

Low Income Families' Participation in and Perceptions of SNAP-Ed Activities:
Assessments from the 2016 Washington State SNAP-Ed and Farmers Market Access Evaluation

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Abstract

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Background: This thesis assesses the characteristics and experiences of SNAP recipients who are eligible to participate in SNAP-Ed activities, with a particular emphasis on the experiences of families with children.

Methods: SNAP-Ed programs in Washington State were assessed through a mixed methods evaluation of data about participation in SNAP-Ed activities collected as part of the Washington State SNAP-Ed and Farmers Market Access Evaluation conducted by the University of Washington Center for Public Health Nutrition in 2016. Descriptive statistics were used to assess differences between SNAP recipients who participate in SNAP-Ed activities and those who do not and for differences between SNAP-Ed participants and SNAP-Ed non-participants based on whether there were children in the household. Descriptive statistics and qualitative interview responses were assessed for SNAP-Ed participants with children in the household to describe their experience of SNAP-Ed participation.

Results: There were statistically significant differences in the distribution of race/ethnicity between SNAP-Ed participants and non-participants, with the greatest proportion of participants identifying as Non-Hispanic White (58%) and the second greatest proportion of participants

identifying as Hispanic or Latino (20%). Results also showed statistically significant differences in age groups between SNAP-Ed participants and non-participants, although the greatest proportion of all study participants were from the 31-51 age group. In the 31-51 age group, 45% were SNAP-Ed participants compared to 34% who did not participate in SNAP-Ed activities. SNAP participants more often completed the survey in English (89%) than Spanish (11%) ($p = .02$). There were no statistically significant differences in urban/rural residence, primary language, or gender of participants. There were no statistically significant differences across SNAP-Ed activity participants and non-participants with and without children by participant education level or household food security. The greatest proportion of participants reported receiving SNAP benefits for more than 5 years (40%). Families with children in the household described appreciation for access to low cost healthy produce, healthier food choices, healthier meals, and community development through SNAP-Ed activities. Participants also described some barriers to use and opportunities for improvement of SNAP-Ed resources.

Conclusions: Differences in demographic factors including family size and presence of children in the household may correlate with the choice to participate in certain SNAP-Ed activities such as activities for children at farmers markets or activities that provide quick and nutritious family meal planning options. SNAP recipients with children may participate less often in SNAP-Ed activities that do not provide child care resources, therefore indicating the importance of providing child care resources as a method of increasing activity participation. This information about SNAP and SNAP-Ed participant behaviors supports development of SNAP-Ed resources to serve the needs of families with children, thus maximizing the potential of children from lower income families to access nutrition resources in early years.

INTRODUCTION

Problem and Purpose

This thesis assesses the characteristics and experiences of SNAP recipients who are eligible to participate in SNAP-Ed activities, with a particular emphasis on the experiences of families with children. SNAP-Ed is a federally funded program that provides support for evidence-based nutrition education and obesity prevention programs and interventions for individuals and households that are eligible for the Supplemental Nutrition Assistance Program (SNAP). SNAP-Ed programming includes direct education, community and public health approaches to improve nutrition, and multi-level interventions (i.e. school based programs that provide direct nutrition education, promote physical activity, and increase access to food security interventions).¹

SNAP-Ed programs in Washington State were assessed through a mixed methods evaluation of participation in SNAP-Ed activities. Data were collected as part of the Washington State SNAP-Ed and Farmers Market Access Evaluation conducted by the University of Washington Center for Public Health Nutrition (CPHN) in 2016. Throughout this thesis, the term “SNAP-Ed activities” will be used to describe activities known to be directly supported and funded by SNAP-Ed as well as other activities described by study participants that are similar in nature to SNAP-Ed activities but we could not confirm were directly supported by SNAP-Ed funded or supported. The activities assessed in this survey include: fruits and vegetables prescriptions, cooking classes, farmers market tours, kids’ farmers market activities, peer-to-peer programs, and famers market transportation.

Nutrition and Health Outcomes

The CDC's 2010-2015 Dietary Guidelines recommend that Americans increase fruit and vegetable consumption.² Recommendations suggest that adults consume 1.5-2.0 cups of fruit and 2.0-3.0 cups of vegetables each day. However, results from the 2015 Behavioral Risk Factor Surveillance System (BRFSS) survey indicate low intake of fruits and vegetables across all socioeconomic groups. Overall, in 2015 only 12.2% of adults met fruit intake recommendations and 9.3% met vegetable intake recommendations.² Individuals in households below or close to the poverty line were especially at risk for not reaching the recommended levels of vegetable intake.² Health conditions including: overweight, obesity, cardiovascular disease, type 2 diabetes, and some cancers are impacted by poor dietary quality.^{2,3} Adults with lower incomes may be at risk for diet deficiencies due to low fruit and vegetable intake and children's health may similarly be impacted. In addition to challenges for children's early nutrition associated with lower income, healthy food habits modeled by others in the household may have lifetime impacts on children's health behaviors and experiences of obesity or overweight later in life.⁴ The World Health Organization reports that obesity worldwide has nearly tripled since 1975, thus increasing the rate of obesity-related diseases and mortality. SNAP, SNAP-Ed, and other related nutrition programs provide opportunities to positively affect nutrition behaviors for lower income families beginning in childhood and lessen the effect of nutrition associated negative health outcomes over the life-course.⁵

Food Security Issues

Structural issues, such as limited access to healthful food stores in lower income communities or high food costs, prohibit access to healthy food options and are often a barrier to meeting recommended fruit and vegetable intake among lower income families.² Families may select refined grains, sugars, fats, and other energy dense foods due to the lower cost of these foods

compared to fresh foods such as fruits, vegetables, whole grains, and seafood, however, these selections lead to lower overall dietary quality.⁶ Furthermore, programs such as farmers markets that provide fruits and vegetables to communities are found primarily in higher income communities rather than low income communities that would benefit from increased accessibility of fresh fruits and vegetables.⁷

SNAP and SNAP-Ed

In order to provide resources for families who experience challenges in acquiring healthy food, SNAP (formerly known as Food Stamps) provides economic benefits that can be used for food purchases for eligible lower income individuals and families as part of the U.S. domestic hunger safety net.⁸ Many states including Washington have recently implemented programs to allow SNAP benefits to be used at farmers markets. Many SNAP-eligible families are unaware of the option of utilizing SNAP benefits at Washington farmers markets, and they may miss opportunities to utilize SNAP benefits to purchase fresh fruits and vegetables.⁹

