

Cornell's Choose Health Action Teens (CHAT) Evaluation Report

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Executive Summary

Choose Health Action Teens (CHAT) is a program of Cornell Cooperative Extension's 4-H and Nutrition programs led by Wendy Wolfe, Research Associate in the Division of Nutritional Sciences, and Nigel Gannon, New York State 4-H Healthy Living Program Specialist. The program integrates youth civic engagement with efforts to encourage healthy lifestyles by having teens teach a newly developed curriculum, *Choose Health: Food, Fun, and Fitness* (CHFFF), to 8-12 year olds in after-school, summer camp, and other settings, in partnership with Cornell Cooperative Extension (CCE) 4-H or nutrition educators. CHFFF is aimed at 8-12 year olds and uses experiential learning to teach healthy eating and active play, targeting behaviors to prevent childhood obesity and chronic disease. The 6 lessons are scripted, and include interactive nutrition activities, food preparation, active games, goal setting, a family newsletter, and nutrition background.

After receiving training on CHFFF and CHAT, educators recruit and train local teens to co-lead the curriculum under their mentorship, with the goal that the teens will gain leadership skills and improve their own healthy behaviors, while the youth taught will find the teens engaging and also make healthy changes. A detailed CHAT Facilitator Guide supports the educators, and includes recruitment tools, a 12-module teen training program that includes teaching skills as well as nutrition content, research-based tips for teens as teachers, facilitation skills, and a review of relevant youth developmental stages. CHAT and CHFFF webinars supplement in-person training, as do periodic conference calls to share CHAT experiences. Both CHAT and CHFFF are available to CCE via our website, are being used in at least 9 other states as part of a United HealthCare funded National 4-H Council project called Eat4-Health, and are available to others upon request.

To evaluate changes in teen behavior and skills due to CHAT, we developed a 4-page questionnaire based on literature review and expert consultation. After piloting and revising, 61 teens in twelve counties returned forms during the reporting period May 2011-April, 2014, with the following results.

Based on the retrospective pre-test, all 8 of the leadership/teaching skills assessed improved from before the teens' CHAT training to after teaching CHFFF. Being capable of teaching others, having leadership skills, knowing how to use their leadership skills, and being a role model for younger youth increased the most (from a mean of 3.2 to 3.6 or 3.7 on a 1-4 scale of how strongly they agreed/disagreed on having each skill). In open-ended responses, many expressed feeling more confident in their ability to teach and communicate with children, for example: "I feel a lot more capable as a teacher/mentor, more prepared to adapt to surprise conditions," "I know how to make lessons fun," "I am able to talk to kids and have them understand," "Before the program I was shy and scared to try something new - now I feel much more confident!" Teens said the best part of being a CHAT was working with children and helping them learn while having fun. When asked how to make their experience better, 29 of the 61 teens said more training and preparation would have helped, but most felt they were adequately supported.

In terms of healthy behaviors, the biggest changes reported by teens after participating in CHAT were drinking more water and less sweetened drinks, eating more vegetables and fruits, being more physically active, reading nutrition labels more often, and eating breakfast more often. Specifically, based on their answers to whether each behavior decreased a lot, decreased a little, stayed the same, increased a little, or increased a lot, 78% drank more water, over half drank less soda, 35% drank less other sweetened drinks, 36% ate a lot more fruit, 17% ate a lot more vegetables, 31% increased a lot how often they eat a fruit or vegetable for a snack, 37% increased a lot how often they are physically active, 37% increased a lot how often they read nutrition labels on food packages, 28% increased a lot how often they eat breakfast, 26% increased a lot how often they eat fruit at breakfast, and 19% increased a lot how often they eat whole grains. Open-ended responses exemplified these changes, for example: "I'm trying to make sure vegetables are included even in breakfast," "Now instead of reaching for chips I will eat fruit," "I will never be able to get a big burger without thinking of blubber burgers," "I am reading the labels more often and sharing my new found information with my family," "I started playing [active] games with my little brothers and their friends," "I started to bring a healthy snack with me to school," and "I stopped drinking energy drinks almost altogether."

Two additional evaluation tools were also piloted and showed promise: a Goal-Setting and Tracking Sheet to document teen behavior change, and a comparison of the first and last Mentor Observation Forms, already used to debrief teens' skills each time they teach. Efforts to evaluate the younger youth are underway, with Wolfe actively involved in developing a set of national youth evaluation tools for EFNEP.

Cornell's Choose Health Action Teens (CHAT) Evaluation Results

Based on 61 teens in CHAT programs in 12 counties, 5/11-9/12

The program meant a lot for me. I learned healthy habits myself, and I also got to bring these ideas and teach them to younger youth. I felt great pride in teaching this program, and I am proud and happy to be a part of it.

