

Lessons Learned: Implementing the Shaping Healthy Choices Program With Teenagers as Teachers

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Abstract

One approach that has been successful at improving youth health outcomes is the Shaping Healthy Choices Program, which features garden- and cooking-demonstration-based nutrition education curricula. The objective of this study was to assess the feasibility of implementing Shaping Healthy Choices Program curricula in 4-H using a teenagers as cross-age teachers approach. A teenagers as cross-age teachers model was employed to educate younger youth using the evidence-based curricula in 2 projects, each lasting 6 months over a 2-year period. Teenage teachers completed an initial 2-day training and reflection-on-action discussions following each educational session. Fidelity observations were collected to assess how well the curricula were delivered by teenage teachers. With a goal of 80%, overall fidelity was low (45%) and teenage teachers were able to deliver only the procedure component of the lessons with adequate average fidelity (84.6%). Poor participant attendance hindered presentation of additional data. Findings from this study suggest a need for more extensive and specific training for teenage teachers to implement the Shaping Healthy Choices Program.

Key words: cross-age teaching, teenagers as teachers, nutrition education, garden-based education



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Introduction

Childhood and adolescent overweight and obesity is an epidemic in the United States with prevalence continuously increasing over the last 35 years (Fryar et al., 2018). As of 2016, 35.1% of youth aged 2 to 19 years were classified as overweight or obese, with an overweight rate of 16.6% and an obesity rate of 18.5% (Fryar et al., 2018). For youth, obesity tends to increase with age, as adolescents aged 12 to 19 years have the highest rates (Fryar et al., 2018). These rates are concerning because childhood obesity is associated with increased risk for adulthood chronic diseases (Ajala et al., 2017; Faienza et al., 2016; Kim et al., 2017; Singh et al., 2008). One possible explanation for the elevated prevalence of obesity is that youth typically have poor overall diet quality (Banfield et al., 2016; Thomson et al., 2019). This is further compounded by youth tending to not meet recommendations for fruit and vegetable consumption (Banfield et al., 2016; Thomson et al., 2019). With this, one potential approach to reducing youth obesity is increasing fruit and vegetable consumption. It has been suggested that integrated comprehensive nutrition programs are most effective for improving youth health (Hayes et al., 2018).

One project aligned with youth obesity prevention tactics is the Shaping Healthy Choices Program (SHCP), which is a comprehensive, multi-component program aimed at improving youth nutrition and health outcomes (Scherr et al., 2014). The SHCP features garden-enhanced nutrition curricula (Brian et al., 2015; Linnell et al., 2015) that were designed using social cognitive theory (Bandura, 1986) and constructivism (Fosnot, 2013) as theoretical frameworks. The curricula feature lessons and cooking demonstrations that follow the 5-Step Experiential Learning Cycle (Kolb, 2015; *Training Technologies for Experiential Learning Activities [Training Technologies]*, 1998) to educate youth about foods grown around the world, cardiovascular health, general nutrition, and consumerism (Brian et al., 2015; Linnell et al., 2015). In addition to nutrition education, the SHCP promotes youth well-being through school-wide efforts to increase fruit and vegetable consumption and establish school-site wellness committees (Scherr et al., 2014). The SHCP has been evaluated and was found to significantly improve youth body mass index percentiles; nutrition knowledge; physical activity behaviors; and vegetable availability, identification, and consumption in upper elementary-aged youth (Fetter et al., 2018; Scherr et al., 2017; Taylor et al., 2017). These results were observed when the curricula were implemented with high fidelity (Bergman et al., 2018). Fidelity has been defined as “the extent to which the critical components of an intended program are present when that program is enacted” (Century et al., 2010). Assessment of fidelity can be carried out utilizing a variety of methods and entails evaluation of both adherence to the intended program and competence of

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the facilitators (Breitenstein et al., 2010; Harn et al., 2013). It is important to assess fidelity in different interventions and programs to provide context for participant outcomes (Breitenstein et al., 2010; Century et al., 2010; Durlak & DuPre, 2008; Gearing et al., 2011; Mowbray et al., 2003).

