



NATIONAL 4-H HEALTHY LIVING: SUMMARY OF WALMART-FUNDED PROJECTS

*PRESENTED TO
NATIONAL 4-H COUNCIL*

Joseph L. Donaldson, Ph.D.
Assistant Professor

University of Tennessee
October 14, 2016

National 4-H Healthy Living: Summary of Walmart-Funded Projects

Contents

Introduction..... 3

Research Questions..... 3

Methods..... 3

Results..... 4

Research Question One – What was the demographic composition and 4-H experience of youth participants and youth/teen leaders? 4

Research Question Two – How were youth participants influenced by the program, if at all, in regards to their nutrition and physical activity?..... 10

Nutrition (Youth Participants) 10

Physical Activity (Youth Participants) 13

Research Question Three – How were youth and teen leaders influenced by the program, if at all, in regards to their nutrition, physical activity, and civic engagement? 15

Nutrition Knowledge (Youth/Teen Leaders) 15

Food Choices (Youth/Teen Leaders) 16

Physical Activity (Youth/Teen Leaders) 19

Civic Engagement and Confidence (Youth/Teen Leaders) 20

Intentions (Youth/Teen Leaders) 22

Leadership (Youth/Teen Leaders) 23

Program Quality (Youth/Teen Leaders) 24

Summary..... 28

Conclusions..... 28

Recommendations..... 31

References..... 32

Acknowledgements..... 32

Data Analysis 33

Contact Information 33

National 4-H Healthy Living: Summary of Walmart-Funded Projects

Introduction

National 4-H Council, through the generous support of Walmart, funded 24 grantees in the 4-H Healthy Living initiative, *Youth Voices Youth Choices*. These grantees were requested to use the same *4-H Common Measures* instruments (Le Menestrel & Walahoski, 2013) for program evaluation purposes. One tool was provided for youth participants, and this tool was identified as highly suitable for grades 4-7. A different tool was provided for youth/teen leaders, and this tool was identified as highly suitable for grades 8-12.

The tool for youth/teen leaders includes sections of the Citizenship Common Measures survey to assess leadership development by the teens engaged with program planning and delivery. Program dosage was set at six hours for youth participants to have their impact assessed. Evaluation data was entered by state grantees in the *4-H Common Measures* software.

Research Questions

The following questions guided this study:

1. What was the demographic composition and 4-H experience of youth participants and youth/teen leaders?
2. How were youth participants influenced by the program, if at all, in regards to their nutrition and physical activity?
3. How were youth/teen leaders influenced by the program, if at all, in regards to their nutrition, physical activity, and civic engagement?

Methods

Program dosage was set at six hours for youth participants to have their impact assessed. Evaluation data was entered by state grantees in the *4-H Common Measures* software with data entry managed by state grantees in coordination with the University of Nebraska, Lincoln (UNL). UNL and National 4-H Council transmitted Statistical Package for the Social Sciences (IBM SPSS Statistics) files to the University of Tennessee for analysis. SPSS version 24.0 was used for the data analysis.

It should be noted that the total number of respondents per question varies as not all respondents answered all questions. Percentages listed throughout this report describe the total number of respondents who answered the question rather than the total group of young people participating in the survey.

Missing values were ignored through pairwise deletion; deleting only those missing values for a case rather than excluding the case from the entire data set. Only descriptive statistics were used, for example, mean, mode, and percentage; inferential statistics were not reported. The summary

provided here uses text, tables, and graphs to address the research questions. In some cases, the strongly disagree and disagree responses were collapsed to show disagreement, and agree and strongly agree responses were collapsed to show agreement which is a common method for simplifying and describing responses (Donaldson, 2014).

Results

Research Question One – What was the demographic composition and 4-H experience of youth participants and youth/teen leaders?

Of the 36,868 youth participants surveyed, 35,922 answered the question regarding grade. The majority of students (69%) were in grades 4-7 with a mean of sixth grade (μ : 6.10; S.D.: 2.462). The largest single grade of participants was the 4th grade (n=8610; 24%). The smallest group of respondents by grade were 2nd graders (n=793; 2.2%). See Table 1A for youth participants' grades in school.

Table 1A

Grades in School of Program Participants

Grade	N (35,922)	% (100%)	μ (S.D.)
2 nd grade	793	2.2	6.10 (2.462)
3 rd grade	1735	4.8	
4 th grade	8610	24.0	
5 th grade	7333	20.4	
6 th grade	4795	13.3	
7 th grade	4042	11.3	
8 th grade	2468	6.9	
9 th grade	1788	5.0	
10 th grade	1542	4.3	
11 th grade	1263	3.5	
12 th grade	1104	3.1	
Other ^a	449	1.2	

^a An “other” category was provided for respondents.

Note. This table reflects students' self-identified grades and may not reflect their true grades.

The majority of youth/teen leaders (51.6%) were in grades nine (n=349, 10 (n=237), and 11 (n=256). The mean grade was ninth grade (μ :9.30; S.D.:2.048). See Table 1B for youth/teen leaders' grades in school.

Table 1B

Grades in School of Youth/Teen Leaders

Grade	N (1633)	% (100%)	μ (S.D.)
4 th grade	28	1.7	9.30 (2.048)
5 th grade	33	2.0	
6 th grade	126	7.7	
7 th grade	103	6.3	
8 th grade	239	14.6	
9 th grade	349	21.4	
10 th grade	237	14.5	
11 th grade	256	15.7	
12 th grade	210	12.9	
Other ^a	52	3.2	

^a An “other” category was provided for respondents.

Note. This table reflects students’ self-identified grades and may not reflect their true grades.

Among youth participants, two-thirds (n=23,433; 67.9%) were in their first year of 4-H participation. The mean was 1.83 years of 4-H participation. Among youth/teen leaders, the mean was 1.83 years of 4-H participation. More than one-half of the youth/teen leaders were in their first year of 4-H participation (n=803; 51%).

Regarding weekly hours spent in 4-H, the youth/teen leaders ($\mu=2.07$; S.D.=.656) tended to spend slightly more time than the youth participants ($\mu=1.71$; S.D.=.709). The highest percentage of youth participants (n=14,984; 43.7%) reported spending less than one hour per week in 4-H. While the majority of youth/teen leaders (n=935; 56.5%) reported spending between one and three hours per week in 4-H.