SNAP-Ed is a complementary program to SNAP and is intended to provide additional resources and opportunities for target communities to maximize their potential for accessing and utilizing low-cost nutritional resources.¹⁰ SNAP-Ed provides information about nutrition, strategies for stretching food budgets, and physical activity promotion for people who are either using or are eligible for SNAP.¹⁰ SNAP-Ed's strategies are strengthened through partnerships with community organizations that promote a range of activities and initiatives such as social marketing campaigns, nutrition classes, and by focusing on changes in policies, systems, and community environment.¹⁰ While SNAP-Ed resides under the SNAP program umbrella, the eligibility criteria to receive SNAP-Ed resources or participate in program activities is not strictly

limited to those receiving SNAP. SNAP participation is not a requirement for participating in SNAP-Ed activities; SNAP-Ed-eligible individuals include individuals who are either current SNAP recipients, are SNAP-eligible, are receiving other means tested federal assistance, or live in a geographic area (e.g., zip code, school district) where the majority of residents have household incomes of less than 185 percent of the Federal Poverty Guidelines.¹ SNAP-Ed activities, programs, and policy efforts are implemented by SNAP-Ed-funded contractors and organizations. SNAP-Ed contractors often implement activities or focus policy and systems-change efforts in settings such as Temporary Assistance for Needy Families (TANF) offices, food banks, or WIC clinics, where they are likely to reach individuals eligible for SNAP-Ed.¹

SNAP-Ed programs and activities encourage healthy eating and food security in two ways: (1) through direct nutrition education, and (2) through policy, systems, and environmental (PSE) approaches. Direct nutrition education includes activities such as interactive groups, one-on-one instruction, and social marketing campaigns. PSE approaches are intended to supplement individual, group and community-based educational strategies, by affecting the places and spaces in which people live their daily lives. Another effort includes a focus on affecting change at community or population levels in cities, towns, counties, states, territories, and tribes.³ PSE efforts may include multi-level, community-based initiatives, such as advocating for the development of walking trails or ‘complete streets,’ engagement in food policy councils, or educating and assisting members of lower income communities in developing a community garden.¹ Nutrition education paired with PSE approaches demonstrate greater effectiveness than nutrition education alone when working to prevent overweight and obesity.^{1,10} SNAP-Ed made the transition to include PSEs in their portfolio of work in 2010 as a result of the Healthy Hunger

Free Kids Act.¹¹ This Act aimed to maximize the effectiveness of SNAP-Ed programs, facilitate ease of administration within each state, and provide additional funding for program growth.¹¹

Farmers markets have been a key venue for SNAP-Ed programs and activities. As described in this assessment of SNAP-Ed activity participation, SNAP-Ed farmers-market-related direct education and PSE activities can include farmers market tours and activities for individuals, families, and children, transportation support to farmers markets, cooking classes, or peer mentoring programs. Other types of SNAP-Ed programs beyond the scope of this assessment, include a wide range of efforts, such as school-based programs, workplace interventions, or local food policy council activities.¹ To date, few studies have systematically examined the perceptions and experiences of SNAP participants who participate in SNAP-Ed activities. Past studies highlight the significance of early childhood nutrition in for children's long-term health outcomes, and developing a better understanding of how perceptions associated with SNAP-Ed resources may be valuable in supporting vulnerable families' and children's healthy growth and nutrition.¹²

This thesis aims to gain a better understanding of SNAP participants' experience with SNAP-Ed activities in Washington State, with particular attention to the experience of adult SNAP participants with children. This thesis also explores the food security status for SNAP participants with children compared to those without children. In this thesis, I address several targeted research questions focusing on participation in SNAP-Ed activities. I use data from an evaluation of SNAP-Ed in Washington State--the 2016 Washington State SNAP-Ed and Farmers Market Access Evaluation. This assessment contributes to the body of knowledge related to low-income families' experiences with safety net resources and nutrition access programs. The information gathered from this study can provide health practitioners and policymakers with a

more informed understanding of the experiences of lower income families participating in SNAP-Ed programming. This knowledge may be used to inform development of new programs related to SNAP-Ed and improve the quality of existing safety net programs.

Specific Aims and Study Research Questions

This study addresses three specific aims.

(1) Examine the association between demographic characteristics and SNAP-Ed participation. In Aim 1, I answer the following research question: among a sample of Washington SNAP participants, how are participants who engage in SNAP-Ed activities similar to or different from participants who are eligible for SNAP-Ed activities but do not engage? To answer this, I compare characteristics among a sample of Washington SNAP participants to identify differences and similarities between those who participate in SNAP-Ed activities and those who are eligible to participate but do not do so.

(2) Examine the association between the presence or absence of children in a family with: 1) food security and the general demographic profile of SNAP participants, 2) participation in SNAP-Ed activities. To address Aim 2, I answer the following research questions: how do the characteristics of those who participate in SNAP-Ed activities and have children compare with participants that do not have children? Also, how does food security status and other demographic characteristics differ between SNAP participants with children and those without children? To answer these questions we used original survey findings from this current study to assess how characteristics differ between SNAP participants with children and those without children in the household and further, how these characteristics may differ between SNAP

participants with children and without children who participate in SNAP-Ed activities compared to those who do not participate in SNAP-Ed activities.

(3) Qualitatively assess the experiences of families with children who participate in SNAP-Ed activities. To address Aim 3 I answer the following research question: how do SNAP-Ed participants with children describe their experience utilizing SNAP-Ed activities? I answer this question using qualitative long response survey data and quantitative data indicating activity participation.

METHODS

Background and Study Design

This current study utilizes data collected in the 2016 Washington Farmers Market Evaluation conducted by the University of Washington Center for Public Health Nutrition (CPHN). The purpose of the parent study was to evaluate SNAP-Ed-related farmers market resources as well as to explore associations between market use and fresh produce consumption by SNAP participants. A previously unevaluated portion of the survey entitled “Activity Participation” was analyzed in this study. No additional primary data were collected. This portion of the study involved SNAP participants in Washington State. The Washington State IRB (WSIRB D-091415-H16.01) approved this project, enabling access to information gathered under the 2016 Washington Farmers Market Access Evaluation.

Sampling and Data Collection

Researchers mailed an introductory letter and study information sheet to 2500 Washington State SNAP participants in August 2016. From September 2016 to November 2016, SNAP participants were contacted via phone and screened for eligibility and interest to participate in the

Washington State SNAP-Ed and Farmers Market Access Evaluation. Research assistants placed phone calls at various times of day to maximize opportunities to include potential participants with variable work schedules or daytime activities outside of the home. Survey phone calls lasted approximately 25 minutes. Participants received a \$20 grocery gift card as a thank you for their participation.

Participants included in the study were determined to be eligible based on the following criteria: participant received SNAP benefits at the time of the survey, ability to complete the survey in Spanish or English, at least 18 years of age at the time of the survey, and participant self-identified as one of the household's primary grocery shoppers. Four hundred randomly sampled Washington State SNAP participants were surveyed in the original study.

