

Assessing the Effectiveness of a Health-Belief Model-Based Intervention on the Nutrition Knowledge, Health Beliefs, and Behaviors of Adult Participants of the YMCA

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ABSTRACT

Background: Nutrition is foundational for athletes to achieve optimal athletic performance and to promote proper recovery while reducing the risk of injury. Many lack nutrition-related knowledge, health beliefs, and behaviors pertaining to general and sports nutrition to do so.

Objectives: To assess the effectiveness of a health belief model-based intervention for improving nutrition-related knowledge, health beliefs, and behaviors.

Methods: A quasi-experimental design study and pre/post-intervention assessments were used to measure the effectiveness of an online health belief model-based intervention program in improving nutrition-related knowledge, health beliefs, and behaviors of adult participants (n = 4) of the YMCA. Mann-Whitney U tests were used to assess for changes in significance in nutrition related knowledge, health beliefs, and behaviors.

Results: The intervention did not produce improvements in nutrition-related knowledge, health beliefs, and behaviors of statistical significance related to general and sports nutrition.

Conclusions: The discrepancies in the findings of the current study and prior studies relating to the effectiveness of the intervention's theoretical framework in producing improvements in general and sports nutrition related knowledge, health beliefs, and behaviors may suggest that the current studies' unequal, small sample size resulted in the inability to determine statistical significance.

- The study was conducted at the Greene County YMCA in Coxsackie, New York and participants were adults with active memberships at the facility.
- Of the 18 participants to voluntarily enrolled in the study, 4 participants completed all intervention materials and pre/post intervention assessments.
- The intervention consisted of 2, 10-minute videos, available for 2 weeks, that participants completed in their own time.
- Interventions contained both discussions regarding sports and general nutrition education and food preparation demonstrations.
- The primary outcome measures were changes in nutrition-related knowledge, health beliefs, and behaviors regarding general and sports nutrition.
- Nutrition-related knowledge, health beliefs, and behaviors were measured prior to and following the intervention using the *YMCA Intervention Tool* and median scores were compared.
- Quantitative data from pre/post intervention assessments were compared using a non-parametric statistical analysis test, the Mann-Whitney U test, due to the study's unequal sample size.
- Statistical significance was determined using a P-value of $P < 0.05$.