The highest percentage of youth participants were involved in in-school 4-H programs (n=17,771; 48.2%), followed by after-school programs (n=8150; 22.1%) and camps (n=8122; 22%). The highest percentage of youth/teen leaders were involved in clubs (n=811; 22%), followed by in-school programs (n=694; 38.3%) and camps (n=8122; 22%). Interestingly, 29.9% of youth/teen leaders (n=541) reported participating in community service projects compared to 10.4% of youth participants (n=3818). See Table 2.

Table 2

4-H Experiences of Youth Participants and Youth/Teen Leaders

4-H Experiences	Youth Participants			Youth/Teen Leaders		
	N	%	μ (S.D.)	N	%	μ (S.D.)
Years Participating in 4-H	34521	100	1.51(.790)	1574	100	1.83(.905)
First Year	23,433	67.9		803	51.0	
Second Year	4636	13.4		238	15.1	
Three or More Years	6452	18.7		533	33.9	
Weekly Hours Spent in 4-H	34,267	100	1.71(.709)	1655	100	2.07(.656)
Less than one hour	14,984	43.7		301	18.2	
Between one and three hours	14,197	41.4		935	56.5	
More than three hours	5086	14.8		419	25.3	
4-H Involvement ^a						
Clubs	7047	19.1		724	40.0	
Camps	8122	22.0		625	34.5	
After-school programs	8150	22.1		419	23.1	
In-school programs	17,771	48.2		694	38.3	
Local fairs/events	5016	13.6		534	29.5	
Community service projects	3818	10.4		541	29.9	
Working on projects at home	3974	10.8		306	16.9	
Other	3969	10.8		293	16.2	

^a4-H Involvement does not equal 100% as respondents were asked to indicate each method that applied to them.

The mean age of youth participants was 11.56 years (S.D.=2.552), and the mean age of youth/teen leaders was 14.70 years (S.D.=2.184). The majority of the youth participants were female (55.4%; n=19776), and the majority of the youth/teen leaders were female (61.3%; n=1020).

The largest percentage of youth participants were white (n=19151; 51.9%) followed by black or African-American (n=8254; 22.4%). Similarly, the largest percentage of youth/teen leaders were white (n=918; 50.7%) followed by black or African-American (n=547; 30.2%). The majority of both youth participants (n=26430; 75.9%) and youth/teen leaders (n=819; 78.6%) were not Hispanic or Latino. Table 3 shows the number of respondents by age, gender, race, and ethnicity.

Table 3

Age, Gender, Race, and Ethnicity of Youth Participants and Youth/Teen Leaders

	Youth Participants			Youth/Teen Leaders		
	N	%	μ (S.D.)	N	%	μ (S.D.)
Age	<u>35972</u>	<u>100</u>	11.56(2.552)	<u>3143</u>	<u>100</u>	14.70(2.184)
≤9	6937	19.3		27	1.5	
10	7438	20.7		29	1.7	
11	6285	17.5		77	4.6	
12	4886	13.6		119	7.1	
13	3160	8.8		171	10.2	
14	2190	6.1		363	21.7	
15	1617	4.5		260	15.5	
16	1421	4.0		278	16.6	
17	1036	2.9		201	12.0	
18	615	1.7		96	5.7	
Other	387	1.1		55	3.3	
Gender	<u>35724</u>	<u>100</u>		<u>1664</u>	<u>100</u>	
Female	19776	55.4		1020	61.3	
Male	15948	44.6		644	38.7	
Ethnicity	<u>34825</u>	<u>100</u>		<u>1042</u>	<u>100</u>	
Hispanic or Latino	8395	24.1		223	21.4	
Not Hispanic or Latino	26430	75.9		819	78.6	
Race	<u>28754</u>	<u>100</u>		<u>1614</u>	<u>100</u>	
American Indian or Alaskan Native	3002	8.1		82	4.5	
Asian	758	2.1		35	1.9	
Black or African American	8254	22.4		547	30.2	
Native Hawaiian or Other Pacific Islander	591	1.6		32	1.8	
White	19151	51.9		918	50.7	

Note. Row percentages may not total 100.0 due to rounding.

Note. All data is self-reported by youth.

Regarding residence of youth participants, the highest percentage (n=11,852; 33.3%) reported residence in a town or city with a population 10,000 – 50,000, followed by rural non-farm with a population less than 10,000 (n=10,175; 28.6%). Regarding residence of youth/teen leaders, the highest percentage (n=627; 37.8%) reported rural non-farm with a population less than 10,000 followed town or city with a population 10,000 – 50,000 (n=441; 26.6%). Table 4 shows residence of program participants.

Table 4

Residence of Program Participants

Residence	Youth Participants		Youth/Teen Leaders	
	N	%	N	%
	<u>35555</u>	<u>100</u>	<u>1659</u>	<u>100</u>
Farm	4881	13.7	264	15.9
Rural (non-farm residence, pop. <10,000)	10175	28.6	627	37.8
Town or City (pop. 10,000 – 50,000)	11852	33.3	441	26.6
Suburb of a City (pop. > 50,000)	2234	6.3	161	9.7
City (pop. >50,000)	6413	18.0	166	10.0

Note. Row percentages may not total 100.0 due to rounding.

Among grantees, 23 Land Grant Universities provided youth participant data for this project and 22 Land Grant Universities provided youth/teen leader data for this project. The highest number of youth participants in the data set were represented by Prairie View A&M University (n=4384; 11.9%). Slightly more than one-third of the youth/teen leaders were from Virginia Tech (n=609; 33.6%). Table 5 shows participation by Land Grant University.