-14 year old teen, Putnam County CHAT

Demographics and Program Participation

Mean Age: 16.0 years, Range 13-18 years old, plus one 19 and one 23

Grade, in or going into: 34% 11th grade, 27% 12th grade, 18% 8th-10th grade, 16% just graduated, 5 college

Gender: 75% girls, 25% boys

Counties (# teens): Albany (3), Broome (17), Putnam (5), Saratoga (3), Seneca (3), Oswego (3, 2 programs), Madison (13, 2 programs), Wayne (1), Montgomery (1), Oneida (3), Westchester (4), Ulster (4)

Years involved in 4-H: 3.4 years on average, Range 1-12 (n=41)

Previous experience in public speaking: 79% (n=46)

The following table shows the proportion of each part of the Choose Health lessons that teens helped to teach (n=42). As shown, teens taught most of the games, and were especially involved in the food preparation and the interactive "Apply" activities. Many also helped teach the Add (new information), Anchor (introductory activity), and the final goal setting activity.

Lesson	Games	Anchor	Add	Apply	Away/Goal Setting	Food Prep
1- Sweetened Drinks	73%	43%	41%	47%	37%	49%
2-Vegetables and Fruits	73%	31%	45%	41%	35%	55%
3-Read the Label	61%	22%	16%	39%	22%	37%
4-Whole Grains	59%	37%	37%	37%	31%	41%
5-Fast Foods	65%	37%	29%	35%	31%	39%
6-Breakfast	55%	31%	37%	43%	29%	41%
<i>Average over all lessons</i>	64%	34%	34%	41%	31%	44%

Teen Self-Report of Leadership and Teaching Skills

	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Mean
BEFORE THE PROGRAM:					
I was a role model for younger youth	1.6	11.5	57.4	29.5	3.15

I wanted to be a role model for others	0.0	8.2	37.7	54.1	3.46
I had leadership skills	1.6	13.1	54.1	31.1	3.15
I knew how to use my leadership skills	1.6	14.8	55.7	27.9	3.10
I was capable of teaching others	3.3	11.5	55.7	29.5	3.11
I was capable of leading others	3.4	8.5	50.8	37.3	3.22
I wanted to contribute my skills to help others	0.0	6.7	48.3	45.0	3.38
I wanted to contribute my skills to help my community	3.3	8.2	42.6	45.9	3.31

AFTER THE PROGRAM:	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Mean
I am a role model for younger youth	0.0	0.0	26.2	73.8	3.74
I want to be a role model for others	0.0	1.6	24.6	73.8	3.72
I have leadership skills	0.0	1.6	29.5	68.9	3.67
I know how to use my leadership skills	0.0	1.6	32.8	65.6	3.64
I am capable of teaching others	0.0	0.0	31.1	68.9	3.69
I am capable of leading others	0.0	3.3	32.8	63.9	3.61
I want to contribute my skills to help others	0.0	0.0	25.0	75.0	3.75
I want to contribute my skills to help my community	1.7	3.3	26.7	68.3	3.62

Comparison of Leadership/Teaching Skills BEFORE to AFTER the CHAT Program

<i>From most changed to least:</i>	Mean-Before	Mean-After	Change
I am capable of teaching others	3.15	3.74	+0.59
I know how to use my leadership skills	3.46	3.72	+0.26
I am a role model for younger youth	3.15	3.67	+0.52
I have leadership skills	3.10	3.64	+0.54
I am capable of leading others	3.11	3.69	+0.58
I want to contribute my skills to help others	3.22	3.61	+0.39
I want to be a role model for others	3.38	3.75	+0.37
I want to contribute my skills to help my community	3.31	3.62	+0.31

Self-Report of Programmatic Support for Teens as Teachers

<i>From most agreed to least:</i>	Strongly Disagree (1)	Disagree (2)	Agree (3)	Strongly Agree (4)	Mean
There were dedicated adults who supported me as a teen teacher	1.7%	1.7%	27.1%	66.1%	3.68
I was provided with a curriculum to follow as I taught in this program	6.9%	19.0%	27.6%	46.6%	3.14
I received feedback on how well I was doing as a teacher	3.4%	1.7%	22.0%	69.5%	3.68
I received on-going training and support throughout the program	3.3%	8.3%	23.3%	61.7%	3.53
I received training on how to be a teen teacher before the program began	3.3%	1.7%	28.3%	63.3%	3.62
I received recognition and reward for my teaching efforts	1.7%	8.3%	43.3%	43.3%	3.38
I participated in team building with other teen teachers in the program	1.7%	10.0%	31.7%	53.3%	3.47
The program made sure I had everything I needed to be successful as a teen teacher	3.3%	1.7%	46.7%	45.0%	3.43
I had to go through a formal application process to teach in this program	3.3%	8.3%	50.0%	35.0%	3.27
I felt "set-up" for success by adults running the program	1.7%	1.7%	27.1%	66.1%	3.68

Teen Responses to Open-Ended Questions Related to Skill Development

What was the most important skill you developed while participating in this program?