The SHCP has shown success at improving youth health status. However, the program curricula have only been implemented using one method with trained adult educators delivering nutrition lessons in traditional classroom settings. To expand its reach, the SHCP should thus be implemented more broadly in out-of-school settings, such as within the 4-H Youth Development Program (4-H). The 4-H program is well-established nationwide and features enrichment programs and opportunities aimed at supporting child and adolescent development (National 4-H Council). The 4-H program frequently delivers enrichment in a variety of subjects utilizing teenagers as cross-age teachers for younger youth. Cross-age teaching allows for teenagers to become specially trained to deliver a specific curriculum to youth typically 2 or 3 years younger than themselves (Murdock et al., 2003). It has been found that teenagers can be effective teachers when provided adequate resources and support (Lee & Murdock, 2001). To ensure the success of the teenagers-as-teachers model, Lee and Murdock (2001) suggested that programs be designed including 10 essential elements:

- dedicated adults who support teenagers,
- active teenager recruitment,
- strong curriculum,
- initial teenager training,
- ongoing training and support,
- attention to details,
- recognition and reward,
- team building,
- setting teenagers up for success, and
- feedback and evaluation.

Cross-age teaching is not only beneficial for younger youth, but also provides educational, developmental, and emotional benefits for teenage teachers (Murdock et al., 2003; Shanahan, 2015; Weybright et al., 2016; Worker et al., 2018). In nutrition education programs specifically, use of teenage teachers can be just as effective as—or in some regards even more effective than—adult educators (Smith, 2011). Therefore, the objective of this study was to assess the

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feasibility of implementing the SHCP curricula in 4-H using a teenagers as cross-age teachers approach.

Methods

This project was conducted twice over 2 years starting in October 2016 and ending June 2018. Teenagers aged 14 to 18 years and younger youth ages 9 to 13 years were recruited from existing 4-H clubs, local schools, and other community-based programs in a rural Northern California community. For the 1st year, teenagers were trained in an initial 2-day, 10-hour training to become cross-age teachers. The 1st day of training included team building activities to help teenagers become acquainted with fellow teenage teachers; an introduction to youth developmental stages and learning styles; an overview of the SHCP curricula and intended pedagogical approach; and a brief demonstration of one lesson. The 2nd day of training included a more in-depth demonstration of how to facilitate inquiry-based and experiential lessons using another lesson from the SHCP curricula. This type of modeling was provided only at the initial training so that fidelity to the curricula given this amount of training could be assessed. The training in the 2nd year was very similar, but also included returning teenage teachers modeling curricula lessons. The 1st implementation year was utilized for a feasibility study to determine whether teenagers could be effective facilitators for an adapted version of the SHCP. The 2nd implementation year was intended to determine whether the program could be sustained within the participating 4-H club.

Educational sessions with younger youth were held about twice per month for 6 months and met on Sunday afternoons for 90 minutes, as chosen by participants and their parents. Educational sessions were held at a local community center and nearby community garden. These spaces were chosen in an effort to connect youth with their community and increase civic engagement, which is purported to have beneficial effects on adolescent development (Smetana et al., 2006). The SHCP garden-enhanced nutrition curriculum *Discovering Healthy Choices* (Linnell et al., 2015) was adapted for implementation in an out-of-school setting. The accompanying cooking demonstration-based curriculum *Cooking Up Healthy Choices* (Brian et al., 2015) was unmodified for this implementation. Teenage teachers volunteered to either lead or assist with facilitation prior to each educational session. Remaining teenage teachers not facilitating the lesson participated in the lesson activities as their own group separate from younger youth groups. Following lesson activities, 15 minutes were allotted for teenage teachers and project staff to complete both written and oral reflection-on-action discussions

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using a plus/delta format, as previously utilized by Linnell et al. (2016). For these discussions, teenage teachers were openly prompted to describe features of the implementation that went well and should be continued for subsequent lessons (plus), as well as aspects of the facilitation needing improvement or modification for future lessons (delta). These discussions included addressing facilitator practices, implementation of lesson components, and participant engagement. This time was also allocated for providing teenage teachers a brief overview of the next educational session and assigning lead and co-facilitators.