Table 5

Participation by Land Grant University

LGU	Youth Participants		Youth/Teen Leaders	
	N	%	N	%
Alcorn State University	436	1.2	101	5.6
Clemson University	2057	5.6	17	<1.0
Cornell University	1173	3.2	10	<1.0
Delaware State University	1797	4.9	12	<1.0
Fort Valley State University	351	1.0	39	2.2
Iowa State University	123	<1.0		
Louisiana State University	976	2.6	-	-
North Dakota State University	3020	8.2	90	5.0
Ohio State University	1792	4.9	24	1.3
Oklahoma State University	3444	9.3	92	5.1
Oregon State University	917	2.5	51	2.8
Prairie View A&M University	4384	11.9	108	6.0
Rutgers University	413	1.1	50	2.8
Southern University	314	<1.0	5	<1.0
University of Arkansas	3171	8.6	78	4.3
University of Arizona	1604	4.4	56	3.1
University of Florida	810	2.2	13	<1.0
University of Illinois	954	2.6	5	<1.0
University of Maine	108	<1.0	25	1.4
University of Puerto Rico	2074	5.6	77	4.3
University of Tennessee	408	1.1	-	-
University of the Virgin Islands	2689	7.3	143	7.9
Utah State University	929	2.5	98	5.4
Virginia Tech	-	-	609	33.6
Total	36868	100	1811	100

Research Question Two – How were youth participants influenced by the program, if at all, in regards to their nutrition and physical activity?

This section describes responses to the youth participants’ instrument which focused on two constructs: healthy nutrition choices (i.e., eating fruit for a snack) and physical activity (i.e., exercising 60 minutes every day).

Nutrition (Youth Participants)

Participants were asked how hard it was to make a given nutrition choice because of the 4-H Healthy Living Program. Answer choices were “not hard at all,” “a little hard,” and “very hard”. The following percentages of participants surveyed indicated that as a result of the 4-H Healthy Living program, the following nutrition choices were “not hard at all” –

- 84.8% eat fruit for a snack.
- 71.1% drink less Kool-Aid
- 67.1% eat a low-fat snack like pretzels instead of chips.
- 63.0% choose a small instead of a larger order of French fries.
- 61.7% drink less soda pop.
- 55.5% choose water instead of soda pop or Kool-Aid when thirsty.

Among youth respondents, 17.1% (n=6146) reported it was “very hard” to drink 1% or skim milk instead of 2% or whole milk. Table 6 shows responses for nine different nutrition choices.

Table 6

Nutrition Choices of Youth Participants

How hard would it be for you to	<u>Not hard at all</u>		<u>A little hard</u>		<u>Very hard</u>	
	N	%	N	%	N	%
Eat fruit for a snack (N: 36252)	30729	84.8	4351	12.0	1172	3.2
Eat vegetables for a snack (N: 35969)	19824	55.1	11276	31.3	4868	13.5
Choose water instead of soda pop or Kool-Aid when you are thirsty (N: 36132)	23665	65.5	9269	25.7	3197	8.8
Drink 1% or skim milk instead of 2% or whole milk (N: 35957)	20332	56.5	9476	26.4	6146	17.1
Choose a small instead of a large order of French fries (N: 36001)	22698	63.0	8778	24.4	4524	12.6
Eat smaller servings of high fat foods like French fries, chips, snack cakes, cookies, or ice cream (N: 36113)	18720	51.8	11942	33.1	5451	15.1
Eat a low-fat snack like pretzels instead of chips (N: 35948)	24132	67.1	8554	23.8	3262	9.1
Drink less soda pop (N: 36039)	22253	61.7	9505	26.4	4281	11.9
Drink less Kool-Aid (N: 35850)	25504	71.1	7215	20.1	3129	8.7

Note. Row percentages may not total 100.0 due to rounding.

Participants were asked to respond to four nutrition items that measured general learning that resulted from participation in the 4-H Healthy Living program. The scale was 1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree, and a separate answer choice was provided to indicate “not applicable to my 4-H experience”. The following percentages of participants surveyed indicated “strongly agree” or “agree” to these statements:

- 92.0% learned the foods they should eat every day.
- 91.2% learned why it is important for to eat a healthy diet.
- 91.0% learned how to make healthy food choices.
- 88.7% learned what makes up a balanced diet.

See Table 7 for the nutrition knowledge items, responses, percentages, means, and standard deviations.

Table 7

Nutrition Knowledge of Youth Participants

Knowledge Items ^a	<u>Strongly Agree/Agree</u>		<u>Strongly Disagree/Disagree</u>		<u>Not Applicable to My 4-H Experience</u>		μ (S.D.)
	N	%	N	%	N	%	
	I learned the foods I should eat every day (N: 35858)	32993	92.0	1537	4.3	1328	
I learned what makes up a balanced diet (N: 35799)	31753	88.7	2611	7.3	1435	4.0	1.77(.928)
I learned why it is important for me to eat a healthy diet (N: 35753)	32616	91.2	1896	5.3	1241	3.5	1.65(.897)
I learned how to make healthy food choices (N: 35838)	32605	91.0	2016	5.6	1217	3.4	1.67(.902)

Note. Row percentages may not total 100.0 due to rounding.

^aCollapsed data; scale was 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree.

Participants were asked to respond to six nutrition behaviors that measured general change that resulted from participation in the 4-H Healthy Living program. The scale was 1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree, and a separate answer choice was provided to indicate “not applicable to my 4-H experience”. The following percentages of participants surveyed indicated “strongly agree” or agree” to these statements:

- 88.6% drink more water.
- 84.1% eat more fruits and vegetables.
- 77.0% eat more whole grains.
- 75.9% encourage their family to eat meals together.
- 73.4% eat less junk food.

Table 8 shows the nutrition behaviors, responses, percentages, means, and standard deviations.

Table 8

Nutrition Behaviors of Youth Participants

Nutrition Behaviors ^a	<u>Strongly Agree/Agree</u>		<u>Strongly Disagree/Disagree</u>		<u>Not Applicable to My 4-H Experience</u>		μ (S.D.)
	N	%	N	%	N	%	
I eat more fruits and vegetables (N:35726)	30061	84.1	4510	12.7	1155	3.2	1.85(.931)
I eat more whole grains (N:35417)	27266	77.0	6908	19.5	1243	3.5	2.01(.960)
I eat less junk food (N:35302)	25913	73.4	8178	23.1	1211	3.4	2.08(1.017)
I drink more water (N:35376)	31361	88.6	3059	8.7	955	2.7	1.66(.908)
I encourage my family to eat meals together (N:35533)	26989	75.9	6545	18.4	1998	5.6	2.01(1.113)

Note. Row percentages may not total 100.0 due to rounding.