Improved teaching skills was the most common type of response (n=29), and included:

- How to teach all types of kids
- How to communicate with children better
- How to more effectively interact with larger groups of children while conveying a lesson.
- Dealing with distractions. There were a lot of outside noises and distraction to deal with.
- I wanted to educate others on healthy lifestyles, but before the program I was unable to. Now because of the program I developed my teaching skills.

Leadership skills, including teamwork, were also mentioned (n=12), as were **public speaking skills** (n=7), such as:

- You have to speak up to be a teen leader.
- Being comfortable speaking in front of children and adults.
- Look at other people (team members) and praise them for their success and not be jealous

Another 7 teens mentioned **nutrition skills**, and 5 increased **confidence**.

Do you feel differently about your ability as a teacher or mentor to younger youth since you participated in this program? If so, describe how you feel differently.

About three-quarters of the teens said yes, they felt differently (12 did not). Many expressed **increased confidence** in their ability to teach and work with youth, for example:

- Before the program I was shy and scared to try something new! Now I feel much more confident!
- I feel ever more confident as a mentor because I was able to overcome some challenges children posed as well as leave an effect on certain children.
- I feel more confident teaching versus just giving a speech
- I feel stronger and more confident in my ability to educate youth
- I feel more prepared (a) to teach, (b) to help younger youth, and (c) for other activities I will participate in (3 different teens)

Again, **improved teaching skills** were also expressed, such as:

- I have a better understanding of how to make lessons fun
- I feel like I can handle being a teacher now that I've been through it
- I learned to interact with children more and mentor them
- I love teaching now
- I feel a lot more capable as a teacher/mentor, and I feel like I'm much more prepared to adapt to changing/surprise conditions

Improved communication skills included:

- I feel more comfortable speaking in front of a group
- I feel more comfortable teaching and interacting with kids
- I don't talk much but when I do I can explain things to others
- I am able to talk to kids and have them understand

A few general comments included:

- I feel more capable and more organized
- I feel like a better role model
- I feel more connected to younger children
- I gained an appreciation for children

What was the best part of participating as a teen teacher or mentor in this program?

Enjoying working with children and helping them learn while having fun was the most commented on (n=45). Examples included:

- Seeing the kids get excited about nutrition.
- Teaching the kids - I know they are living healthier because of the program, that is the best part.
- Helping little kids learn how to live a healthy life and make the right decisions
- Seeing the kids we taught as they learned something new become excited to tell others.
- I loved hearing how the kids took "healthy steps" or what they can remember from lesson to lesson.
- Watching the kids have fun and learn new things.
- Seeing the kids smile.

Other comments related to bonding with their leader and other team members (“Growing closer to the members of my CHAT team and actually seeing the difference my teaching made,”) being a leader, feeling more confident, and learning to make healthier choices.

What could be done to make your experience as a teen teacher even better?

While 9 teens said no changes were needed, **more training and preparation** were listed by 13 teens in three counties, with one specifying the need to learn “ways to get children to listen and not have their own side conversations.”

Other comments related to **program organization** (n=13), with several wanting more time with the children or more frequent classes (in one case every week instead of every two weeks, “so the kids remember us and the previous lesson (which we mention) better”), and one comment each asking for more participation in the teaching and not just games and food preparation, better organization, better food preparation materials (e.g., bigger cutting boards, knives), more kids, getting the kids more involved, more teens to teach with, and more money. A few final comments related to the lessons themselves, one that the lessons should be more crafty and fun and less like an in-school class, one wanting to add sports activities, and another wanting to ask the youth what other games they wanted to play.

Teen Self-Report of Eating and Activity Behavior Change

Note: A mean below 3.0 indicates an increase in the behavior, with lower numbers showing greater increase, while a mean above 3.0 indicates a decrease, with higher numbers showing a larger decrease.