RESULTS, CONTINUED

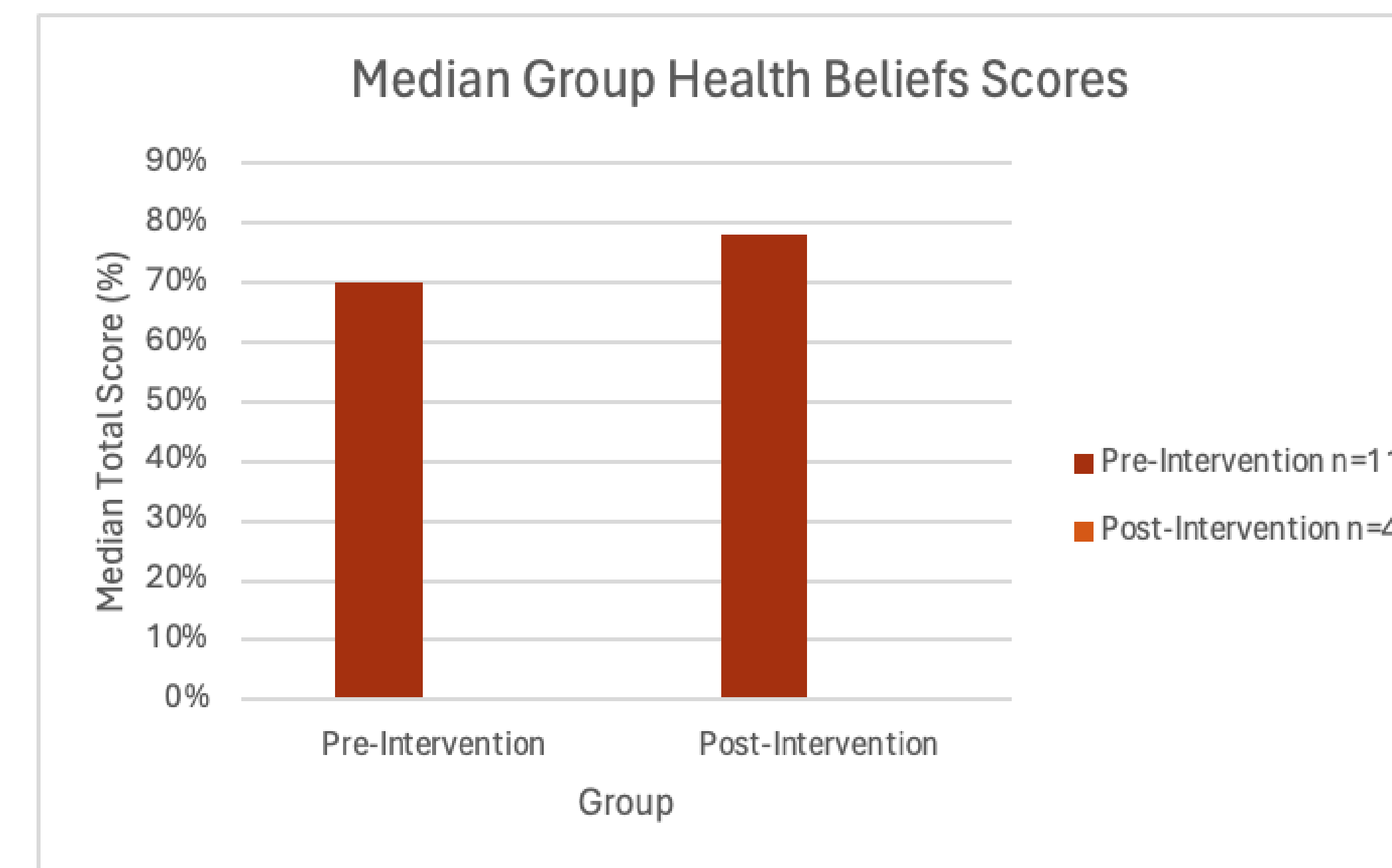


Figure 2. Changes in median Health Belief scores from the pre-and post-intervention *YMCA Intervention Tool*. The figure displays medians. Median group percentage scores are based on the average points earned by participants in the pre-intervention group (n = 11) and post-intervention group (n = 4) out of the total possible points for the Health Belief section (40). The changes in median group scores from the pre- and post-intervention knowledge assessment were not statistically significant ($p = 0.28$).

DISCUSSION

- The current study showed that a health-belief-based intervention did not yield statistically significant improvements in nutrition related knowledge, health beliefs, or behaviors in adult participants at the Greene County YMCA.
- The lack of the statistical significance in the study's findings could be attributed to the unequal and small sample sizes, as unequal and small sample sizes can increase the risk for type II errors to occur.
- Prior research assessing the effectiveness of a health-belief model-based intervention on nutrition-related outcomes in adult populations concluded that such interventions are effective in increasing nutrition-related knowledge⁷ and behaviors,⁹ unlike the current study.
- The current study found that the intervention, which incorporated the health belief model, resulted in a 34%, insignificant increase in nutrition-related knowledge, 8%, insignificant increase in nutrition-related health beliefs, 5%, insignificant increase in nutrition-related behaviors.

CONCLUSION

The findings of the current study support the need for further research using equal and larger sample sizes to evaluate the effectiveness of a health belief model theory-based intervention for improving general and sports nutrition-related knowledge, health beliefs, and behaviors in adults.

INTRODUCTION

- Nutrition is foundational for athletes to achieve optimal athletic performance and to promote proper recovery while reducing the risk of injury.^{1,2}
- Athletes have nutritional requirements which can differ from their non-athletic counterparts. While similar at baseline, variations can occur in macronutrient needs, caloric requirements, and electrolyte or micronutrient repletion.³
- Nutritional guidelines for athletes have been developed, however they have low adherence.^{4,5}
- Addressing the deficit of nutrition-related knowledge, health beliefs, and poor behaviors is necessary to reduce the risk of macro and micronutrient imbalances, inadequate oral intake, and poor-quality food choices, negatively impacting health status and performance.^{1,6}
- Past interventions utilizing the health belief model have effectively impacted nutrition-related knowledge, health beliefs, and behaviors in adults.^{7,8,9}
- There are no current studies which have assessed the effectiveness of a single intervention which incorporates nutrition-related knowledge, health beliefs, and behaviors regarding this topic.
- The aim of this study was to determine the effect of a health belief model theory-based intervention to measure changes in general and sports nutrition-related knowledge, health beliefs, and behaviors and to address the gap in existing literature of the adult athlete population.