The intent of this study was to assess the feasibility of program implementation through collection of both quantitative and qualitative data for teenagers and younger youth during the 1st year of implementation to assess the impacts of being an educator and being educated by a teenage teacher, respectively. Participant data collected and assessment tools utilized are detailed in Table 1. Nutrition knowledge was collected using age-appropriate, validated questionnaires both for teenagers (Ruiz et al., 2017) and younger youth (Morris & Zidenberg-Cherr, 2002). Self-efficacy for teaching nutrition was measured using a questionnaire originally adapted by Linnell et al. (2016), which was updated to be specific to the SHCP and use the retrospective post-then-pre method (Slattery, 2017). A measure of civic responsibility was also collected from teenagers using the retrospective post-then-pre method and was measured using a reliable questionnaire developed as part of the 4-H Youth Development Program Healthy Living Measures (Furco et al., 1998). Data on vegetable identification and preferences in younger youth were collected using an approach adapted from previous use (Linnell et al., 2016; Scherr et al., 2014) to include taste-testing of six vegetables and open-ended follow-up qualitative prompting in a one-on-one interview style. Dietary intake in teenagers was measured using an online automated multiple-pass 24-hour (ASA24) recall system. Participant demographics were completed by participants' parents, following a method similar to Scherr et al. (2014).

In addition to data collected from participants, previously developed structured observation sheets (Linnell et al., 2016) were utilized during the 1st year to collect observations of lesson implementation (see Appendix). Two trained observers—a graduate and undergraduate student—worked together and used the structured observation sheets at each educational session to measure program fidelity on a 0- to 2-point scale: 0 (*not implemented at all*) and 2 (*implemented completely as intended*) for each lesson and lesson component. Fidelity for each lesson was calculated by totaling the implementation points earned for the observed lesson and then converting the score to a percentage. Fidelity for each lesson component was calculated

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by averaging the scores received for that component across all observed lessons and then converting the average score into a percentage.

Table 1. Evaluation Tools and Metrics Collected from Participants During the 1st Implementation Year

Group	Metric	Number collected pre	Number collected post	Tool source(s)
Teenage teachers	Nutrition knowledge	3	3	Jones et al. (2015); Ruiz et al. (2017)
	Self-efficacy for teaching nutrition	3	3	Linnell et al. (2016); Slattery (2017)
	Civic responsibility	2	2	Furco et al. (1998)
	Dietary intake	1	0	ASA24 ^a
	Demographics	3	--	Scherr et al. (2014)
Younger youth	Nutrition knowledge	7	7	Morris and Zidenberg-Cherr (2002)
	Vegetable identification and preferences	6	4	Linnell et al. (2016); Scherr et al. (2014)
	Demographics	8	--	Scherr et al. (2014)

^aAutomated self-administered 24-hour recall system

The lesson components included opening questions; procedure; sharing, processing, generalizing; follow-up prompting; and concept discovery or introduction. *Opening questions* prime the participants for the *procedure*, wherein participants collaborate in small groups to complete structured learning activities (*Training Technologies*, 1998). The *sharing, processing, and generalizing* steps then allow participants to reflect on their experiences and analyze real-world application with the assistance of *follow-up prompting*. Lastly, with *concept discovery or introduction*, the facilitator ensures that key learning objectives have been met. Observers provided commentary to help provide context for lesson component fidelity score. Observations were collected only when there was enough time to complete the lesson as described in curriculum. Teenage teachers were made aware at the beginning of the study that fidelity observations would be collected throughout the project. However, due to the potential for direct observation to alter implementation fidelity (Breitenstein et al., 2010), specific fidelity scores

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were not shared with teenage teachers and observations were taken discreetly. Without disclosing specific scores, to limit the teenage teachers from feeling tested, fidelity to the lesson components was included by project staff in the reflection-on-action discussions mentioned previously. Along with project staff encouraging continuation of practices that resulted in adequate lesson component fidelity, suggestions for improving facilitation of lesson components implemented with inadequate fidelity were also included in discussion. Fidelity observations were not collected for cooking demonstrations due to teenagers' lack of proper food safety and cooking skills which required adult intervention. This adult intervention thus invalidated any fidelity observations that would have been collected on the teenage teachers' ability to facilitate the cooking demonstrations.