Compared to BEFORE your CHAT training and teaching:	Increased a Lot (1)	Increased a Little (2)	About the Same (3)	Decreased a Little (4)	Decreased a Lot (5)	Mean
How often I drink regular soda such as Coke, Pepsi, or Sprite. (Do not include diet soda, seltzer or club soda)	3.4%	1.7%	37.3%	32.2%	25.4%	3.75
How often I drink other sweetened beverages such as Snapple, Gatorade, SunnyD, Hawaiian Punch, Hi-C, Kool-Aid, lemonade, sugar-sweetened iced tea, or sweet coffee beverages. <i>Do not include</i> fruit juice.	3.4%	5.1%	54.2%	27.1%	10.2%	3.36
How often I drink low-fat or fat-free milk, including on cereal.	15.8%	17.5%	54.4%	7.0%	5.3%	2.68
How much water I drink.	59.3%	18.6%	20.3%	1.7%	0.0%	1.64
The amount of vegetables I eat.	17.2%	44.8%	36.2%	1.7%	0.0%	2.22
How often I eat 2 vegetables at dinner.	8.5%	33.9%	52.5%	3.4%	1.7%	2.56
How often I eat a fruit or vegetable for a snack.	30.5%	33.9%	33.9%	1.7%	0.0%	2.07
The amount of fruit I eat.	35.6%	37.3%	27.1%	0.0%	0.0%	1.92
How often I eat breakfast.	27.6%	19.0%	48.3%	5.2%	0.0%	2.31
How often I eat fruit at breakfast.	25.9%	25.9%	44.8%	3.4%	0.0%	2.26
How often I eat whole grains such as	19.0%	25.9%	50.0%	5.2%	0.0%	2.41

whole wheat bread, brown rice, and whole grain breakfast cereals.						
How often I eat snack foods like chips, candy or cookies.	5.2%	6.9%	41.4%	36.2%	10.3%	3.40
How often I read the nutrition label on a food package.	37.3%	23.7%	32.2%	5.1%	1.7%	2.10
How often I choose a small size or share an order when I eat out.	18.3%	28.3%	46.7%	1.7%	5.0%	2.47
How often I am physically active.	37.3%	23.7%	39.0%	0.0%	0.0%	2.02
How much non-homework time I spend in front of a screen, such as computer, TV, video games, etc.	10.2%	6.8%	55.9%	25.4%	1.7%	3.02

Summary of Teen Eating and Activity Changes

The biggest changes reported by teens after participating in CHAT were drinking more water and less sweetened drinks, eating more vegetables and fruits, being more physically active, and reading nutrition labels and eating breakfast more often. Specifically:

More water, less sweetened drinks:

- 77.9% reported now drinking more water, 59.3% a lot more, 18.6% a little more
- Over half said they decreased how often they drink soda, 25% a lot, 32% a little
- 37% reported decreasing how often they drink other sweetened drinks at least a little

More fruit and vegetables:

- 72.9% ate more fruit - 36% a lot more, 37% a little more
- 62% ate more vegetables - 17% a lot more, 45% a little more
- 64.4% increased how often they ate a fruit or vegetable for a snack – 30.5% a lot, 34% a little
- 42.4% increased how often they ate two vegetables at dinner – 8.5% a lot, 33.9% a little

More physical activity:

- 61% increased how often they were physically active – 37.3% a lot, 23.7% a little

Read nutrition labels more often:

- 61% said how often they read nutrition labels on food packages increased – 37% a lot, 24% a little

More and healthier breakfasts:

- 47% increased how often they ate breakfast - 28% a lot, 19% a little
- 52% increased how often they ate fruit at breakfast - 26% a lot, 26% a little

More whole grains:

- 45% increased how often they ate whole grains -19% a lot, 26% a little

Other healthy eating:

- Snack foods: 7% increased a lot, 36% a little
- Small size or share when eating out: 18% increased a lot, 28% a little
- Low-fat or fat-free milk: 16% increased a lot, 18% a little

Teen Responses to Open-Ended Questions Related to Eating and Activity

Compared to BEFORE YOUR TRAINING on how to teach the Choose Health lessons, how have your eating and activity habits changed, if at all?

As teens entered their answers for each behavior above, there was also a space for optional comments, and here are those results.

For the soda and sweetened drinks questions, most comments were that how often they drank it did not change because they already didn't drink it. Two others were pointed:

- I definitely started to read soda labels!
- I read the nutrition fact label on soda and it really opened my eyes

For water, one teen commented "I didn't realize how 'important' it was."

For vegetables:

- I'm learning to expand my taste horizon for vegetables.
- I'm trying to make sure vegetables are included even in breakfast.

For fruits:

- Now instead of reaching for chips I will eat fruit
- I started having more fruits a day
- I realized the importance [of eating more fruit]

Eating out:

- I will never be able to get a big burger without thinking of blubber burgers

What is the biggest eating or physical activity change you made as a result of what you learned in this program?

