvements in nutrition-related knowledge/skills or significant reductions in the acceptance of nutrition misconceptions related to harmful disordered eating and weight control attitudes.

Conclusion: The discrepancies between the findings of the current study and prior studies regarding the effectiveness of the intervention's theoretical framework in eliciting improvements in nutrition knowledge, skills, and attitudes related to disordered eating, may suggest that the current study's exposure times were insufficient, and the sample size was too small to determine statistical significance.

INTRODUCTION

- Adolescents are increasingly vulnerable to health-related behaviors and require adequate nutrition to support healthy development and growth.¹⁻⁴
- Disordered eating attitudes and behaviors, nutrition knowledge deficits, and the acceptance of harmful nutrition misinformation are all extremely prevalent among adolescents.⁵
- Addressing the undesirable and harmful health-related behaviors of adolescents is crucial due to the associated short- and long-term consequences.^{1,2,4}
- Past interventions have demonstrated the application of the cognitive dissonance theory, social learning theory, and intuitive eating principles alone in improving nutrition-related knowledge and skills, and in reducing harmful weight control behaviors and attitudes among adolescents and young adults.⁶⁻⁹
- There are no existing studies that have assessed the effectiveness of a single intervention that incorporates the principles of the cognitive-dissonance, social learning theory, and intuitive eating, in improving nutrition-related knowledge, skills, and attitudes.
- The aim of the study was to assess the effectiveness of an intervention built upon the framework of self-efficacy, cognitive-dissonance, and intuitive eating, in improving nutrition-related knowledge and skills, and in reducing the acceptance of nutrition-related myths.

METHODS

- The study was conducted at Mount Anthony Union Middle School in Bennington, Vermont and participants were students who selected to participate in the fitness unit in the 8th grade PE class.
- Of the 6 students who voluntarily enrolled in the study, 4 students completed all intervention sessions and pre/post-intervention assessments.
- The intervention consisted of 3, 30-minute sessions spanning over the course of 2 weeks, that occurred during regular scheduled class times.
- Interventions included one or a combination of the following elements: PowerPoint presentations, hands-on food demonstrations, food tastings, interactive physical activity demonstrations, an interactive technology-based game, group discussions, and supplementary educational handouts.
- The primary outcome measures were changes in nutrition-related knowledge and skills regarding building a balanced meal and the acceptance of nutrition-related myths related to harmful weight control attitudes and behaviors.
- Nutrition-related knowledge was measured before and after the intervention using the *Building a Balanced Meal Survey* and average scores were compared.
- Acceptance of nutrition-related myths was measured before and after the intervention using the *Nutrition Concepts: Myth or Fact Survey* and average scores were compared.
- Quantitative data from pre/post-intervention assessments were compared using a non-parametric statistical analysis test, the Wilcoxon signed rank test, due to the study's small sample size.

RESULTS

	Building a Balanced Meal Survey			
	Sample Size (n)	Mean (M) Group Percentage Score (%) ^a (n=4)	Sample Standard Deviation (S)	95% Confidence Interval (CI)
Pre-Intervention	4	63.15	40.08	23.87-102.43
Post-Intervention	4	92.1	9.12	83.16-101.04

Table 1. Pre- and post-intervention mean group scores from the *Building a Balanced Meal Survey*. ^aThe mean group (n=4) score is based on average points earned out of 19 possible points for each participant. Each correct response or selected answer earns 1 point; survey items #3-6 were worth 1 point; survey item #1 contained 5 components and was worth 5 points (each correct response was worth 1 point); survey item #2 contained 10 components and was worth 10 points (each correct response was worth 1 point).