^aCollapsed data; scale was 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree.

Physical Activity (Youth Participants)

Participants were asked to respond to two items that measured physical activity changes that resulted from participation in the 4-H Healthy Living program. Response categories were always, usually, sometimes, and never. Regarding moderate physical activities like walking, helping out around the house, raking leaves, or using the stairs, the highest percentage indicated “always” (n=18,595; 52.3%), followed by “usually” (n=10,870; 30.6%), “sometimes” (n=5184; 14.6%) and “never” (810; 2.3%). For the item, “I exercise 60 minutes every day,” the highest percentage responded “always” (n=13,415; 38.2%) followed by “usually” (n=9951; 28.3%), “sometimes” (n=8789; 25.0%), and “never” (n=2971, 8.5%); see Table 9.

Table 9

Physical Activity Behaviors of Youth Participants

	<u>Always</u>		<u>Usually</u>		<u>Sometimes</u>		<u>Never</u>	
	N	%	N	%	N	%	N	%
I do moderate physical activities like walking, helping around the house, raking leaves, or using the stairs (N:35513)	18595	52.3	10870	30.6	5184	14.6	810	2.3
I exercise 60 minutes every day (N:35129)	13415	38.2	9951	28.3	8789	25.0	2971	8.5

Note. Row percentages may not total 100.0 due to rounding.

Participants were asked to respond to three physical activity items that measured general attitudes toward physical activity. The following percentages of participants surveyed indicated that they “agreed” to these statements:

- 93.3% reported “being active is good for me.”
- 92.7% reported “physical activity will help me stay fit.”
- 89.1% reported “being active is fun.”

See Table 10.

Table 10

Physical Activity Attitudes of Youth Participants

Items	I agree		I’m not sure		I do not agree	
	N	%	N	%	N	%
Being active is fun (N:35578)	31714	89.1	3236	9.1	624	1.8
Being active is good for me (N:35511)	33131	93.3	2007	5.7	371	1.0
Physical activity will help me stay fit (N:35456)	32881	92.7	1983	5.6	591	1.7

Note. Row percentages may not total 100.0 due to rounding.

Research Question Three – How were youth and teen leaders influenced by the program, if at all, in regards to their nutrition, physical activity, and civic engagement?

Nutrition Knowledge (Youth/Teen Leaders)

Participants were asked to respond to four nutrition items that measured general learning that resulted from participation in the 4-H Healthy Living program. The scale was 1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree, and a separate answer choice was provided to indicate “not applicable to my 4-H experience”. The following percentages of participants surveyed indicated “strongly agree” or agree” to these statements:

- 96.0% learned the foods they should eat every day.
- 96.0% learned why it is important for to eat a healthy diet.
- 96.0% learned how to make healthy food choices.
- 95.2% learned what makes up a balanced diet.

See Table 11 for the nutrition knowledge items, responses, percentages, means, and standard deviations.

Table 11

Nutrition Knowledge of Youth/Teen Leaders

Knowledge Items ^a	<u>Strongly Agree/Agree</u>		<u>Strongly Disagree/Disagree</u>		<u>Not Applicable to My 4-H Experience</u>		μ (S.D.)
	N	%	N	%	N	%	
I learned the foods I should eat every day (N:1702)	1635	96.0	40	2.4	27	1.6	1.54(.707)
I learned what makes up a balanced diet (N:1699)	1618	95.2	53	3.1	28	1.6	1.56(.725)
I learned why it is important for me to eat a healthy diet (N:1693)	1626	96.0	41	2.4	26	1.5	1.47(.703)
I learned how to make healthy food choices (N:1699)	1631	96.0	41	2.4	27	1.6	1.49(.711)

Note. Row percentages may not total 100.0 due to rounding.

^aCollapsed data; scale was 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree.

Food Choices (Youth/Teen Leaders)

Participants were asked to respond to three food choice items that measured general behaviors that resulted from participation in the 4-H Healthy Living program. The scale was 1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree, and a separate answer choice was provided to indicate “not applicable to my 4-H experience”. The following percentages of participants surveyed indicated “strongly agree” or agree” to these statements:

- 88.5% think about what their body needs during the day.
- 88.8% make healthy food choices whenever they can.
- 67.2% match their food intake to the number of calories they need to eat each day.

See Table 12 for the nutrition knowledge items, responses, percentages, means, and standard deviations.

Table 12

Food Choices of Youth/Teen Leaders Participants

Food Choices ^a	<u>Strongly Agree/Agree</u>		<u>Strongly Disagree/Disagree</u>		<u>Not Applicable to My 4-H Experience</u>		μ (S.D.)
	N	%	N	%	N	%	
I think about what foods my body needs during the day (N:1696)	1501	88.5	175	10.3	20	1.2	1.72(.769)
I make healthy food choices whenever I can (N:1696)	1507	88.8	165	9.8	24	1.4	1.75(.771)
I match my food intake to the number of calories I need to eat each day (N:1690)	1135	67.2	523	31.0	32	1.9	2.12(.955)

Note. Row percentages may not total 100.0 due to rounding.

^aCollapsed data; scale was 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree.

Participants were asked to respond to five items measuring dietary quality, eight items measuring family nutrition, and one item measuring food safety that resulted from participation in the 4-H Healthy Living program. The scale was 1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree, and a separate answer choice was provided to indicate “not applicable to my 4-H experience”. The following percentages of participants surveyed indicated “strongly agree” or agree” to these statements:

Regarding dietary quality,

- 91.3% drink more water.
- 87.7% eat more fruits and vegetables.
- 79.4% eat more whole grains.
- 76.7% drink less soda.
- 74.7% eat less junk foods.