All youth had to either already be enrolled in 4-H or enroll in 4-H to take part in the study. All procedures for this study were approved by the University of California, Davis Institutional Review Board.

Program

The model utilized in this study was developed using the 10 essential elements for successful teenagers-as-teachers programs identified by Lee and Murdock (2001). Table 2 outlines each of the 10 essential elements and indicates how this project met each one. A Cooperative Extension (CE) academic (titled advisor in California) who oversaw the project and facilitated the 1st day of teenager training provided adult support. Additionally, one CE staff member organized the logistics of the project and was present at each day of training and every educational session for both years. For the 1st year, a university researcher provided the 2nd day of teenager training and attended all educational sessions. The researcher also led the reflection-on-action discussions at the end of each educational session for the 1st year and trained the CE staff member to lead reflection discussions during the 2nd year. These reflection-on-action discussions provided ongoing support and additional team building for teenage teachers. The retrospective approach for self-efficacy and civic responsibility measurements also allowed teenagers an opportunity to reflect on their experience and provided personal evaluation.

Table 2. Project Alignment With 10 Essential Elements for Successful Teenagers-as-Teachers Programs (Lee & Murdock, 2001)

Essential element	Evidence in project
1. Dedicated adults	<ul style="list-style-type: none"> • Cooperative Extension academic • Cooperative Extension staff member • University researcher
2. Active recruitment	<ul style="list-style-type: none"> • Teenagers recruited from local high schools, other 4-H projects, and community organizations
3. Strong curriculum	<ul style="list-style-type: none"> • <i>Discovering Healthy Choices</i> (Linnell et al., 2015) • <i>Cooking Up Healthy Choices</i> (Brian et al., 2015)
4. Initial training	<ul style="list-style-type: none"> • 2-day, 10-hour training • Team building, inquiry-based delivery of lessons, and overview of curricula
5. Ongoing training and support	<ul style="list-style-type: none"> • Reflection-on-action sessions using plus/delta format (Linnell et al., 2016)
6. Attention to details	<ul style="list-style-type: none"> • Cooperative Extension staff member organized all project logistics • Adult intervention in cooking demonstrations • Water provided • Local and easily accessible location • Participants and parents chose meeting day and time • Dates were specifically picked to avoid scheduling conflicts with other 4-H activities
7. Recognition and reward	<ul style="list-style-type: none"> • Reusable water bottle, commemorative 4-H pin, and certificate of completion • Paid teenager annual 4-H registration • Letters of recommendation upon request
8. Team building	<ul style="list-style-type: none"> • Team building activities in the initial teenager training • Teenagers supported one another by acting as co-facilitators for lessons • Provided written and verbal feedback through reflection sessions
9. Setting teenagers up for success	<ul style="list-style-type: none"> • Teenagers praised upon completion of lessons • Reflection sessions always ended on something that went well • Time allocated to setup lesson and familiarize teenage teachers with lesson materials

Table 2. (continued)

Essential element	Evidence in project
10. Feedback and evaluation	<ul style="list-style-type: none"> • Feedback from the university researcher, Cooperative Extension staff member, and each other during the reflection sessions • Retrospective post-then-pre-test self-efficacy and civic engagement questionnaires

Teenagers were actively recruited from local organizations and completed an initial training that included development of skills and an overview of the specific curricula to be taught. The curricula used in this project were very strong and included *Discovering Healthy Choices* (Linnell et al., 2015) and *Cooking Up Healthy Choices* (Brian et al., 2015), which are research-tested and evidence-based curricula that feature several interactive lessons. The CE staff member provided attention to detail by organizing all project logistics and maintaining consistent communication with all youth and parents. Precautions were taken to ensure the safety of all youth, including adult intervention in cooking demonstrations and supervision during educational sessions. The location was within the youths' community and easily accessible. Participants and parents chose the meeting time, and dates were specifically picked to avoid scheduling conflicts with other 4-H activities. To recognize and reward participants, all youth received a reusable water bottle, commemorative 4-H pin, and certificate of completion for participating in the project. For teenage teachers, the annual 4-H registration fee (\$40) was also paid and the CE staff member offered to write letters of recommendation for the teenage teachers upon request.

