

Peer-Led Culinary Skills Intervention for Adolescents: Pilot Study of the Impact on Knowledge, Attitude, and Self-efficacy

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ABSTRACT

Objective: To assess the impact and feasibility of a culinary skills intervention for adolescents led by peer educators compared with adult educators.

Methods: Adolescents (aged 11–14 years) were randomized to peer educator ($n = 22$) or adult educator ($n = 20$) groups and attended 2 2.5-hour culinary skills lessons addressing knife skills, cooking methods, and recipes. Knowledge, attitude, and self-efficacy measurements were completed before and immediately after the intervention and at 3 and 6 months after the intervention. Fidelity checklists assessed the feasibility of program delivery. Differences within and between groups over time were assessed using ANOVA.

Results: Adolescents ($n = 42$) increased knowledge (3.7 ± 2.6 points [mean \pm SD]; $P < .001$), attitude (0.8 ± 4.5 ; $P < .05$), and self-efficacy of cooking (2.6 ± 5.3 ; $P < .001$) and cooking method (1.7 ± 4.6 ; $P < .01$) after intervention. Peer and adult educators were equally able to deliver the intervention.

Conclusions and Implications: Peers and adults can feasibly lead a culinary skills program for adolescents that increases knowledge. To affect attitude and self-efficacy, additional training of peer educators may be needed.

Key Words: adolescents, children, cooking, peer education, self-efficacy (*J Nutr Educ Behav.* 2017; ■:1-6.)

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INTRODUCTION

Culinary skills education within public schools has decreased in recent decades, leaving a noticeable gap in developing the life skill of cooking.¹⁻³ To fill this deficit, food and nutrition experts have called for a resurgence in culinary skills nutrition education programs to improve basic knife skills, cooking methods, and use of common kitchen tools, utensils, and

equipment, as well as recipe use, conversion, and kitchen math. These culinary skills may improve dietary quality and prevent early development of chronic diseases such as obesity in adolescence.⁴⁻⁶ Numerous programs about culinary skills have been conducted, but few have reported outcomes after the intervention.⁷⁻²⁵ Change in culinary skills knowledge is the most commonly reported measure from culinary-based education pro-

grams.^{7,10,11,13,16,24} Increases in knowledge and cooking skills self-efficacy, among other factors, have been connected to the foods that adolescents select.²⁶

Peer education has been suggested as a delivery mode for culinary skills education, because a variety of other programs have used peer education as a strategy to deliver community-based nutrition education.^{3,27-29} However, the feasibility and acceptability of culinary skills nutrition education by means of peer leaders have not been formally evaluated in adolescent populations.

The purpose of this study was to test the impact and feasibility of 2 2.5-hour culinary skills lessons (ie, intervention) for adolescents on knowledge, attitude, and self-efficacy regarding culinary skills, a critical area within nutrition education. It was hypothesized that peer educators would lead lessons as well as adult educators, with similar results for participant outcome measures (knowledge, attitude, and self-efficacy) and for process observations.

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METHODS

Intervention Pretesting and Modification

This culinary skills intervention consisted of 2 sequential lessons that were developed using Social Cognitive Theory³⁰ and Experiential Learning Theory.³¹ These theories were selected based on the supposition that individuals learn by observing others (eg, peers, adults) via social and environmental contexts³⁰ and by actively engaging in skill development³¹ to gain mastery and self-efficacy for the skill.³⁰ Lessons were originally designed to teach the topics of knife skills, cooking methods, and following recipes related to fruits and vegetables. Each lesson included pretest measurements, instruction, hands-on practice, review, time for questions, and post-test measurements. The instructional portion of each lesson included activity-based discussions with educational handouts and leader demonstrations. Lesson 1 (Culinary Skills) focused on knife skills including safety, selection, and use, as well as cooking methods (tools, utensils, and equipment). Lesson 2 (Culinary Skills in Action) focused on hands-on knife skills, and following recipes and kitchen math skills, with review activities to reinforce concepts covered in both lessons. This intervention, including measurements, was evaluated for content validity by 8 experts and tested for fidelity with 7 girls led by 1 adult, with focus group follow-up for pretesting.