Regarding family nutrition,

- 90.1% report their family has prepared healthier foods.
- 88.9% report their family has purchased healthier food.
- 87.6% learned cooking skills.
- 85.3% used cooking skills to prepare food at home.
- 83.7% report their family has prepared meals together.
- 79.9% encourage their family to eat meals together.
- 78.8% report their family has learned skills for buying food on a budget.
- 68.4% taught their families skills for shopping on a budget.

Regarding food safety,

- 96.7% wash their hands frequently.

Table 13 shows the collapsed data for the youth/teen leaders.

Table 13

Dietary Quality, Encouraging Family Nutrition, and Food Safety of Youth/Teen Leaders

Behaviors ^a	<u>Strongly Agree/Agree</u>		<u>Strongly Disagree/Disagree</u> _e		<u>Not Applicable to My 4-H Experience</u> ^b		μ (S.D.)
	N	%	N	%	N	%	
I eat more fruits and vegetables (N:1691)	1482	87.7	182	10.8	27	1.6	1.72(.802)
I eat more whole grains (N:1687)	1339	79.4	321	19.0	27	1.6	1.90(.844)
I eat less junk foods (N:1681)	1257	74.7	399	23.7	25	1.5	1.99(.917)
I drink less soda (N:1681)	1290	76.7	360	21.5	31	1.8	1.90(.959)
I drink more water (N:1693)	1545	91.3	122	7.2	26	1.6	1.54(.792)
I encourage my family to eat meals together (n: 1679)	1343	79.9	333	19.8			1.84(.836)
My family has purchased healthier foods (N:1078)	958	88.9	120	11.1			1.70(.684)
My family has prepared healthier foods (N:1074)	967	90.1	107	9.9			1.68(.678)
My family has prepared meals together (N:1079)	903	83.7	176	16.3			1.76(.775)
I learned skills for buying food on a budget (N:1075)	848	78.8	227	21.2			1.84(.810)
I taught my family skills for shopping on a budget (N:1075)	735	68.4	340	31.6			2.02(.871)
I learned cooking skills (N:1678)	1470	87.6	203	12.1			1.66(.728)
I used cooking skills to prepare food at home (N:1658)	1414	85.3	244	14.7			1.69(.782)
I wash my hands frequently (N:1665)	1609	96.7	56	3.4			1.38(.578)

Note. Row percentages may not total 100.0 due to rounding.

^aCollapsed data; scale was 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree.

^bNot applicable was not an answer category for family nutrition and food safety questions.

Youth/teen leaders were asked if their family ate “at least one meal a day together,” and 72.9% (n=1170) responded yes (Table 14).

Table 14

Family Meals of Youth/Teen Leaders

	<u>Yes</u>		<u>No</u>	
	N	%	N	%
My family eats at least one meal a day together (N:1604)	1170	72.9	434	27.1

Physical Activity (Youth/Teen Leaders)

One in five youth/teen leaders (n=220; 20.1%) are physically active, for a total of at least 60 minutes, seven days of the week. The mean was 5.43 days (S.D.=1.906). The mean number of hours spent playing video games, looking at a computer, smartphone, or tablet (for something that is not for school) on an average school day was 3.40 (S.D.=1.345). One in five respondents (20.4%, n=221) spent four or more hours playing video games, looking at a computer, smartphone, or tablet (for something that is not for school) on an average school day. See Table 15.

Table 15

Physical Activity Behaviors of Youth/Teen Leaders

Behaviors	Youth/Teen Leaders		
	N	%	μ (S.D.)
Number of days in the past seven physically active for a total of at least 60 minutes per day	1093	100	5.43(1.906)
0 days	39	3.6	
1 day	42	3.8	
2 days	87	8.0	
3 days	182	16.7	
4 days	185	16.9	
5 days	233	21.3	
6 days	105	9.6	
7 days	220	20.1	
Number of hours spent playing video games, looking at a computer, smartphone, or tablet (for something that is not for school) on an average school day	1087	100	3.40(1.345)
I do not play video games or computer games or use a computer for something that is not school work	54	5.0	
Less than one hour per day	235	21.6	
2 hours per day	359	33.0	
3 hours per day	218	20.1	
4 hours per day	104	9.6	
5 or more hours per day	117	10.8	

Civic Engagement and Confidence (Youth/Teen Leaders)

The scale to measure civic engagement and confidence was 1=strongly agree, 2=agree, 3=disagree, and 4=strongly disagree. The means ranged from 1.40 (“I can make a difference through community service”) to 1.51 (“I acted as a mentor to others” indicating strong agreement. The following percentages of participants surveyed indicated “strongly agree” or “agree” to these statements:

- 97.6% can make a difference in their community through community service.
- 97.4% are more confident in helping others.
- 97.2% gained skills through serving their community that will help them in their future.
- 96.9% can apply knowledge in ways that solve “real-life” problems through community service.
- 96.8% are encouraged to volunteer more.
- 96.1% are interested in a career that helps others.
- 96% are more confident in themselves overall.
- 94.9% taught others.
- 94.1% acted as a mentor.
- 78.1% are interested in pursuing a health-related career. See Table 16.

Table 16

Engagement and Understanding of Youth/Teen Leaders

Items	<u>Strongly Agree</u>		<u>Agree</u>		<u>Disagree</u>		<u>Strongly Disagree</u>		μ (S.D.)
	N	%	N	%	N	%	N	%	
I can make a difference in my community through community service (N:1092)	690	63.2	376	34.4	21	1.9	5	<1.0	1.40(.553)
I can apply knowledge in ways that solve “real-life” problems through community service (N:1090)	632	58.0	424	38.9	28	2.6	6	<1.0	1.46(.577)
I gained skills through serving my community that will help me in the future (N:1092)	670	61.4	391	35.8	27	2.5	4	<1.0	1.42(.561)
I taught others (N: 1077)	632	58.7	390	36.2	50	4.6	5	<1.0	1.47(.608)
I acted as a mentor to others (N: 1080)	596	55.2	420	38.9	56	5.2	8	<1.0	1.51(.631)
I am more confident in helping others (N: 1079)	653	60.5	398	36.9	21	1.9	7	<1.0	1.43(.568)
I am more confident in myself overall (N: 1078)	659	61.1	376	34.9	38	3.5	5	<1.0	1.43(.587)

Intentions (Youth/Teen Leaders)

Three items were used to measure intentions. The scale was 1=definitely, 2=maybe, 3=probably not, and 4=definitely not. The following percentages of respondents indicated “definitely” to these intentions:

- 72.9% are encouraged to volunteer more.
- 69.1% are interested in a career that helps others.
- 46.7% are interested in pursuing a health-related career.