Variables

The data assessed in this analysis include responses to questions about participation in SNAP-Ed activities (see Appendix 1). Questions included multiple response questions such as "Where did you participate in this activity?" with response options including "farmers market," "school," "library," "WIC office," "food bank," "other," "not sure/don't know," or "refused." Other open-ended long response questions included prompts related to SNAP-Ed activity participation such as "Can you describe what it's like for you when you participate in this activity?" Hypothesizing that certain demographics may be more associated with activity participation and other more associated with family characteristics, I utilized the following variables for each specific aim:

1. *Examine association between demographic characteristics and SNAP-Ed participation:*
rurality of residence, language spoken in home, racial/ethnic identification, food security status (assessed via a 2-question screener with the first question asking whether a participant worries about not having enough food and the second question asks whether

the participant has had times when there was not enough food), gender, age, employment status, household monthly monetary amount received from SNAP, and annual household income

2. *Examine the association of the presence or absence of children in a family with 1) food security and the general demographic profile of SNAP participants, 2) participation in SNAP-Ed activities:* language spoken in home, highest education received, food security status, participation in other food assistance programs, number of people in household, number of people in household under age 18, annual household income, and how long the participant had been receiving SNAP/EBT benefits
3. *Assessing experiences of activity participation among families with children:* participation in: fruits and vegetables prescriptions, cooking classes, mock market activities, kids' farmers market activities, peer-to-peer mentoring program related to using SNAP/EBT dollars, and transportation to a farmers market. This aim also assessed participants' likes and dislikes associated with each of the activities.

Analysis

All quantitative data analysis was conducted using STATA 14.2. Statistically significant variations in distributions were assessed using chi-square tests and p-values reported at the 5% significance level.

I used a complete case analysis for this thesis, therefore requiring that participants answered all questions about presence or absence of children, food security, whether they participated in SNAP-Ed activities, and all the demographic factors. Participants were divided into different categories for analysis for each specific aim:

1) *To examine association of demographic characteristics and SNAP-Ed participation, participants were divided into the following categories:*

a) **Study Sample:** SNAP recipients residing in Washington State who completed the full survey

i) **SNAP-Ed activities non-participant:** Study participants who do not participate in SNAP-Ed activities.

ii) **SNAP-Ed activities participant:** Study participants who participate in SNAP-Ed activities.

Differences in the population were assessed to evaluate questions such as: do demographic characteristics indicate that study participants who identify as female participate in SNAP-Ed activities more or less frequently than either the whole study population or study participants who identify as male? Or, for a demographic characteristic with more than two response options, such as age: were rates of SNAP-Ed activity participation equally distributed among age groups?

Chi-square tests were used to identify significant variations in the distribution of participant characteristics between those who participated in SNAP-Ed activities and those who did not.

2) *To examine the associations between the presence or absence of children in a family with: 1) food security and the general demographic profile of SNAP participants, 2) participation in SNAP-Ed activities, participants were divided into the following categories:*

a) **Study Sample:** Washington State SNAP recipients who completed all survey questions

i) **SNAP recipient sample without children:** Study participants who have no children under age 18 in the household.

- ii) **SNAP recipient sample with children:** study participants who have children under age 18 in the household.
- b) **SNAP-Ed activity non-participants:** Study participants who answered all survey questions and do not participate in SNAP-Ed activities.
 - i) **SNAP-Ed activity non-participant without children:** Study participants who do not participate in SNAP-Ed activities and do not have children in the household
 - ii) **SNAP-Ed activity non-participant with children:** Study participants who do not participate in SNAP-Ed activities and have children under age 18 in the household.
- c) **SNAP-Ed Activity Participants:** Study participants who answered all survey questions and participate in SNAP-Ed activities.
 - i) **SNAP-Ed Activities Participant without Children:** Study participants who participate in SNAP-Ed activities and do not have children under age 18 in the household.
 - ii) **SNAP-Ed Activities Participant with Children:** Study participants who participate in SNAP-Ed activities and have children under age 18 in the household.

This portion of the study explored potential associations between demographic characteristics and SNAP recipients' participation in SNAP-Ed activities, while also assessing the presence or absence of children in the household. For example, when comparing the characteristics of SNAP-Ed activity participants with children under age 18 to those without children, does variation exist in the participant's highest education level (i.e. some high school or less, high school, some college, college, post college)? Do we observe similar or different variations in participant education level when considering the factor of SNAP-Ed activity participation in addition to presence or absence of children in the household?

Chi-square tests were used to identify variations in the distribution of participant characteristics between all study participants with and without children, between the SNAP-Ed non-participants with and without children, and between the SNAP-Ed participants with and without children.

All quantitative data analysis was conducted using STATA 14.2. Statistically significant variations were assessed using chi-square tests and p-values reported at the 5% significance level.

3) *To assess experiences of activity participation among families with children, participants responses to participation in SNAP-Ed activities were recorded for the following activity variables:*

a. SNAP-Ed Activity:

- i. Fruits and vegetables prescriptions
- ii. Cooking classes
- iii. Farmers market tours
- iv. Kids' market activity
- v. Peer-to-peer programs
- vi. Famers market transportation

b. Activity familiarity and participation:

- i. Never heard of the activity
- ii. Heard of the activity but not participated in it
- iii. Participated in the activity presently or in the past

This study assessed participation in and knowledge of SNAP-Ed activities included in the Activity Participation survey (see Appendix 1). Research assistants recorded each participant's

response for each SNAP-Ed activity according to whether they had never heard of the activity, had heard of the activity but not participated in it, or participated in the activity presently or in the past. Participation statistics for SNAP-Ed activities were calculated using STATA 14.2.

SNAP-Ed participants with children who said they participated in an activity were asked open-ended questions about their experiences and perceptions of the activity. These responses were transcribed and coded for participants who had at least one child under age 18 in the household and described participating in at least one of the following SNAP-Ed activities: coupon or prescription for fruits and vegetables, cooking classes, mock farmers market activities, kids' farmers market activities, peer-to-peer mentoring program related to using SNAP/EBT dollars at farmers markets, or transportation to a farmers market.

Qualitative analysis to identify common themes was performed using original study audio files and transcribed and coded in Microsoft Word. The codebook for participants' descriptions of their experiences with SNAP-Ed activities was developed using a template provided by a qualitative research methods course at the University of Washington. The codebook includes "Code/Category" alongside a corresponding "Description/Definitions" section and a "Sub-code/Subcategory" section to further elaborate on sub-content of each code. The codebook additionally included a frequency count column alongside each coordinating sub-code.

To analyze the qualitative interviews used in this portion of the study, main codes were developed to align with the SNAP-Ed activity participation survey questions. Survey questions sought to gain information regarding the participants' positive or negative experiences with questions such as "What, if anything, did you like about this activity?" or "What, if anything, did you dislike about this activity?" Additional questions gathered information regarding what the

participants learned, gained, or how they experienced changes in their behavior as a result of the programs. Following transcription of all interviews, code themes were identified from participants' frequently occurring descriptions of their experiences with SNAP-Ed activities. Recurring codes describing participants' SNAP-Ed activity experiences were flagged using the Review function in Microsoft Word and then added to the frequency count for the corresponding code. Intra-coder reliability testing was conducted to validate the current coding system (See Appendix 4). Several weeks after the first completion of transcript coding, unmarked copies of the transcripts were coded again using the same codebook. The first coding included 138 code incidences across all interviews and the second coding included 146 code incidences. Code matching revealed 108 matches between the two rounds of coding for 74% agreement (108 matches divided by 146 identified codes in second coding).^{13,14}

RESULTS

Three-hundred and twenty-five study participants provided complete responses to all survey questions and were included in this analysis. To consistently compare groups for this portion of the study, the 75 participants with survey non-responses were excluded from our assessment.