Reading labels was the most common change listed (n=10), for example:

- I now read the label on everything I eat and buy. I always check the fat and sugar levels to try and limit my daily intake of fat and sugar.
- I am reading the labels more often and sharing my new found information (and snacks) with my family.
- I have learned to really look at what I am going to eat
- I read labels a lot more now and try to pick the healthier choice.
- I have started to look at what I am eating and how many bad calories are in the food.
- [I am] more conscious reading about my food decisions

Next most common were changes related to **physical activity** (n=11), such as:

- I ride my bike more often (n=2)
- I joined a gym (n=2)
- I started playing games with my little brothers and their friends
- More walking
- I joined more sports to keep myself active
- I run on the treadmill more often

7 teens said they were now eating more vegetables and fruit, including:

- Eating an apple for breakfast

- I started to bring a healthy snack or breakfast of fruit and veggies with me to school

5 teens said their biggest change was **drinking less soda or sugar**, including one who said “I stopped drinking energy drinks almost altogether.”

4 others said **drinking more water** was their biggest change, one specifying drinking 8 glasses a day, and another saying “I now carry a water bottle with me pretty much everywhere.”

3 teens said they **now eat breakfast**, and one of them also makes sure the breakfast is healthy.

Other comments included eating less, eating less fast foods, knowing how much fat is in fast foods, knowing how to make healthy snacks, trying to eat more whole grains, and eating more regularly. Four other teens just said they are now eating healthier, but were not more specific.

Additional comments

- The snacks were great ideas. We even had some kids ask for the recipe without us giving it to them. It would be nice if I did not have to do so much paperwork.
- We kept the snack at the end a secret and it worked very well and kept the kids wondering and interested.
- It made me more responsible with kids
- I love this program!

Results of Pilot of Additional Evaluation Tools

We also developed and piloted two additional evaluation tools. The first was a **Goal-Setting and Tracking Sheet** for the teens to record the goals they set for themselves as they helped the youth set goals at the end of each lesson, and the next week record any steps or actions toward their goal. Eight forms were returned, from 4 counties, and responses were a mix – some very general and some showing real engagement. Examples of the latter are shown below. Instructions for use of the form will be clarified and facilitators will be encouraged to use it more.

- Goal to drink more water (Lesson 1): “I started carrying a water bottle with me in my backpack and in our car to drink throughout the day, and I’ve also made a conscious effort to replace juice with water.”
- Goal to read the amount of sugar on drink labels (Lesson 1): “I read the amount of sugar on a soda that I was about to drink, but after [that] I opted for a healthier choice.”
- Goal to “step outside my normal array of fruits and veggies” (Lesson 2): “I introduced some new fruits and veggies in to my normal routine.”
- Goal to eat more fruit and vegetables (Lesson 2): “I realized I only eat 1 serving a day. Going to try to eat three.”
- Goal to eat more servings of fruit and vegetables (Lesson 2): “I packed fruits and vegetables in my lunch.”
- Goal to pay more attention to labels and ingredients (Lesson 3): “I definitely started to read labels, especially on sodas, and started to make healthier choices based on nutrition facts.”
- Goal to start eating more whole grain pasta (Lesson 4): “I tried whole grain pastas several times and was surprised that it tasted almost the same as the non whole grain stuff!”
- Goal to eat more whole grain foods (Lesson 4): “I chose a cereal made with whole grains instead of a cereal that didn’t have whole grain.”

The second additional evaluation tool was to compare the first and last **Mentor Observation Form** for each teen to quantitatively assess improvement in the various facilitation skills specified. Adult

mentors are already asked to complete this form right after each teen teaches to help in debriefing the teens and improve their teaching – it includes a rating scale for each skill along with comments. The pilot suggested that this can be a useful additional evaluation method, but because both a draft form and a greatly revised final version were used during the pilot phase, there are inadequate numbers of either to analyze quantitatively.

References

Shilts M, Smith D, Ontai-Grzebik L, Townsend MS. Evidence to support the use of the retrospective pretest method to measure dietary behavior and self-efficacy in adolescents. *J Youth Development*. – was in press, get final ref

(The results of this study gives Youth EFNEP the academic basis for developing evaluation tools for adolescents using the retrospective pre method. Why important? County staff are hesitant to begin the education experience with a pretest. This method saves the pre and post tests for the end of the ed experience. Process evaluation.)

Other relevant refs (include here?)

[Anliker.Jean Ann](#); [Drake.Linda T.](#); [Pacholski.Joseph](#); [Little.Wanda](#)

Impacts of a multi-layered nutrition education program: Teenagers teaching children
[J.Nutr.Educ.](#), 1993, 25, 3, 140-143