See Table 16 for self-reported intentions.

Table 16

Intentions of Youth/Teen Leaders

Items	<u>Definitely</u>		<u>Maybe</u>		<u>Probably Not</u>		<u>Definitely Not</u>		μ (S.D.)
	N	%	N	%	N	%	N	%	
I am encouraged to volunteer more (N: 1090)	795	72.9	260	23.9	28	2.6	7	<1.0	1.31(.551)
I am interested in a career that helps others (N: 1089)	753	69.1	294	27.0	39	3.6	3	<1.0	1.35(.562)
I am interested in pursuing a health-related career (N: 1069)	499	46.7	336	31.4	182	17.0	52	4.9	1.80(.890)

Leadership (Youth/Teen Leaders)

Youth perceived that they had greatly improved their leadership skills during the 4-H program. All means for the leadership skills were higher after the program than before, including speaking before a group ($\mu = 2.56$ before and $\mu = 3.33$ after). Also, youth reported that they had experienced a successful youth-adult partnership as a result of the program; see Table 17.

Table 17

Comparison of Youth/Teen Leaders' Perceived Leadership Skills Before and After the Program

Items	Before μ	After μ
I can lead group discussions	2.49	3.28
I can work as a team member	2.83	3.50
I can speak before a group	2.56	3.33
I can see things objectively	2.66	3.31
I can plan programs	2.43	3.21
I can teach others	2.63	3.41
I have experienced a successful youth-adult partnership	2.17	1.48

Note: All but the final question above have increasing levels of ability (1=No ability; 4=Excellent Ability). The final question has a decreasing level of agreement (1=Strongly agree; 5=Strongly Disagree).

Program Quality (Youth/Teen Leaders)

Nine statements were used to measure program quality as perceived by teen teachers. The following percentages of participants surveyed indicated “strongly agree” or agree” to these statements:

- 96.7% reported dedicated adults who supported them as a teen teacher.
- 95.4% reported that they were provided with a curriculum to follow as they taught in this program.
- 94.5% reported that the program made sure they had everything needed to be successful as a teen teacher.
- 94.2% received ongoing training and support throughout the program.
- 93.9% reported feeling “set up” for success by adults running the program.
- 93.8% participated in team building with other teen teachers in the program.
- 92.5% received training on how to be a teen teacher before the program began.
- 90.9% received feedback on how well they were doing as a teacher.
- 90.2% received recognition and reward for their teaching efforts.

See Table 18 for program quality measures, frequencies, percentages, means, and standard deviations.

Table 18

Program Quality as Perceived by Youth/Teen Leaders

Items	<u>Strongly Agree</u>		<u>Agree</u>		<u>Disagree</u>		<u>Strongly Disagree</u>		μ (S.D.)
	N	%	N	%	N	%	N	%	
There were dedicated adults who supported me as a teen teacher (N: 1063)	679	63.9	349	32.8	30	2.8	5	<1.0	1.40(.570)
I was provided with a curriculum to follow as I taught in this program (N: 1061)	637	60.0	376	35.4	39	3.7	9	<1.0	1.45(.610)
I received training on how to be a teen teacher before the program began (N:1058)	623	58.9	356	33.6	62	5.9	17	1.6	1.50(.681)
I received ongoing training and support throughout the program (N: 1061)	638	60.1	362	34.1	48	4.5	13	1.2	1.47(.643)

Items	<u>Strongly Agree</u>		<u>Agree</u>		<u>Disagree</u>		<u>Strongly Disagree</u>		μ (S.D.)
	N	%	N	%	N	%	N	%	
The program made sure I had everything I needed to be successful as a teen teacher (N: 1061)	645	60.8	358	33.7	50	4.7	8	<1.0	1.51(.623)
I received recognition and reward for my teaching efforts (N: 1052)	559	53.1	390	37.1	90	8.6	13	1.2	1.58(.700)
I participated in team building with other teen teachers in the program (N: 1057)	633	59.9	358	33.9	58	5.5	8	<1.0	1.47(.636)
I felt “set up” for success by adults running the program (N: 1056)	605	57.3	386	36.6	54	5.1	11	1.0	1.50(.644)
I received feedback on how well I was doing as a teacher (N: 1058)	600	56.7	362	34.2	83	7.8	13	1.2	1.54(.693)

(continued)

Before the program, 27.4% (n=289) youth/teen leaders strongly agreed that they had experienced a successful youth-adult partnership. After the program, 61.3% (n=649) youth/teen leaders strongly agreed that they had experienced a successful youth-adult partnership, an increase of 33.9%. See Tables 19 and 20.

Table 19

Youth-Adult Partnerships Before the Program as Perceived by Youth/Teen Leaders

	<u>Strongly Agree</u>		<u>Agree</u>		<u>Not Sure</u>		<u>Disagree</u>		<u>Strongly Disagree</u>	
	N	%	N	%	N	%	N	%	N	%
I had experienced a successful youth-adult partnership (N: 1054)	289	27.4	410	38.9	259	24.6	74	7.0	22	2.1
Mean(SD): 2.17(.979)										

Table 20

Youth-Adult Partnerships After the Program as Perceived by Youth/Teen Leaders

	<u>Strongly Agree</u>		<u>Agree</u>		<u>Not Sure</u>		<u>Disagree</u>		<u>Strongly Disagree</u>	
	N	%	N	%	N	%	N	%	N	%
I had experienced a successful youth-adult partnership (N: 1058)	649	61.3	339	32.0	54	5.1	3	<1.0	13	1.2
Mean(SD): 1.48(.719)										

Teen teachers were asked four open-ended questions to understand the overall program quality. The four questions were:

- What was the most important skill you developed as a teen teacher?
 - 947 responses
- 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.
 - 1000 responses
- What was the best part of participating as a teen teacher or mentor in this program?
 - 976 responses
- What could be done to make your experience as a teen teacher even better?
 - 1103 responses