Demographics of SNAP-Ed-related Activity Participation

Table 1 displays key demographic variables for SNAP recipients who participate in SNAP-Ed activities and SNAP recipients who do not participate in SNAP-Ed activities.

There were statistically significant differences in the distribution of race/ethnicity between study participants who engaged in SNAP-Ed activities and those who did not, with a greater proportion of study participants identifying as Non-Hispanic White who did not participate in SNAP-Ed

activities (62%) than participants identifying as Non-Hispanic White who did engage in SNAP-Ed activities (41%) ($p < 0.001$). On the contrary, a greater proportion of Non-Hispanic Black or African American participants participated in SNAP-Ed activities (14%) as compared to those who did not participate (7%), and a greater proportion of study participants who identified their race as 'Other' participated in SNAP-Ed activities (21%) compared to those who did not participate in SNAP-Ed activities (5%). Statistically significant differences were also present in the distribution of age groups between study participants who engaged in SNAP-Ed activities and those who did not ($p = 0.02$). This significant variation may be driven by the greater proportion of participants from the 18-30 age group (26%) and the 31-51 age group (45%) who participated in SNAP-Ed Activities compared the greater proportion of 51-65 (28%) and 65+ aged participants (21%) who did not participate in SNAP-Ed activities.

Although more individuals in our survey sample lived in rural areas as compared to urban areas, there were no statistically significant differences in urban/rural residence between study participants who engaged in SNAP-Ed activities and those who did not. We additionally found no statistically significant differences in participation in SNAP-Ed activities by primary language or gender. Additionally among both SNAP-Ed participants and non-participants, the greatest proportion of the study population was unemployed, and a large proportion of the population also reported receiving disability benefits.

Table 1: Examining Association of Demographics and SNAP-Ed Participation

Characteristic	SNAP Participants (n=325)	SNAP-Ed Activities Non-Participant (n=259)	SNAP-Ed Activities Participant (n=66)	p-value
Residence				
<i>urban</i>	128 (39%)	100 (39%)	28 (42%)	p = 0.57
<i>rural</i>	197 (61%)	159 (61%)	38 (58%)	
Language Spoken in Home				
<i>English</i>	289 (89%)	231 (89%)	58 (88%)	p = 0.762
<i>Spanish</i>	36 (11%)	28 (11%)	8 (12%)	
Racial/ethnic identification				
<i>Nonhispanic White</i>	187 (58%)	160 (62%)	27 (41%)	p < 0.001
<i>Nonhispanic Black or African American</i>	28 (9%)	19 (7%)	9 (14%)	
<i>Nonhispanic Asian</i>	7 (2%)	6 (2%)	1 (2%)	
<i>Nonhispanic Native American</i>	7 (2%)	7 (3%)	0 (0%)	
<i>Nonhispanic Native Hawaiian, PI, AN</i>	3 (1%)	2 (1%)	1 (2%)	
<i>Other</i>	28 (9%)	14 (5%)	14 (21%)	
<i>Hispanic or Latino</i>	65 (20%)	51 (20%)	14 (21%)	
Food Security: Worry*				
<i>Often true</i>	115 (35%)	92 (36%)	23 (35%)	p = 0.96
<i>Sometimes true</i>	123 (38%)	97 (37%)	26 (39%)	
<i>(Often or Sometimes)</i>	238 (73%)	189 (73%)	57 (73%)	
<i>Never true</i>	87 (27%)	70 (27%)	17 (26%)	
Food Security Not Enough**				
<i>Often true</i>	96 (30%)	78 (30%)	18 (27%)	p=0.88
<i>Sometimes true</i>	130 (40%)	102 (39%)	28 (42%)	
<i>(Often or Sometimes)</i>	262 (66%)	180 (57%)	46 (70%)	
<i>Never true</i>	99 (30%)	79 (31%)	20 (30%)	
Gender				
<i>Male</i>	97 (30%)	83 (32%)	14 (21%)	p=0.09
<i>Female</i>	228 (70%)	176 (68%)	52 (79%)	
Age				
<i>18-30</i>	62 (19%)	45 (17%)	17 (26%)	p=0.02
<i>31-51</i>	117 (36%)	87 (34%)	30 (45%)	

<i>51-65</i>	85 (26%)	72 (28%)	13 (20%)	
<i>65+</i>	61 (19%)	55 (21%)	6 (9%)	
Employment Status				
<i>Not employed</i>	129 (40%)	104 (40%)	25 (38%)	p=0.9
<i>Full time</i>	34 (10%)	26 (10%)	8 (12%)	
<i>Part time</i>	39 (12%)	29 (11%)	10 (15%)	
<i>Seasonal / occasional</i>	7 (2%)	6 (2%)	1 (2%)	
<i>Retired</i>	44 (14%)	35 (14%)	9 (14%)	
<i>Disability</i>	72 (22%)	59 (23%)	13 (20%)	
Monthly household SNAP/EBT Benefits				
<i>Mean Household Monthly EBT\$</i>	\$212.44 (sd=173.38)	\$205.42 (sd=166.58)	\$239.96 (sd=196.78)	

SNAP-Ed participation by presence or absence of children in the household

Table 2 displays key demographic variables across all individuals in the sample, organized by (a) SNAP-Ed participation status, and (b) whether or not there were children in the household.

Significantly more study participants without children completed the survey in English (92%) compared to study participants who did not have children and completed the survey in English (83%) ($p=0.02$, $n=325$). When also considering the variable of SNAP-Ed activity participation, significantly more SNAP-Ed participants without children completed the survey in English compared to SNAP-Ed participants with children who completed the survey in English (97% without children, 77% with children) ($p= 0.01$, $n=66$).

Of interest, there were no statistically significant differences across SNAP-Ed activity participants and non-participants with and without children by participant education level ($p = 0.24$) or household food security “worry” ($p = 0.65$) or “not enough” ($p = 0.16$). There were additionally no statistically significant differences by presence or absence of children in the household.

The greatest proportion of participants in the total study population as well as SNAP-Ed participant and SNAP-Ed Non-Participant groups reported receiving SNAP benefits for more than 5 years. This result was the same for participants with children and those without children.