RESULTS, CONTINUED

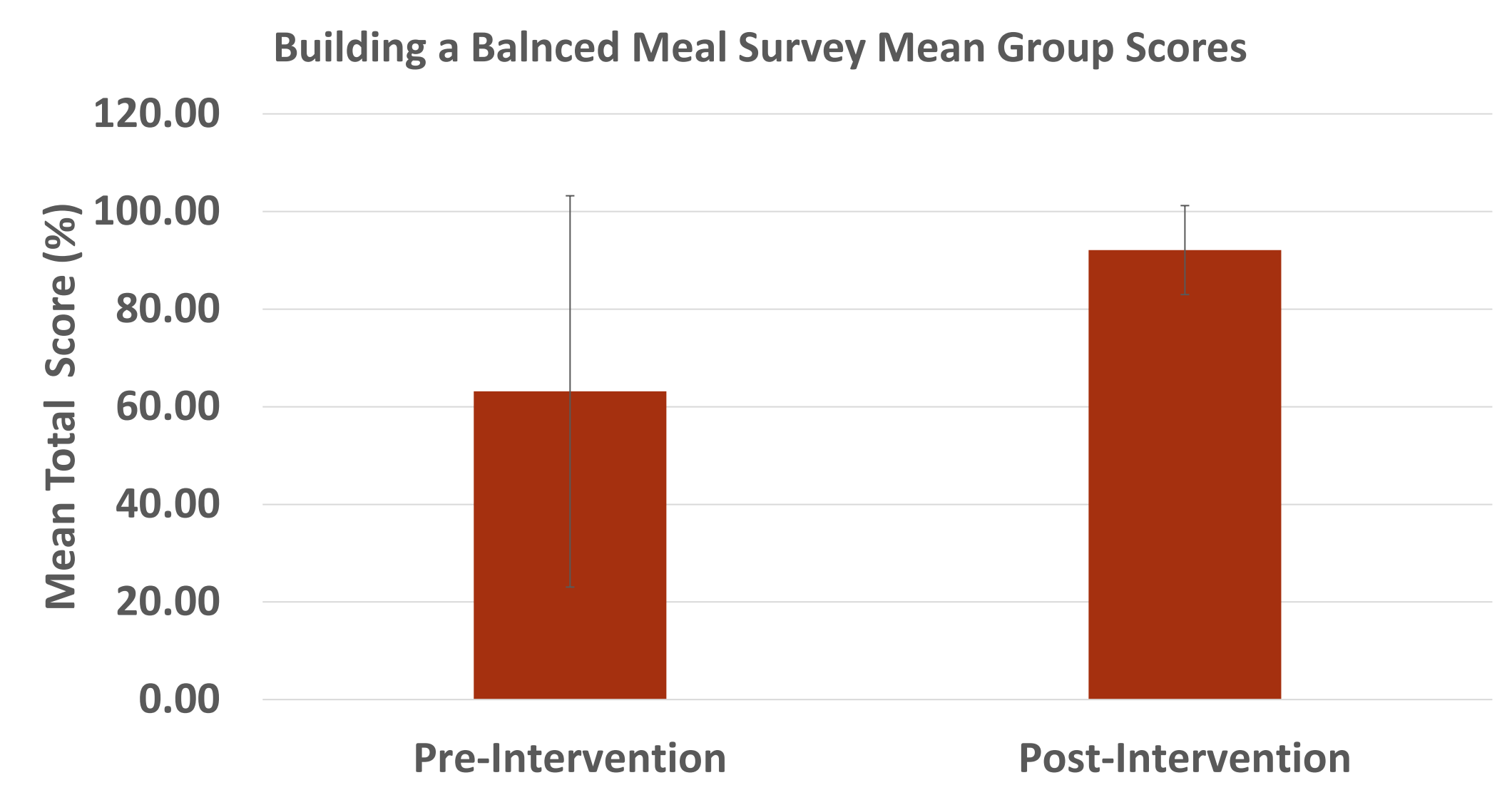


Figure 1. The figure displays mean and standard deviation. Mean group percentage scores are based on the average points earned by participants (n=4) out of the total possible points (19). The changes in mean group scores from the pre- and post-intervention assessment were not statistically significant (p = 0.068).

	Nutrition Concepts: Myth or Fact Survey			
	Sample Size (n)	Mean (M) Group Percentage Score (%) ^a (n=4)	Sample Standard Deviation (S)	95% Confidence Interval (CI)
Pre-Intervention	4	27.78	27.96	0.38-55.18
Post-Intervention	4	8.33	10.64	-2.09-18.75

Table 2. Pre- and Post-Intervention mean group scores from the *Nutrition Concepts: Myth or Fact Survey*. ^aPercentage scores are based on the number of misconception statements that participants (n=4) indicated to be true out of a total of 9 false statements included on the survey.