Major themes noted in the review included the following:

- Teen teachers perceived that the most important skills they learned related to teaching and communications as illustrated by these representative comments:
 - “As classes went on, I learned how to work with different groups of kids and how to manage a classroom.”
 - “Being able to communicate better and in front of others.”
 - “Best ways to teach and engage different age groups based on their characteristics. Positive encouragement.”
 - “Communication and planning.”
- Teen teachers reported gaining confidence through their service as a teacher and mentor. Representative comments were:
 - “It gave me confidence in teaching.”
 - “Confidence and leadership.”
 - “Self-esteem and self-confidence. Sometimes people make fun of me because I have a learning disability. Serving as a 4-H Ambassador has allowed me to be me and still feel like I am good.”
- Teen teachers perceive that interacting with younger students was the best part of the *4-H Youth Voices Youth Choices* program:
 - “Working with younger kids.”
 - “Working with a range of ages.”
- Teen teachers listed numerous and varied ways to improve the *4-H Youth Voices Youth Choices* program experience for teen teachers. No common themes emerged. The following responses demonstrated the diversity of responses:
 - “Have something like a blog where the ambassadors could ‘ask the expert’ when we get questions that we don’t have the answer to.”
 - “Having more experience working with the kids.”
 - “More hands-on activities.”

Summary

This section discusses conclusions and recommendations for future programming.

Conclusions

The data file held 38,679 cases. More than nine in 10 (n=36,868; 95.3%) reported that they were youth participants with a mean of sixth grade. The youth/teen leader cases numbered 1811 (4.7%). The leading institutions in program evaluation participation were Prairie View A&M University (program participants) and Virginia Tech (youth/teen leaders).

Of the 35,922 youth participants who answered the question regarding grade, the majority of students (69%) were in grades 4-7 with a mean of sixth grade (μ : 6.10; S.D.: 2.462). The largest single grade of participants was the 4th grade (n=8610; 24%). The smallest group of respondents by grade were 2nd graders (n=793; 2.2%). The majority of youth/teen leaders (51.6%) were in grades nine (n=349, 10 (n=237), and 11 (n=256). The mean grade was ninth grade (μ :9.30; S.D.:2.048).

Among youth participants, two-thirds (n=23,433; 67.9%) were in their first year of 4-H participation. More than one-half of the youth/teen leaders were in their first year of 4-H participation (n=803; 51%). Regarding weekly hours spent in 4-H, the youth/teen leaders (μ =2.07; S.D.=.656) tended to spend slightly more time than the youth participants (μ =1.71; S.D.=.709); while the majority of youth/teen leaders (n=935; 56.5%) reported spending between one and three hours per week in 4-H.

The highest percentage of youth participants were involved in in-school 4-H programs (n=17,771; 48.2%), followed by after-school programs (n=8150; 22.1%) and camps (n=8122; 22%). The highest percentage of youth/teen leaders were involved in clubs (n=811; 22%), followed by in-school programs (n=694; 38.3%) and camps (n=8122; 22%).

The mean age of youth participants was 11.56 years (S.D.=2.552), and the mean age of youth/teen leaders was 14.70 years (S.D.=2.184). The majority of the youth participants were female (55.4%; n=19776), and the majority of the youth/teen leaders were female (61.3%; n=1020).

The largest percentage of youth participants were white (n=19151; 51.9%) followed by black or African-American (n=8254; 22.4%). Similarly, the largest percentage of youth/teen leaders were white (n=918; 50.7%) followed by black or African-American (n=547; 30.2%). The majority of both youth participants (n=26430; 75.9%) and youth/teen leaders (n=819; 78.6%) were not Hispanic or Latino.

Regarding residence of youth participants, the highest percentage (n=11,852; 33.3%) reported residence in a town or city with a population 10,000 – 50,000. Regarding youth/teen leaders, the highest percentage (n=627; 37.8%) reported residence in rural non-farm with a population less than 10,000 (n=441; 26.6%).

The project produced many positive outcomes for young. The youth responses to the project’s outcome indicators indicate a progression from learning (knowledge and attitudes) to action (choices and behaviors). **Among the 36,868 youth participants, the outcomes listed below were achieved.**

Nutrition Knowledge

- 92.0% learned the foods they should eat every day.
- 91.2% learned why it is important for to eat a healthy diet.
- 91.0% learned how to make healthy food choices.
- 88.7% learned what makes up a balanced diet.

Nutrition Choices/Behaviors

- 88.6% drink more water.
- 84.8% eat fruit for a snack.
- 84.1% eat more fruits and vegetables.
- 71.1% drink less Kool-Aid
- 77.0% eat more whole grains.
- 75.9% encourage their family to eat meals together.
- 73.4% eat less junk food.
- 67.1% eat a low-fat snack like pretzels instead of chips.
- 63.0% choose a small instead of a larger order of French fries.
- 61.7% drink less soda pop.
- 55.5% choose water instead of soda pop or Kool-Aid when thirsty.

Physical Activity Behaviors

- 82.9% “always” or “usually” reported moderate physical activities like walking, helping out around the house, raking leaves, or using the stairs.
- 55.6 reported they “always or “usually” exercise 60 minutes every day.

Physical Activity Attitudes

- 93.3% reported “being active is good for me.”
- 92.7% reported “physical activity will help me stay fit.”
- 89.1% reported “being active is fun.”

Among the project’s 1,811 youth/teen leaders, the following outcomes were reported.

Nutrition Knowledge

- 96.0% learned the foods they should eat every day.
- 96.0% learned why it is important for to eat a healthy diet.
- 96.0% learned how to make healthy food choices.
- 95.2% learned what makes up a balanced diet

Food Choices

- 88.5% think about what their body needs during the day.
- 88.8% make healthy food choices whenever they can.
- 67.2% match their food intake to the number of calories they need to eat each day.

Dietary Quality

- 91.3% drink more water.
- 87.7% eat more fruits and vegetables.
- 79.4% eat more whole grains.
- 76.7% drink less soda.
- 74.7% eat less junk foods.