Two additional observations not included in Table 2 are noteworthy (see Appendix 3). Among SNAP-Ed activity participants, though in a small sample subset (14 Hispanic/Latino SNAP-Ed activity participants out of 66 total SNAP-Ed activity participants), more individuals who identified as Hispanic/Latino reported having children in the household (40%) as compared to individuals not identifying as Hispanic/Latino (<30%) ($p = .02$). As would be expected due to program eligibility requirements, across all survey participants, a greater proportion of households with children than without children participated in WIC Programs, Farmers Market Nutrition Program for WIC (FMNP), Free Summer Meals for Kids, and School Breakfast/Lunch for Kids. Although statistically significant, these results are not surprising as these programs specifically serve households with children.

Table 2: Examining association of SNAP-Ed participation with presence or absence of children

Characteristic	Total Sample	All Survey Participants		p-value	SNAP-Ed Activity Non-Participants		p-value	SNAP-Ed Activity Participants		p-value
	SNAP participant survey sample (n=325)	SNAP Participant survey sample without children (n=202)	SNAP Participant survey sample with children (n=116)		SNAP-Ed Non-Participant without children, n=166	SNAP-Ed Non-Participant with children, n=86		SNAP-Ed Participants without children, n=36	SNAP-Ed Participants with children, n=30	
Language										
<i>English</i>	289 (89%)	186 (92%)	96 (83%)	p = 0.02	151 (91%)	73 (85%)	p = 0.22	35 (97%)	23 (77%)	p = 0.01
<i>Spanish</i>	36 (11%)	16 (8%)	20 (17%)		15 (9%)	13 (15%)		1 (3%)	7 (23%)	
Highest Education received										
<i>some high school or less</i>	48 (15%)	26 (13%)	19 (16%)	p = 0.24	23 (14%)	13 (15%)	p = 0.37	3 (8%)	6 (20%)	p = 0.48
<i>high school</i>	93 (29%)	55 (27%)	36 (31%)		47 (28%)	27 (31%)		8 (22%)	9 (30%)	
<i>some college</i>	116 (36%)	80 (40%)	34 (29%)		66 (40%)	26 (30%)		14 (39%)	8 (27%)	
<i>college</i>	59 (18%)	34 (17%)	25 (22%)		26 (16%)	19 (22%)		8 (22%)	6 (20%)	
<i>post-college (e.g., MS, PhD)</i>	9 (3%)	7 (3%)	2 (2%)		4 (2%)	1 (1%)		3 (8%)	1 (3%)	
Food Security: Worry*										
<i>Often true</i>	115 (35%)	73 (36%)	38 (33%)	p = 0.65	61 (37%)	27 (31%)	p = 0.61	12 (33%)	11 (37%)	p = 0.91
<i>Sometimes true</i>	123 (38%)	75 (37%)	47 (41%)		61 (37%)	35 (41%)		14 (39%)	12 (40%)	
<i>Often or Sometimes</i>	238 (73%)	148 (73%)	85 (73%)		122 (73%)	62 (72%)		26 (62%)	23 (77%)	
<i>Never true</i>	87 (27%)	54 (27%)	31 (27%)		44 (27%)	24 (28%)		10 (28%)	7 (23%)	
Food Security Not Enough**										
<i>Often true</i>	96 (30%)	67 (33%)	26 (22%)	p = 0.16	57 (34%)	18 (21%)	p = 0.09	10 (28%)	8 (27%)	p = 0.79
<i>Sometimes true</i>	130 (40%)	80 (40%)	49 (42%)		66 (40%)	35 (41%)		14 (39%)	14 (47%)	
<i>Often or Sometimes</i>	226 (70%)	147 (45%)	75 (65%)		123 (74%)	53 (62%)		24 (67%)	22 (73%)	

<i>Never true</i>	99 (43%)	55 (27%)	41 (35%)		43 (26%)	33 (38%)		12 (33%)	8 (27%)	
How long receiving SNAP/EBT										
<i>6 months or less</i>	27 (8%)	15 (7%)	11 (9%)		12 (7%)	9 (10%)		3 (8%)	2 (7%)	
<i>>6 months, but <1 year</i>	51 (16%)	35 (17%)	16 (14%)		29 (17%)	13 (15%)		6 (17%)	2 (10%)	
<i>>1 year, but <2 years</i>	39 (12%)	22 (11%)	16 (14%)		19 (11%)	13 (15%)		3 (8%)	3 (10%)	
<i>>2 years, but <3 years</i>	34 (10%)	19 (10%)	14 (12%)		16 (10%)	10 (12%)		3 (8%)	4 (13%)	
<i>>3 years, but <5 years</i>	36 (11%)	27 (13%)	9 (8%)		22 (13%)	6 (7%)		5 (14%)	3 (10%)	
<i>More than 5 years</i>	131 (40%)	81 (40%)	47 (41%)		65 (39%)	33 (38%)		16 (44%)	14 (47%)	
<i>Not sure / don't know</i>	7 (2%)	3 (1%)	3 (3%)	p = 0.47	3 (2%)	2 (2%)	p = 0.56	0 (0%)	1 (3%)	p = 0.87

* "Worry" = Past 12 months we worried our food would run out before we got money to buy more

** "Not Enough" = Within the past 12 months the food that we bought didn't last

Assessing experiences of activity participation among families with children

Table 3 below includes an expanded description of activity categories and displays whether study participants participated in each SNAP-Ed activity. Thirty-five study participants participated in at least one SNAP-Ed activity and had at least one child in the household under age 18. SNAP-Ed activity participants' responses were quantitatively assessed for stated participation in SNAP-Ed activities including: fruits and vegetable prescriptions, cooking classes, mock farmers markets, kids' farmers markets, peer-to-peer mentoring, and farmers market transportation. The questions related to participation in the six listed SNAP-Ed activities had 35 full responses from participants, except for the cooking classes activity that had 34 recorded responses. The greatest proportion of SNAP-Ed activity participants with children described participating in the fruits and vegetables prescription activity (57%, n=20). Participants described receiving fruits and vegetables prescriptions as coupons or vouchers provided by a healthcare professional or WIC. Cooking classes were the activity with the second most participation (32%, n=11), followed by participation in kids' farmers market activities (20%, n=7), mock farmers markets (11%, n=4), and lastly peer-to-peer programs and farmers market transportation with equal participation rates (9%, n=3).

A large proportion of participants had neither heard of nor participated in the SNAP-Ed activities described in the survey. Approximately 90% of SNAP-Ed activity participants with children stated they had never heard of or participated in mock farmers markets, peer-to-peer mentoring activities, or transportation to farmers markets. Over 70% of the participants indicated they had never heard of or participated in kids' market activities. Just over 60% had never heard of, or participated in cooking classes. Approximately 40% had not heard of or participated in the fruits and vegetables prescriptions activity. Between 3% and 9% of study participants with kids had

heard of other activities, but not participated in them. Overall, these results indicate that SNAP-eligible participants with children could take advantage of a greater number of SNAP-Ed activities.