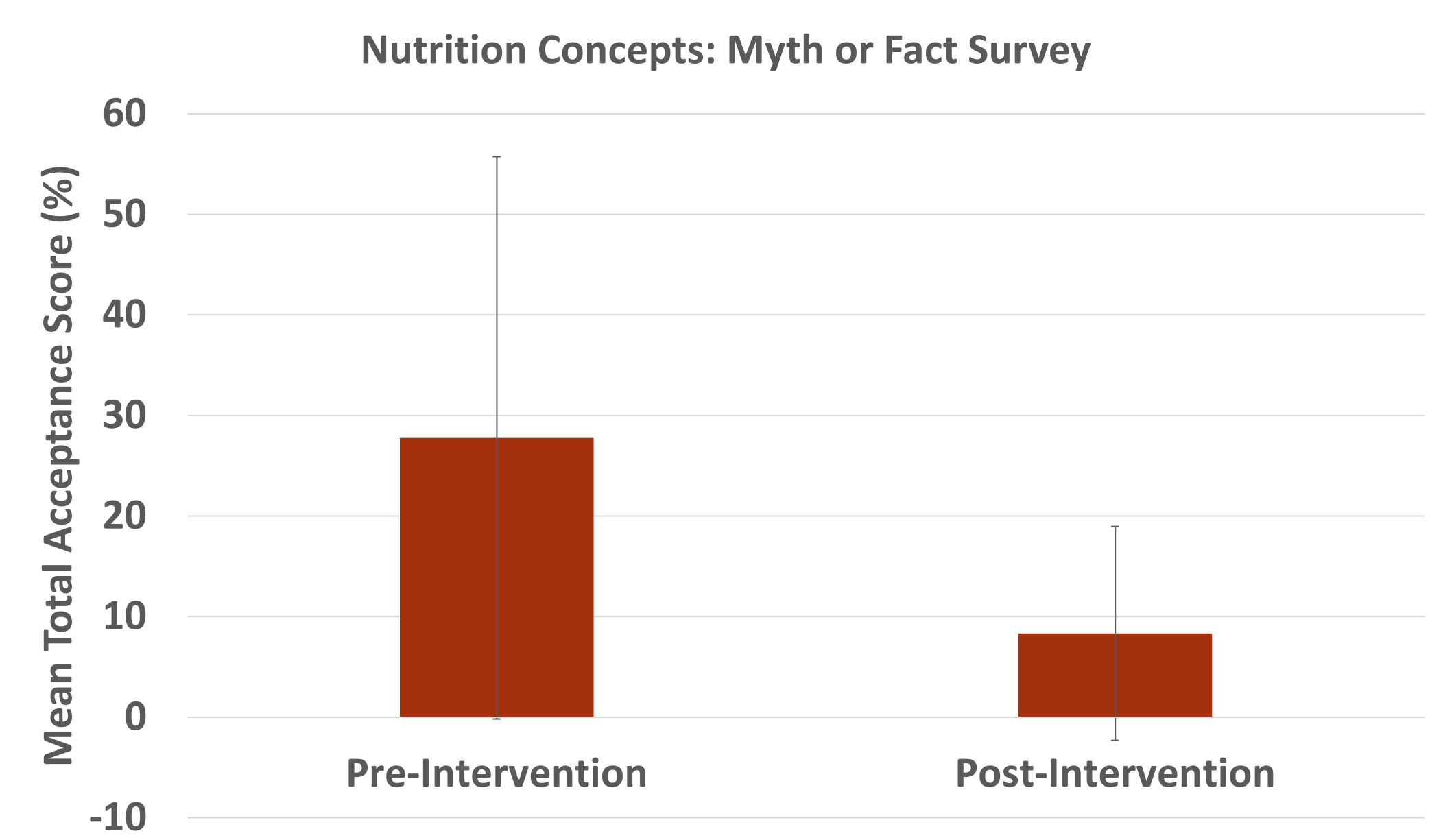


Figure 2. The figure displays mean and standard deviation. Mean group percentage scores are based on the average number of misconceptions accepted to be true by participants (n=4) out of 9 total false statements on the survey. The changes in mean group scores from the pre- and post-intervention assessment were not statistically significant (p = 0.180).

DISCUSSION

- The current study showed that a self-efficacy and dissonance-based intervention that incorporates the principles of intuitive eating did not yield statistically significant improvements in nutrition related knowledge and skills, or significant reductions in the acceptance of nutrition misconceptions related to harmful disordered eating and weight control attitudes in 8th grade students.
- The lack of the statistical significance in the study's findings could be attributed to the study's small sample size (n=4), as small sample sizes can increase the risk for type II errors to occur.
- The short exposure times observed in the current study could potentially explain the inconsistencies between the findings of the current study and existing studies, regarding the effectiveness of the theoretical frameworks applied in eliciting improvements in nutrition knowledge, skills, and attitudes related to disordered eating.

CONCLUSION

The findings of the current study support the need for future research using larger sample sizes and longer exposure times to evaluate the effectiveness of a self-efficacy and dissonance-based intervention that incorporates the principles of intuitive eating in improving nutrition-related knowledge and skills, and in reducing the acceptance of such nutrition misconceptions among adolescents.

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