Family Nutrition

- 90.1% report their family has prepared healthier foods.
- 88.9% report their family has purchased healthier food.
- 87.6% learned cooking skills.
- 85.3% used cooking skills to prepare food at home.
- 83.7% report their family has prepared meals together.
- 79.9% encourage their family to eat meals together.
- 78.8% report their family has learned skills for buying food on a budget.
- 72.9% reported that their family ate at least one meal a day together.
- 68.4% taught their families skills for shopping on a budget.

Food Safety

- 96.7% wash their hands frequently.

Physical Activity

- One in five youth/teen leaders (n=220; 20.1%) are physically active, for a total of at least 60 minutes, seven days of the week.

Civic Engagement and Confidence

- 97.6% can make a difference in their community through community service.
- 97.4% are more confident in helping others.
- 97.2% gained skills through serving their community that will help them in their future.
- 96.9% can apply knowledge in ways that solve “real-life” problems through community service.
- 96.8% are encouraged to volunteer more.
- 96.1% are interested in a career that helps others.
- 96% are more confident in themselves overall.
- 94.9% taught others.
- 94.1% acted as a mentor.
- 78.1% are interested in pursuing a health-related career.

Intentions

- 72.9% are encouraged to volunteer more.
- 69.1% are interested in a career that helps others.
- 46.7% are interested in pursuing a health-related career.

Leadership Skills

- 33.9% increase in the number of youth/teen leaders who strongly agreed that they had experienced a successful youth-adult partnership.
- Youth/teen leaders reported that they had improved their leadership skills, specifically:
 - Leading group discussions
 - Working as a team member
 - Speaking before a group
 - Seeing things objectively
 - Planning programs
 - Teaching others
 - Partnering with adults

Comments from youth/teen leaders included:

- “As classes went on, I learned how to work with different groups of kids and how to manage a classroom.”
- “It gave me confidence in teaching.”
- “Self-esteem and self-confidence. Sometimes people make fun of me because I have a learning disability. Serving as a 4-H Ambassador has allowed me to be me and still feel like I am good.”

Recommendations

The Walmart-funded Healthy Living programs produced positive youth outcomes regarding nutrition, physical activity, civic engagement, and leadership, and these programs should continue. It is recommended that the *4-H Common Measures* tools continue to be used to measure the results of 4-H Healthy Living programs. The size and scope of this data file (38,679 individual records) suggests that the *4-H Common Measures* approach is a valuable evaluation and reporting solution for projects funded by National 4-H Council and for the Cooperative Extension System in general. The continued development of *4-H Common Measures* is imperative. It provides collective impact, and it is a high-quality tool for multi-site evaluation and reporting. Data collected for this report could be used for benchmarking program outcomes, setting outcome targets, and comparing program performance in subsequent years. All of the institutions consistently used the *4-H Common Measures* instruments, and it is recommended that this uniform use continue.

Youth programs must consider how youth spend their time using technology. One in five respondents (20.4%, n=221) spent four or more hours playing video games, looking at a computer, smartphone, or tablet (for something that is not for school) on an average school day. A large contributor to this number may be text messaging. Nonetheless, this is an alarming number. It is recommended that state and local 4-H professionals and volunteers discuss and document approaches to mediate this phenomenon and its potential influences on youth health.

References

Donaldson, J.L. (2014). Appraising the Appraiser: Extension Agents' and County Directors' Perceptions of Their Appraisers. *Journal of Extension* (52) 2. Available: <http://www.joe.org/joe/2014april/rb2.php>

Donaldson, J.L., Franck, K.L., Toman, J.J. & Moody, T. (2013). *National 4-H healthy living professional and volunteer development needs assessment: A delphi approach, final report*. Available: <https://tiny.utk.edu/hlr2013>

Le Menestrel, S. and Walahoski, J. (2013). An Introduction to the 4-H Common Measures and the Online Data Collection System [Video File]. Retrieved from: <http://www.4-h.org/about/youth-development-research/>

Acknowledgements

JoAnne Leatherman, Sara Hutches, Jill Walahoski, and Jessica Bauman are acknowledged for their valuable advice and assistance with this project. We appreciate Walmart for their generous support of 4-H Healthy Living programs, including this data analysis project, and we also acknowledge the contributions of the National 4-H Healthy Living Mission Mandate Management Team, National 4-H Council, and 4-H National Headquarters within the USDA's National Institute of Food and Agriculture. We are grateful for the state and local Extension professionals and volunteers who provided leadership for this project.

Data Analysis

The data analysis was conducted by Dr. Joseph L. Donaldson, Assistant Professor, University of Tennessee Department of 4-H Youth Development, Agricultural Leadership, Education and Communications.

Dr. Donaldson is an accomplished program evaluator, teacher and researcher. Dr. Donaldson is an Assistant Professor for the University of Tennessee. He is the primary author of the *Program Evaluation Network*, online software used by 700 Extension employees at the four universities. He teaches the UT College of Agricultural Sciences and Natural Resources graduate course in program planning and evaluation, an online course with 25 graduate students. He has developed numerous staff development courses for Extension employees on needs assessment, program planning, evaluation and accountability topics. His online Extension courses have had enrollments of 800 employees at one time. He has published his research in the *Qualitative Report* and the *Journal of Extension*, among others. Donaldson has served as principal investigator for numerous projects including the *National 4-H Healthy Living Professional and Volunteer Development Needs Assessment: A Delphi Approach* (Donaldson, et. al, 2013). He is an active member of the National Association of Extension 4-H Agents, and he received the organization's Air Force Recruiting Salute Award in 2012. As an Extension 4-H Agent, he provided healthy living programs for 2,000 youth enrolled in 80 4-H clubs in Giles County, Tennessee.

Contact Information

Joseph L. Donaldson, Ph.D.
Assistant Professor
The University of Tennessee Extension
Department of 4-H Youth Development, Agricultural Leadership, Education and Communications
2621 Morgan Circle
212-D Morgan Hall
Knoxville, TN 37996-4525
Phone: 865-974-7245
Fax: 865-974-0882
Email: jldonaldson@tennessee.edu