Table 3: SNAP-Ed Activity Participation for Families with Children

Question 3: How many study participants with children knew of or participated in SNAP-Ed activities?				
<i>SNAP Sample Participants who participated in SNAP activities and have at least one child under 18 in the household</i>				
Activity	Not Heard or Participate	Heard, Not Participate	Yes, Participate	Total
<i>Fruits and Vegetable Prescriptions</i>	14 (40%)	1 (3%)	20 (57%)	35
<i>Cooking Class</i>	21 (62%)	2 (6%)	11 (32%)	34
<i>Mock Farmer's Markets</i>	31 (89%)	0 (0%)	4 (11%)	35
<i>Kids' Market Activity</i>	25 (71%)	3 (9%)	7 (20%)	35
<i>Peer-to-Peer Mentoring</i>	32 (91%)	0 (0%)	3 (9%)	35
<i>Transportation</i>	31 (89%)	1 (3%)	3 (9%)	35
Survey Question Key:				
Fruits and Vegetables Prescriptions: Have you ever heard of or participated in a program where a doctor or healthcare provider 'prescribes' you fruits and vegetables by giving you a coupon that you can use at a grocery store or farmers market?				
Cooking Class: Have you ever heard of or participated in cooking classes or demonstration that teach you how to cook affordable, or healthy meals?				
Mock Farmers Market Activity: Have you ever hear of or participated in farmers market tours, pretend farmers markets, or any activities that help you 'try out' or get comfortable shopping at a market?				
Kids' Farmers Market Activity: Have you ever heard of or participated in any activities that encourage kids to try farmers market produce (other than just samples set out for everyone)?				
Peer-to-Peer Mentoring: Have you ever heard of or participated in a peer-to-peer program where community members help share information with you about how to shop at or use SNAP/EBT at a farmers market?				
Transportation to Farmers Markets: Have you ever heard of or gotten transportation support to get to a farmers market (e.g. shuttles to/from market, mobile market activities, bus tickets)?				

In addition to the quantitative assessment of activity data, qualitative interview data for SNAP-Ed participants with children were analyzed. Among study participants with children who had participated in a SNAP-Ed activity, 21 participants responded to the survey in English. The five emergent themes centered around five topic areas: appreciation of resources, healthy changes in diet or lifestyle, community development, opportunities for activity improvement, and potential interest in future activities.

Theme: Appreciation for Access to Low Cost Healthy Produce

One of the most frequently identified themes was participants' appreciation of the ability to acquire fresh fruits and vegetables as a result of SNAP-Ed related resources and the experience of saving money at the grocery store. This experience of cost savings was often described in relation to the experience of receiving fruit and vegetable coupons or prescriptions. One participant described their positive experience with fruit and vegetable prescriptions as follows:

"I was able to have fresh fruits and vegetables around which was nice. It helps with the expenses. They were just very, very helpful...it helped inspire me to buy fresh." (E1200)

Theme: Healthier Food Choices and Healthier Meals

Other frequently identified theme included the experience of cooking or preparing healthier meals as a result of participating in SNAP-Ed activities and the description of observed or anticipated health benefits as a result of improved nutrition through SNAP-Ed activities. Participants often described developing a greater overall understanding of nutrition and how to cook food in ways to maximize nutritional benefit. Several interviewees also described learning

quick and low cost ways to prepare healthy food that made them less likely to choose unhealthy fast food options for themselves or their families. Describing the benefits of participating in a SNAP-Ed related cooking class, one participant stated:

“It gives you a fresh outlook for ideas when a lot of times you don’t have the money to be elaborate and, you know, to have foods that’s that not like canned foods and we were taught meals that were easy, cheap, and nutritious. And as a mom, that was, the reason, you know.” (E0398)

Theme: Developing Community through SNAP-Ed Activities

Participants described many situations in which the experience of participating in SNAP-Ed activities allowed their children to engage in activities, learn more about local and organic produce, meet new people, try new things, and have an overall more enjoyable experience with food, than they would without SNAP-Ed activities and resources. One participant provided the following description of the benefits experienced by their family through children’s participation:

“It got them hands-on to dice their own meal. Vegetables, you know. Wash them, cut them up, mix them all together, taste them, taste what they made so that got them interested in trying different fruits and veggies. So it’s been very beneficial.” (E0030)

Theme: SNAP or EBT Benefits Challenging to Use

Several participants described difficulty or confusion using SNAP/EBT benefits or about using WIC vouchers. Participants often felt that using WIC benefits at the grocery store was

inconvenient, required too much time, or caused them to feel embarrassed. Other participants were not aware that they could use SNAP/EBT dollars at a farmers market, expressed confusion how much each coupon or voucher was worth at farmers markets or grocery stores, or struggled to identify farmers market vendors that would accept benefits. One participant described challenges in accessing farmers markets that would accept SNAP or EBT coupons for produce:

“...they do expire and that only certain farmers markets will take them. And the ones that do take them where we’re at is over 30 miles away so it was quite a bit of a drive.” (E402)

Another participant described a challenging experience of using SNAP-Ed related benefits at a grocery store:

“...generally, I have no time as it is. So I try to go when there’s not very many people at the store If I’m having to use the coupons or checks. Because I feel bad for the line of people behind me when I have to go through each one of those processes.” (E0098)

Theme: Organizational Improvements Needed in SNAP-Ed Activities

When considering SNAP-Ed farmers market activities, some participants described activity locations as too small or the markets not offering enough food choices to purchase. Others described barriers to fully engaging in activities such as no childcare being provided, or the environment being generally chaotic. Describing the challenges experienced by parents who wish to engage in SNAP-Ed activities such as cooking classes, one participant stated:

“...there was no childcare and sometimes it was uncontrolled chaos. You would get people talking while the instructor was talking. Some people didn’t take it serious” (E0398)

Theme: Interest in Future Activities

In addition to comments related the successes and challenges of activity participation, some participants expressed interest in participating in SNAP-Ed activities that they were not currently involved in. Although fewer participants provided responses in this area than on other topics, many participants indicated that they were generally unaware of the activities and resources potentially available to them. One participant described her interest in engaging in future cooking classes:

“... that there is many much more other things that I can learn in the future and if I hear that they teach the classes I would get involved.” (E0120)

DISCUSSION

The purpose of this study was to assess the population characteristics and descriptions of participation in SNAP-Ed activities of Washington State SNAP recipients in order to identify strengths and opportunities for improvements within current SNAP-Ed related programs and systems. Increasing activity participation is one of the greatest opportunities for improvements in SNAP-Ed programs and systems. 80% of study participants had not participated in any SNAP-Ed activities, indicating a large proportion of SNAP recipients who are missing out on potential opportunities to gain the most financial and informational benefits from their SNAP dollars and other related resources. Although a few study participants with children described specific

shortcomings of the SNAP-Ed programs in which they had participated, most participants described enjoying their experiences with SNAP-Ed activities. As the content of the programs was largely described as impactful and enjoyable, program improvements should perhaps be focused on increasing visibility and interest in SNAP-Ed activities rather than changing program content. Drawing greater participation may involve distribution of relevant SNAP-Ed information in new ways such as social media campaigns or other social marketing techniques that are relevant to specific demographic groups (i.e. based on gender, race/ethnicity, or age).