RESULTS

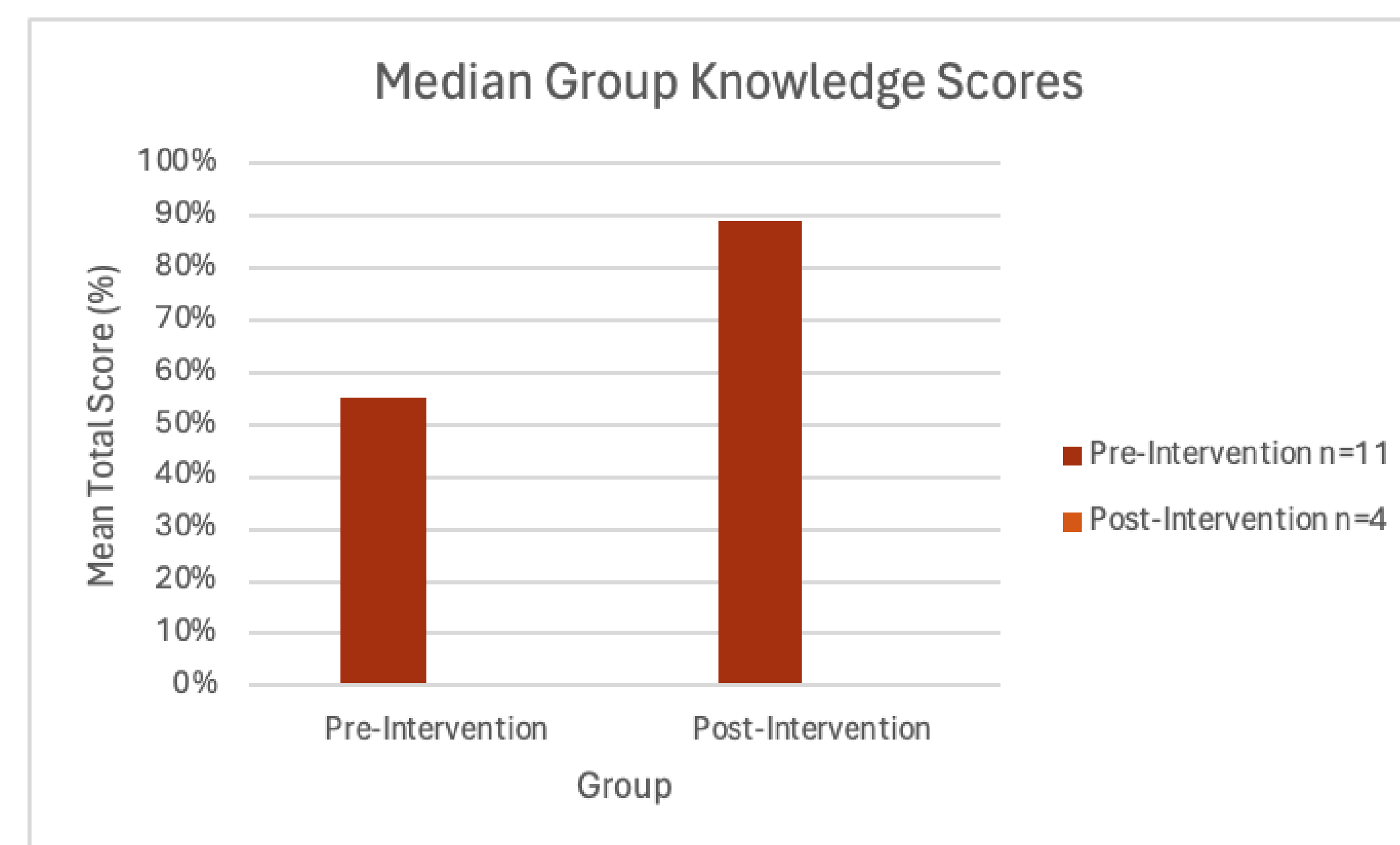


Figure 1. Changes in median Knowledge scores from the pre-and post-intervention *YMCA Intervention Tool*. The figure displays medians. Median group percentage scores are based on the average points earned by participants in the pre-intervention group (n = 11) and post-intervention group (n = 4) out of the total possible points for the Knowledge section (9). The changes in median group scores from the pre- and post-intervention knowledge assessment were not statistically significant ($p = 0.14$).