Lessons were minimally modified based on pretesting.³² Specific activities were streamlined to reduce preparation time and maximize experiential learning; other activities were modified to enhance participant safety and provide individualized feedback. Intervention objectives were retained and included applying appropriate cutting and cooking methods for fruits and vegetables, demonstrating safety in the kitchen, and preparing recipes with fruits and vegetables.

Self-efficacy was the primary construct of Social Cognitive Theory reinforced by lesson content and activities.³⁰ All aspects of Experiential Learning Theory were touched upon, primarily concrete experience and active experimentation, as small group

recipe preparation reinforced active experimentation, whereas group review, discussions, and games applied abstract conceptualization.³¹

Setting

The current intervention took place in a university instructional foods laboratory classroom with tables for lecture and demonstrations as well as several small kitchen units, each of which included an oven with a range, sink, measuring cups, mixing bowls, skillets, and other kitchen utensils. The classroom setting allowed participants to work in small groups in the kitchen units with space to view demonstrations and participate in discussions and reviews.

Educators

Peer educators and adult educators were recruited through electronic mailings describing an opportunity to lead culinary skills lessons for 11- to 14-year-olds, covering the topics of basic knife skills, cooking methods, and following recipes. Eligible peer educators aged 14–15 years and adult educators aged >25 years expressed interest and were screened for availability. Prospective educators were excluded if they had received professional culinary training, because the intervention was designed for a lay community leader. Prospective educators were interviewed and selected based on strong interpersonal, communication, and leadership skills as well as composure, as desirable personal attributes of role models to be emulated by adolescents. Educators successfully completed a background check and attended a 3-hour training before leading the intervention. One researcher trained all educators. Training addressed all technical components of each lesson by following the detailed lessons step-by-step and by addressing questions, kitchen familiarization, and group discussion of presentation methods including interactive demonstrations, pausing to ask for questions and addressing participant safety. Emphasis was placed on technical components and on review of the lesson activities to reinforce intervention objectives with the educators. Understanding and proficiency were demonstrated

by educators by answering questions accurately and using proper techniques during the training, as evaluated by the trainer. Educators were compensated with a gift certificate of \$50 for completing training and \$45 per lesson led (for a total of \$140).

Participants and Recruitment

From April to July, 2015, a convenience sample of adolescents entering the sixth and seventh grades (or aged 11–14 years) who were interested in learning about culinary skills were recruited from the Urbana-Champaign, IL area. Each interested adolescent and his or her parent or guardian attended an informational meeting to learn about the intervention and completed informed written consent and assent forms, respectively. Exclusion criteria included adolescents aged <11 or >14 years and parent's or guardian's inability to transport his or her child to the intervention site. Participants were assigned to the peer educator group (PEG) or adult educator group (AEG), based on their schedule preferences and availability; times were randomized to include morning, afternoon, and evening session options. Participants received a \$5 gift certificate for each lesson that was completed (\$10 for the intervention). Three- and 6-month postintervention data were collected by mail or in person at the parent's or guardian's preference. No additional compensation was provided for these measures. The study protocol (No. 15443) was approved by the Institutional Review Board for the Protection of Human Subjects of the University of Illinois at Urbana-Champaign.

Measurements

Adolescents completed measurements at 4 time points: before and immediately after the intervention and 3 and 6 months after the intervention. Measurements included questions pertaining to culinary skills knowledge, attitude toward cooking, cooking self-efficacy, and cooking methods self-efficacy. Instruments were internally reliable (Cronbach α = .72 for knowledge, attitude = .71, cooking self-efficacy = .84, and cooking methods self-efficacy = .81). The researchers

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