Results of this study indicate that families with children in Washington State who participated in this study are not experiencing greater food insecurity than participants without children. This may indicate that having children in the household does not play a significant role in a family's experience of food security or insecurity. Additionally, the fact that families with children are not experiencing greater food insecurity than those without children may indicate that federal safety net resources such as SNAP and SNAP-Ed help Washington's families meet the nutritional needs of families and their young children.

Results indicate that families with younger parents or guardians participate in SNAP-Ed activities more often than families with older parents or guardians. Some of the older study participants may either not have children in the household or they are grandparents/guardians raising younger children who are not aware or interested in the resources. Greater SNAP-Ed participation described by participants in younger age brackets may just indicate that participants in this age group were more likely to have children. If these younger participants did have children in the household, they may have been more likely to participate in programs focusing on providing children's resources (i.e. WIC).

Families generally enjoyed the experience of participating in SNAP-Ed activities. One of the most frequently mentioned positive experiences related to SNAP-Ed activity participation was the ability to save money on food, specifically fresh produce. Without the ability to access resources such as prescriptions for fruits and vegetables that may be promoted through SNAP-Ed activities, many lower income families may experience challenges in providing healthful food for their children.

Although one may expect safety net resources and programs to be less accessible in rural areas than urban areas, findings of this present study agree with findings of a 2017 study that indicates no difference between efficacy of reaching potential participants with SNAP-Ed resources in rural and urban areas.¹⁵ However, the results of a 2018 study indicate that families in rural or non-metro areas accessed government food assistance programs more often than families in more metropolitan areas.¹⁶

Limitations

Sample subsets to assess differences in SNAP-Ed activity participation and presence or absence of children in the household are small. Despite the small sample size for groups assessed within this study, the information gathered may help shape greater understanding of program utilization and perceptions surrounding the activities. Paired with quantitative assessments of participant data, qualitative survey questions provided rich information to describe participants' experiences with SNAP-Ed activities.

Survey materials were in Spanish and English, the two most frequently spoken languages by SNAP participants in Washington State. We did not collect surveys in languages that are less

commonly spoken. To overcome potential barriers associated with cost of phone use, participants were offered prepaid minute cards as needed to complete the phone survey.

Results of the qualitative portion of this study to describe the experience of SNAP-Ed participants with children are somewhat limited due to the small sample size and short-response questions. Additionally, the coding and analysis process could benefit from inter-coder reliability testing in addition to intra-coder reliability testing, which was beyond the scope of this project. Additional further analyses of qualitative studies with larger sample sizes may be useful in gaining additional information about populations similar to the one described in this study.

Implications for Future Studies

Future studies are needed to evaluate the experience and behavior of SNAP participants who live in rural areas compared to those who live in urban areas and consider methods to maximize existing food security resources in both areas. Results of this study indicated that Hispanic/Latino SNAP-Ed participants with children in the household reported greater participation in SNAP-Ed activities than participants who identified as Non-Hispanic White and had children in the household. This finding indicates opportunities to further engage with Hispanic/Latino SNAP participants that may be particularly interested in and receptive to the benefits of SNAP-Ed related activities.

When assessing the experiences of families with children who accessed at least one SNAP-Ed related activity, many participants were not familiar with the range of activities supported by SNAP-Ed. Many families participated in WIC and other similar produce coupon or prescription programs, but the other SNAP-Ed activities were underutilized. In order to encourage participation in activities in addition to WIC, perhaps these additional services could be marketed

at locations where WIC vouchers are often acquired and encourage participation from families who already access one resource.

Earlier analyses from the 2016 Washington State SNAP-Ed and Farmers Market Access Evaluation indicate that the sample population represents a higher proportion of persons with disability compared to the general population.⁹ This difference from the general SNAP recipient population in Washington may provide opportunities to identify resources that would be especially useful for individuals with disabilities. Additionally, this difference indicates an opportunity for future studies to explore sampling methods that will provide a more proportional representation of population.

Altogether, information gathered from this study provides a clearer picture of the participants who access SNAP-Ed related activities and those who do not access the activities. The study provides a greater understanding of the ways in which SNAP-Ed resources impact the lives of SNAP recipients in addition to providing insights into potential program improvements. As lower income families with children may utilize their SNAP dollars differently than families without children, these two groups are likely to utilize SNAP-Ed resources in different ways. The greater understanding of SNAP participant and SNAP-Ed participant behaviors provided by this study may support further development of SNAP-Ed resources to serve the needs of families with children and therefore maximize the potential of children from lower income families to have access to nutrition resources in early years.

References

1. SNAP-Ed guiding principles. USDA SNAP-Ed Connection Web site. <https://snaped.fns.usda.gov/sites/default/files/documents/GuidingPrinciples2015.pdf> Published March 29, 2014. Accessed May 5, 2019.
2. Lee-Kwan SH, Moore LV, Blanck HM, Harris DM, Galuska D. Disparities in state-specific adult fruit and vegetable consumption — United States, 2015. *MMWR Morb Mortal Wkly Rep* 2017; 66:1241–1247. doi: <http://dx.doi.org/10.15585/mmwr.mm6645a1>.
3. SNAP-Ed strategies & interventions: An obesity prevention toolkit for states. NCCOR National Collaborative on Childhood Obesity Research Web site. <https://www.nccor.org/downloads/SNAPeDStrategiesAndInterventionsToolkitForStates.pdf>. Published April, 2016. Accessed April 29, 2018.
4. Anzman SL, Rollins BY, Birch LL. Parental influence on children’s early eating environments and obesity risk: Implications for prevention. *Int J Obes*. 2010. 34: 1116-1124. <https://www.nature.com/articles/ijo201043>.
5. Obesity and overweight. World Health Organization Web site. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>. Published February 16, 2018. Accessed May 28, 2019.
6. SNAP-Ed Connection. United States Department of Agriculture SNAP-Ed Connection Web site. <https://snaped.fns.usda.gov/about>. Published April 25, 2018. Accessed April 29, 2018.
7. Singleton CR, Sen B, Affuso O. Disparities in the availability of farmers markets in the United States. *Environ Justice*. 2015; 8(4): 135-143. doi:10.1089/env.2015.0011.
8. Supplemental Nutrition Assistance Program (SNAP). United States Department of Agriculture Food and Nutrition Service Web site. <https://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program>. Published 2019. Accessed May 27, 2019.
9. Walkinshaw LP, Quinn EL, Rocha A, Johnson DB. An evaluation of Washington State SNAP-Ed farmers’ market initiatives and SNAP participant behaviors. *J Nutr Educ Behav*. 2018; 50(6): 536–546. <https://doi.org/10.1016/j.jneb.2018.01.003>
10. Supplemental Nutrition Assistance Program Education (SNAP-Ed). United States Department of Agriculture Food and Nutrition Service Web site. <https://www.fns.usda.gov/snap/SNAP-Ed>. Published 2013. Accessed May 16, 2019.
11. Implementation of the Healthy, Hunger-Free Kids Act of 2010, SNAP Education Provision. United States Department of Agriculture Food and Nutrition Service Web site.