Results

All data shown are from the 1st implementation year. Although low participation was expected given that new 4-H projects in the implementation area traditionally have taken a few years to gain popularity, the sample sizes were lower than anticipated resulting in underpowered data analyses. Five teenagers (aged 14 to 15 years) were recruited and trained as cross-age teachers. One teenager dropped out of the project immediately following the initial training and another did not consent for data collection, leaving three teenage teachers included in data collection. Eight younger youth (aged 9 to 13 years) were recruited and consented to data collection. Additional recruitment measures beyond those previously mentioned were not taken as this method was standard procedure for the partner 4-H group and part of feasibility testing. As shown in Table 3, participant ages were evenly distributed, and most participants were girls.

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Participation and attendance were inconsistent for younger youth, with only five regularly attending educational sessions.

Table 3. Characteristics of 1st-Year Participants ($n = 11$)

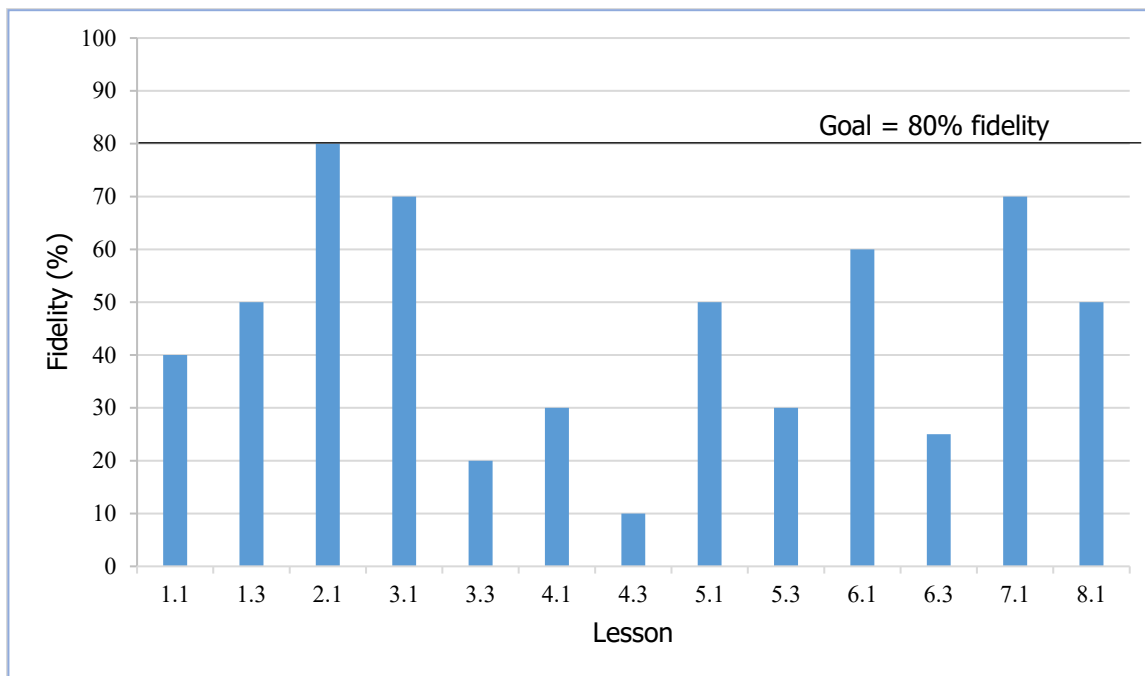
Characteristic		Participants <i>n</i> (%)
Age (years)	9	2 (18.2)
	10	1 (9.1)
	11	3 (27.3)
	13	2 (18.2)
	14	1 (9.1)
	15	2 (18.2)
Sex	Girls	8 (72.7)
	Boys	3 (27.3)
Ethnicity/race	African American/Black	2 (18.2)
	Caucasian/White	6 (54.5)
	Multiethnic	3 (27.3)
Household income	\$59,999 or less	4 (36.4)
	\$60,000 - \$99,999	3 (27.3)
	\$100,000 or more	4 (36.4)
Primary caregiver's education	Vocational/technical training or some college	4 (36.4)
	Associate degree	5 (45.5)
	Bachelor's degree	1 (9.1)
	Postgraduate degree	1 (9.1)