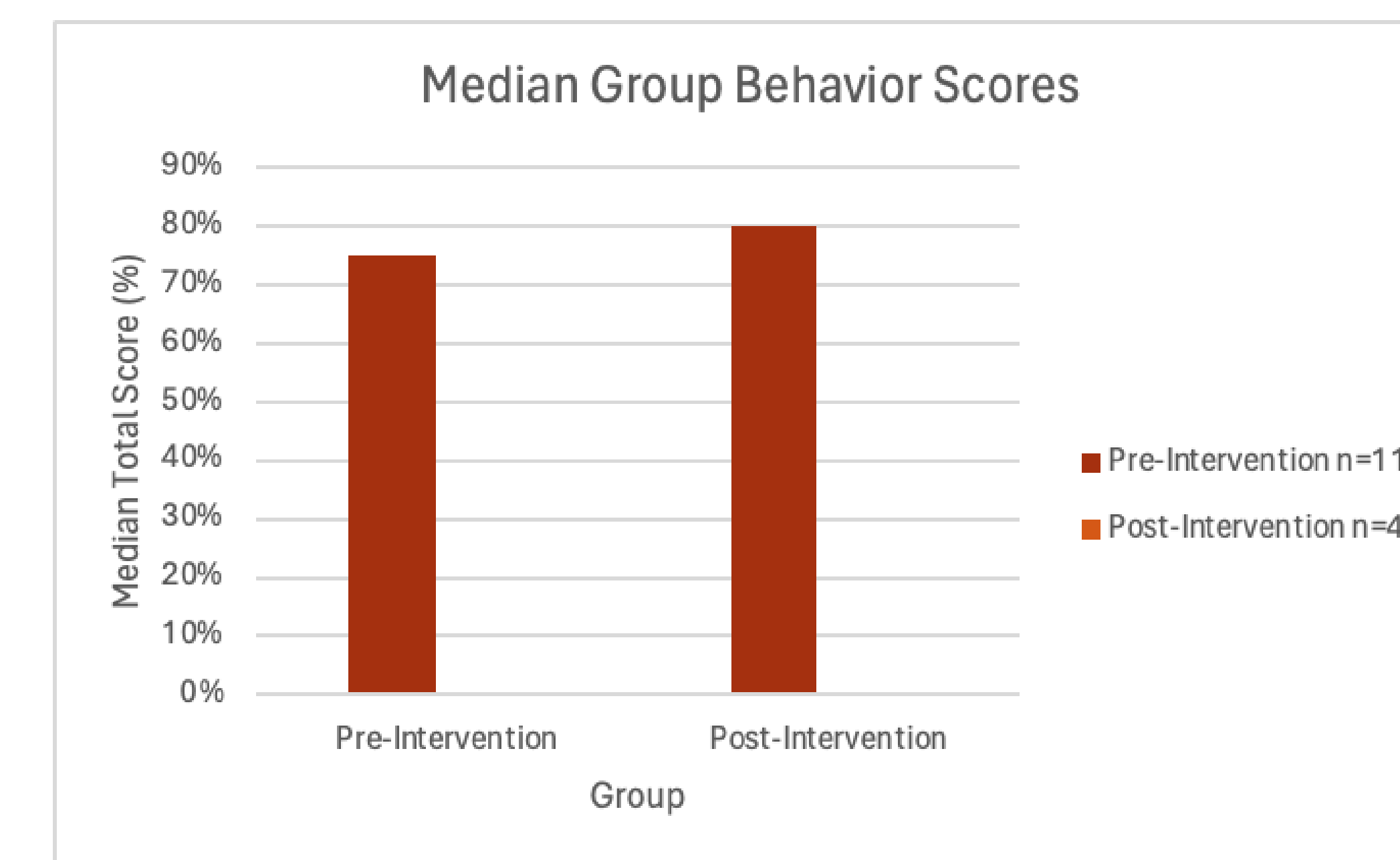


Figure 3. Changes in median Behavior scores from the pre-and post-intervention *YMCA Intervention Tool*. The figure displays medians. Median group percentage scores are based on the average points earned by participants in the pre-intervention group (n = 11) and post-intervention group (n = 4) out of the total possible points for the Behavior section (20). The changes in median group scores from the pre- and post-intervention knowledge assessment were not statistically significant ($p = 0.66$).

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