

Feasibility of a Grocery Store Tour for Parents and Their Adolescents: A Randomized Controlled Pilot Study

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ABSTRACT

Objective: To evaluate the feasibility of a grocery store tour for parents and their adolescents being led by adults or adolescent peers.

Design: Randomized controlled pilot study with surveys at baseline and post-program, and at 3- and 6-month follow-up.

Setting: Midwestern midsized grocery stores.

Participants: Sixty-one parents and their 71 11- to 14-year-old adolescents.

Intervention: Nutrition education during 1 90-minute grocery store tour.

Main Outcome Measures: Process observations and participants' tour perceptions provided fidelity outcomes. Questionnaires quantitatively assessed participants' knowledge, self-efficacy, and tour strategy use.

Analysis: Chi-square and McNemar tests were used to analyze categorical data, and Kruskal–Wallis, Wilcoxon signed-rank, and Mann–Whitney U tests were employed for continuous variables (significance at $P < .05$).

Results: Over 90% of tour tasks were rated as completed well for adult and peer leaders. Participants had positive tour perceptions but noted deficiencies in teen leaders' knowledge and leadership skills. Overall, parents and adolescents retained increased self-efficacy from pre-tour to post-tour intervals. Despite limited knowledge retention, parents reported they had increased (6.5 ± 4.19) healthful grocery shopping behaviors in the 6 months after the intervention.

Conclusions and Implications: Peers may feasibly lead grocery store tours but they may need additional resources and support to be highly effective.

Key Words: children, grocery shopping, grocery store tour, parents, peer education (*J Nutr Educ Behav.* 2017; ■:1-11.)

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INTRODUCTION

The average American spends roughly \$563 on food each month, with 59% of these purchases from groceries¹

and 42 min/wk spent on grocery shopping.² Grocery shopping behaviors are intertwined with many other decisions to help form individuals' dietary patterns. In the US, many adults

and adolescents fall short of meeting dietary recommendations, namely for intakes of fruits, vegetables, and whole grains.³ Low diet quality among adolescents is of particular concern because evidence suggested that dietary patterns track into adulthood.^{4,5} Less healthful choices in grocery stores leading to lower-quality dietary patterns among parents and adolescents may result in part from confusion regarding nutrition facts labels, because many find them difficult to use.⁶

Nutrition education within grocery stores may increase comprehension and use of nutrition labels and improve consumers' food purchasing practices. Providing dietetics counseling in the grocery store setting was also shown to encourage healthful dietary and knowledge changes among patients with obesity,⁷ but this 1-on-1 education approach

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requires considerable time. Facilitator-led grocery store (or supermarket) tours take small groups, rather than individuals, through a grocery store to teach strategies and skills that enable healthful food purchasing choices. Based on the practicality that grocery stores provide contextual learning environments and consumable foods, supermarket tours have flourished as a nutrition education medium. However, there continues to be a gap in the literature rigorously testing the effectiveness of grocery store tours. A recent systematic review⁸ identified 8 studies evaluating grocery store tours, the majority of which used non-randomized noncontrolled designs. As included in the systematic review, tours resulted in healthful purchasing behaviors and positive knowledge changes,⁹⁻¹¹ but there was significant heterogeneity across study populations and focal behaviors in previous tours.

There is a paucity of data investigating whether peer influences in the form of adolescent teen leaders (TLs) can have an impact on the efficacy of grocery store tours. Social Cognitive Theory (SCT) provides a model to predict behaviors based on the interaction of individuals and their environment as they learn.^{12,13} According to SCT, peers are instrumental in developing social outcome expectations and stimulating observational learning.¹³ Programs that included peer leaders were successful in tobacco-use prevention and sex education.¹⁴⁻¹⁶ Nelson and Nickols-Richardson¹⁷ conducted a systematic review of nutrition education programs that used peer leaders and concluded that mediators of dietary behavior change were positively influenced in some programs. In addition, studies demonstrated that peers influenced social norms,¹⁸ snack preferences,¹⁹ and quantity of food consumed among high school- and elementary school-aged children.²⁰⁻²² This previous work provided a foundation for which the role of TLs in a grocery store tour is worth investigating.

Study Objectives

The purpose of this pilot study was to evaluate the feasibility of a grocery store tour led by adolescents (ie, teens or peer-led). Both parents and their adolescents were included in the

intervention. It was hypothesized that (1) knowledge and self-efficacy would increase in participants after attending the tour; and (2) adolescent participants would have greater increases in knowledge and self-efficacy after a peer-led tour, compared with an adult-led tour.

METHODS

Tour Development, Pretesting, and Modification

Based on SCT and the peer-education model, a grocery store tour was developed that focused on encouraging healthy dietary patterns that could be taught by adolescent peers. Four experts in human nutrition designed the tour based on the 2010 Dietary Guidelines for Americans, a literature review of content in previous, similar programs,^{11,23-25} and related Extension materials.²⁶⁻²⁹ The 2.5-hour tour was designed to meet 4 broad objectives, including food comparisons by ingredients and nutrition facts, food locations of the major food groups, food navigations among choices within food groups, and food cost savings among healthy foods.³⁰ The walking tour used a structured group discussion format with hands-on activities and handouts.

Based on similar previously published literature,^{31,32} experts were recruited to evaluate the content validity of the tour lesson by assessing the overall relevance as well as the ability of activities to achieve the learning objectives. Eight content experts rated the tour content as somewhat relevant with some to high ability to achieve objectives.^{30,33} In addition, the tour was pretested with 9 parents and 15 adolescents (average age, 11.6 years) across 3 tours in 2 different grocery stores and 1 supermarket. On average, 124 minutes were required when the lesson was taught by an adult educator. Three post-tour focus groups indicated that all parents liked the tour, particularly the hands-on components, and some perceived that future grocery shopping trips with their adolescents might be easier and more enjoyable. Post-tour questionnaires evaluating the self-efficacy of participants to perform 15 behaviors encouraged in the tour indicated that parents felt confident they could use 14 of the behaviors taught.

Overall, the tour was a positive experience. Constructive comments from parents and adolescents were used to further improve lesson materials, including clarity of text and format and a reduction in the number of handouts as well as better instructions for activities. A mid-tour break with a healthy snack was added and the total length was reduced to 90 minutes. Participants requested notices regarding appropriate clothing to wear on the tour, owing to temperature fluctuations in various store sections.

Recruitment, Screening, and Enrollment

For the current pilot study, families were recruited between February and August, 2015, from the University of Illinois at Urbana-Champaign campus and Urbana and Champaign, IL, communities using word of mouth, e-mail messages, brief presentations to local groups, and fliers. [Figure 1](#) displays enrollment, randomization, and attrition data. Eligibility for adults included being the parent or guardian of a child in the sixth or seventh grade with transportation and, for adolescents, being aged 11–14 years. Parents and adolescents attended a study information session, after which parents provided written informed consent, and adolescents written informed assent. The Institutional Review Board for the Protection of Human Subjects at the University of Illinois at Urbana-Champaign approved the study protocol. Families received a chance to win 1 of 3 \$25 grocery store gift cards and also received a \$10 grocery store gift card at the 3- and 6-month follow-up intervals if they returned questionnaires.

Study Design

This was a 6-month randomized, controlled pilot study. Sixty-one families (61 parents and 71 adolescents) volunteered to participate. Families were randomly assigned to 1 of 3 groups: (1) an adult leader (AL) tour group (n = 21 families), (2) a TL tour group (n = 20 families), or (3) a control (CON) group (n = 20 families). Participants in the AL and TL groups were assigned a date when 2–5 families could attend a tour. Parents confirmed attendance and were sent

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