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As previously mentioned, data were not collected for the 2nd implementation year, as the primary focus for that year was on whether the program could continue without additional support. However, all participating teenage teachers from the 1st year returned in addition to two new teenage teachers, one of whom was a younger youth from the 1st year. Participation and attendance were again inconsistent for younger youth during the 2nd implementation year, with only two of five consented youth regularly attending educational sessions. The other three younger youth during this phase joined half-way through the program implementation and did not provide demographic information.

Although a plethora of assessment data were collected, most could not be analyzed due to insufficient sample sizes and inconsistent attendance. However, positive youth outcomes resulting from participation in the SHCP have previously been observed with a program fidelity threshold of 80% (Bergman et al., 2018). For this project, the overall average program fidelity was 45%. Figure 1 shows fidelity for each lesson. Only Lesson 2.1 met the 80% fidelity goal, and it should be noted that this lesson was the lesson demonstrated in the in-depth 2nd-day facilitation training during the initial training. Lessons 3.1 and 7.1 were the next highest but reached only 70% fidelity to the curriculum. All other lessons were facilitated with 60% or lower fidelity.

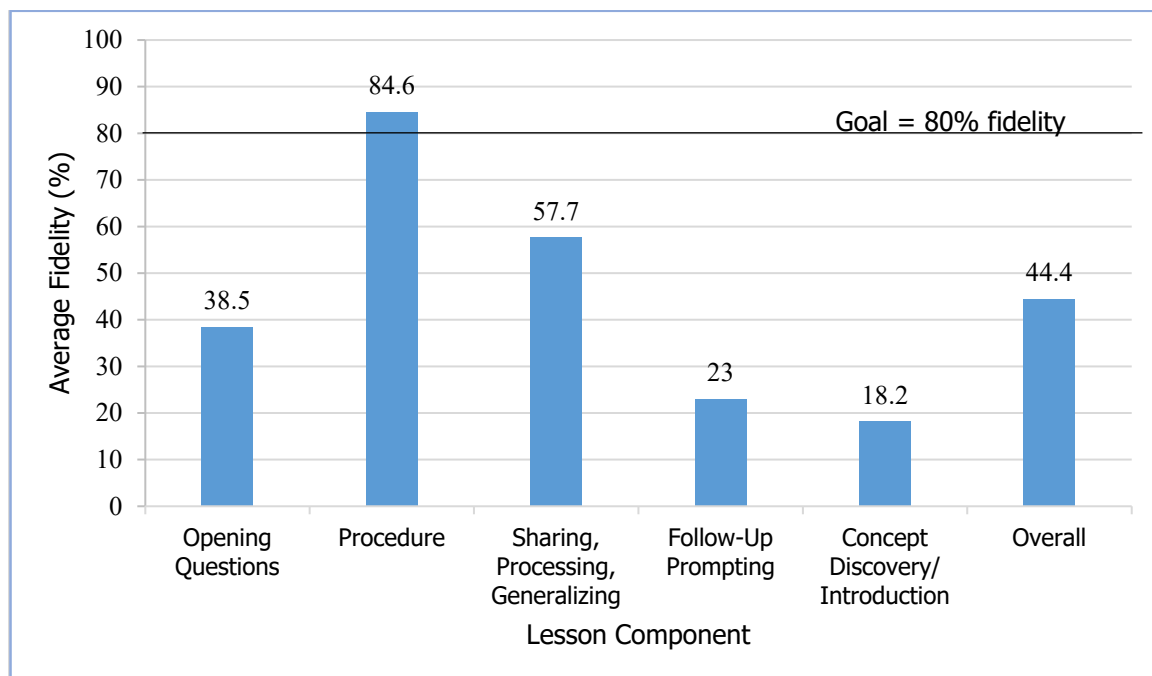
Figure 1. Fidelity to the *Discovering Healthy Choices* (Linnell et al., 2015) Curriculum by Lesson in the 1st Year



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Regarding fidelity for each lesson component (Figure 2), procedure was the only component implemented at or above the 80% fidelity goal (84.6% average fidelity). Commentary for this component indicated that teenage teachers dedicated ample time for the procedure and followed the prescribed steps in the curriculum exactly. The time dedicated to the procedure deducted time from other components, and the low fidelity scores for the other components—particularly follow-up prompting and concept discovery or introduction—was attributed to less time devoted to those components.

Figure 2. Average Fidelity to the *Discovering Healthy Choices* (Linnell et al., 2015) Curriculum by Lesson Component in the 1st Year



Discussion

The SHCP is traditionally implemented as a school-based intervention, but a goal at the time of its development was also for it to be implemented within 4-H. This project served as a feasibility study to determine whether the SHCP could be adapted and effectively implemented within 4-H with teenagers taking the role of cross-age teachers for younger youth. 4-H has a history of being predominantly Caucasian and has a goal to engage more diverse youth, which was a relative success with this project during the 1st year. Additionally, teenage teachers enjoyed participating in this project, as evidenced by all returning for the 2nd implementation year, but

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lack of younger youth participation and attendance considerably affected the potential of this project and the results that could be presented. There were challenges with recruitment and retention due to youth participation in additional 4-H clubs and projects and a variety of other activities that took priority, so the sample size of this study was quite small. Because this limitation prevented collection of meaningful data on participant outcomes as well as analyses that could be completed, it limits generalizability of the results. Perhaps a new 4-H project of this nature would be better-suited to participants with fewer outside commitments and those new to 4-H. Additionally, the time and day, even though selected by parents and youth, seemed to limit regular attendance. Other 4-H projects involving nutrition that have been successful were implemented through existing after-school programs at elementary schools (Bolshakova, Gieng, & Sidhu, 2018; Bolshakova, Gieng, Sidhu, et al., 2018; Smith, 2011). This allowed for the location to be convenient for participants and the timing to be advantageous to youth and parents.

Teenage teachers were able to deliver Lesson 2.1 with adequate fidelity (80%), however this was the lesson that was modeled for teenage teachers during the initial training, in which in-depth facilitation tips were also provided. Although overall fidelity was low, teenage teachers were able to effectively facilitate the procedure phase of the lessons with relatively high average fidelity (84.6%). This may be because the procedure portion includes step-by-step instructions for facilitation. Conversely, teenage teachers had the poorest fidelity for the follow-up prompting (23%) and the concept discovery or introduction (18.2%) phases. These two steps are the most challenging to facilitate, but also are important steps in experiential pedagogy to ensure that concepts are learned (*Training Technologies*, 1998).

Adequate fidelity is just one of the factors that can affect outcomes, with effective implementation generally being associated with better outcomes (Bergman et al., 2018; Durlak & DuPre, 2008). Fidelity does not have to be 100%, so there is room for adaptation (Century et al., 2010; Durlak & DuPre, 2008; Harn et al., 2013), but should be at least 80% for the SHCP given the curricula structure and previous findings (Bergman et al., 2018). The low fidelity observed in this project suggests that teenage teachers may not have been fully prepared to act as facilitators for all lessons and that additional facilitation training may improve future lesson delivery. Other studies of this nature have provided varying lengths of time allocated for the initial training ranging from 6 hours to several days (Arnold et al., 2016; Bolshakova, Gieng, Sidhu, et al., 2018; Edwards et al., 2006; Smith, 2011; Weybright et al., 2016).

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One curriculum designed to train teenage teachers that was developed for use in 4-H is Youth Advocates for Health (YA4-H!), which focuses on teaching professional development for teenagers (Arnold et al., 2016; Flesch et al., 2015). YA4-H! can be purchased through 4-H and does not provide specific content knowledge for the program teenagers will be teaching, so it can be adapted for a variety of programs. The YA4-H! program has been widely used and shown to improve confidence, comfort, applicable skills, and perceived subject knowledge in trained teenage teachers (Arnold et al., 2016; Weybright et al., 2018). Along with insufficient facilitation training, it is hypothesized that a lack of content knowledge could have been a hindrance in the current project. Teenagers acted as cross-age teachers in another recent intervention that was designed similarly to the present study and included nutrition content training in addition to using YA4-H! (Weybright et al., 2016; Weybright et al., 2018). This approach observed increases in reported nutrition knowledge and positive behaviors that were attributed to being successful in a teenage teacher role (Weybright et al., 2016; Weybright et al., 2018). Although other approaches have been successful at implementing nutrition education programming utilizing teenagers as cross-age teachers, the same protocol may be insufficient for SHCP curricula because the content supersedes general nutrition.

Practitioners should consider measuring fidelity when implementing multi-component programming. Measuring fidelity for individual components of a program or curriculum implementation can be helpful in identifying possible explanations for unexpected outcomes, especially when implementing an existing program in a new context. Additionally, fidelity measurement of individual components allows for targeted training and improvement of practice over time.

Future Directions

The curricula of the SHCP are quite comprehensive and their implementation has been found to be most successful with adequately knowledgeable and confident educators (Linnell et al., 2016). Due to this, the SHCP has been implemented with the CalFresh Healthy Living, University of California program using trained adult educators. The background content for each module of the SHCP curricula is fairly limited and may not provide enough depth for those that do not have ample content knowledge. Findings from the present study provide rationale and impetus for more extensive education and training for teenage teachers implementing the SHCP. The training should incorporate more opportunities for teenage teachers to engage in lesson delivery and teacher skill-building as well as gaining applicable subject matter

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knowledge. Future directions include the development of a two-tiered, cross-age-teaching training model, wherein college undergraduate interns will be trained to educate teenagers in food literacy and cross-age teaching methodology. All education will be completed within existing after-school programs. College interns will use a newly developed curriculum, *Teens CAN: Comprehensive Food Literacy in Cooking, Agriculture, and Nutrition* (Ruiz et al., 2019). *Teens CAN* differs in extent and content from other curricula in that it focuses on the food system as a whole, rather than gardening, and teaches cooking skills and food safety. Additionally, the curriculum also includes specific content on nutrition and nutrients of concern for adolescents. This approach will include a 3-day training and provide background knowledge in an engaging way using modeling, role-playing, and reflection training to prepare for cross-age teaching. It is anticipated that knowledge gained from actively engaging in *Teens CAN* lessons, or another age-appropriate comprehensive nutrition curriculum, and more targeted training will allow future teenage teachers facilitating SHCP curricula to achieve higher fidelity.

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Appendix

Observation Tool for Implementation of [Curriculum Name]

Observer _____ Educator _____ Date _____

Activity [#] – [Title]

Program Fidelity

Curriculum Session	Program Fidelity	Notes
Opening Questions Time started: Time ended:	Asked opening questions <input type="checkbox"/> Did not do <input type="checkbox"/> Partially delivered according to curriculum <input type="checkbox"/> Fully delivered according to curriculum	
Procedure (Experiencing) Time started: Time ended:	Conducted [procedure] <input type="checkbox"/> Did not do <input type="checkbox"/> Partially delivered according to curriculum <input type="checkbox"/> Fully delivered according to curriculum	
Sharing, Processing and Generalizing Time started: Time ended:	Youth shared and discussed their [product of the procedure] and what they learned <input type="checkbox"/> Did not do <input type="checkbox"/> Partially delivered according to curriculum <input type="checkbox"/> Fully delivered according to curriculum	
Concept of Term Discovery/Introduction Time started: Time ended:	Concepts and terms such as [primary concepts] were discovered by the youth or introduced by the facilitator <input type="checkbox"/> Did not do <input type="checkbox"/> Partially delivered according to curriculum <input type="checkbox"/> Fully delivered according to curriculum	

Adapted from Linnell and Smith