<https://www.fns.usda.gov/implementation-healthy-hunger-free-kids-act-2010-snap-education-provision>. Published 2013. Accessed May 20, 2019.

12. Freedman DA, Flocke S, Shon E, Matlack K, Trapl E, Punam O, Osborne A, Borawski E. Farmers' market use patterns among supplemental nutrition assistance program recipients with high access to farmers' markets. *J Nutr Educ Behav*. 2017; 49(5): 397-404. doi: <https://doi.org/10.1016/j.jneb.2017.01.007>.
13. Grembowski D. Measurement and data collection. In: *The practice of health program evaluation*. 2nd ed. Thousand Oaks, CA: SAGE Publications, Inc; 2016.
14. T Edwards, Qualitative research methods. Lecture presented at: Magnuson Health Sciences Center. January 26, 2018. Seattle, Washington.
15. River RL, Dunne J, Moulding MK, et al. Exploring the association of urban or rural county status an environmental, nutrition- and lifestyle-related resources with the efficacy of SNAP-Ed (Supplemental Nutrition Assistance Program-Education) to improve food security. *Public Health Nutr*. 2017; 21(5): 957-966. doi:10.1017/S1368980017003391.
16. Nielsen RB, Seay MC, Wilmarth MJ. The receipt of government food assistance: Differences between metro and non-metro households. *J Fam Econ Iss*. 2018; 38: 117-131. DOI 10.1007/s10834-017-9528-5.

Activity Participation

Activity Participation

I have a list of activities and classes having to do with food, cooking, nutrition, and farmers markets. We would like to know if you have heard of or participated in any of them.

Have you ever heard of or participated in a program where a doctor or health care provider 'prescribes' you fruits and vegetables by giving you a coupon that you can use at a grocery store or farmers market?

- No
- Yes, I have heard of it but not participated
- Yes, I have participated in it
- Refused

How did you hear about this activity?

- Flyer, brochure, or other promotional handout
- Poster at farmers market
- Subway or bus advertisement
- Newspaper
- Web
- Mailing received at home
- Other people (family, friends, etc.)
- From a local community organization (i.e. health/community center, church, food pantry, etc.)
- Saw others participating
- WIC clinic
- Hospital
- Food bank
- Other
- Not sure / don't know
- Refused

Other:

Where did you participate in this activity?

- Farmers market
- School
- Library
- WIC office
- Food bank
- Other
- Not sure / don't know
- Refused

Other:

How often do you participate in this activity?

- Every week
- A few times each month
- Once a month
- A few times each year
- Once a year
- One time only
- Not sure / don't know
- Refused

What, if anything, do you LIKE about this activity?:

What, if anything, do you DISLIKE about this activity?:

[INTERVIEWER, use this probe IF participant has hard time describing likes/dislikes]

Can you describe what's it like for you when you participate in this activity?

What, if anything, did you get out of this activity?

[INTERVIEWER, use these probes if needed]

Did you learn anything in this activity? Did this activity help you with anything?

Does / did this activity change the food you buy?

- No change
- Some change
- A big change

How has it changed the food you buy?

Does / did this activity change the way you cook your food?

- No change
- Some change
- A big change

How has it changed the way you cook?

Have you ever heard of or participated in cooking classes or demonstration that teach you how to cook affordable, or healthy meals?

- No
- Yes, I have heard of it but not participated
- Yes, I have participated in it
- Refused

How did you hear about this activity?

- Flyer, brochure, or other promotional handout
- Poster at farmers market
- Subway or bus advertisement
- Newspaper
- Web
- Mailing received at home
- Other people (family, friends, etc.)
- From a local community organization (i.e. health/community center, church, food pantry, etc.)
- Saw others participating
- WIC clinic
- Hospital
- Food bank
- Other
- Not sure / don't know
- Refused

Other:

Where did you participate in this activity?

- Farmers market
- School
- Library
- WIC office
- Food bank
- Other
- Not sure / don't know
- Refused

Other:

How often do you participate in this activity?

- Every week
- A few times each month
- Once a month
- A few times each year
- Once a year
- One time only
- Not sure / don't know
- Refused

What, if anything, do you LIKE about this activity?:

What, if anything, do you DISLIKE about this activity?:

[INTERVIEWER, use this probe IF participant has hard time describing likes/dislikes]

Can you describe what's it like for you when you participate in this activity?

What, if anything, did you get out of this activity?

[INTERVIEWER, use these probes if needed] Did you learn anything in this activity? Did this activity help you with anything?

Does / did this activity change the food you buy?

- No change
- Some change
- A big change

How has it changed the food you buy?

Does / did this activity change the way you cook your food?

- No change
- Some change
- A big change

How has it changed the way you cook?

Have you ever heard of or participated in farmers market tours, pretend farmers markets, or any activities that help you 'try out' or get comfortable shopping at a market?

- No
- Yes, I have heard of it but not participated
- Yes, I have participated in it
- Refused

How did you hear about this activity?

- Flyer, brochure, or other promotional handout
- Poster at farmers market
- Subway or bus advertisement
- Newspaper
- Web
- Mailing received at home
- Other people (family, friends, etc.)
- From a local community organization (i.e. health/community center, church, food pantry, etc.)
- Saw others participating
- WIC clinic
- Hospital
- Food bank
- Other
- Not sure / don't know
- Refused

Other:

Where did you participate in this activity?

- Farmers market
- School
- Library
- WIC office
- Food bank
- Other
- Not sure / don't know
- Refused

Other:

How often do you participate in this activity?

- Every week
- A few times each month
- Once a month
- A few times each year
- Once a year
- One time only
- Not sure / don't know
- Refused

What, if anything, do you LIKE about this activity?:

What, if anything, do you DISLIKE about this activity?:

[INTERVIEWER, use this probe IF participant has hard time describing likes/dislikes]

Can you describe what's it like for you when you participate in this activity?

What, if anything, did you get out of this activity?

[INTERVIEWER, use these probes if needed]

Did you learn anything in this activity? Did this activity help you with anything?

Does / did this activity change the food you buy?

- No change
- Some change
- A big change

How has it changed the food you buy?

Does / did this activity change the way you cook your food?

-
- No change
 - Some change
 - A big change

How has it changed the way you cook?

Have you ever heard of or participated in any activities that encourage kids to try farmers market produce (other than just samples set out for everyone)?

-
- No
 - Yes, I have heard of it but not participated
 - Yes, I have participated in it
 - Refused

How did you hear about this activity?

- Flyer, brochure, or other promotional handout
- Poster at farmers market
- Subway or bus advertisement
- Newspaper
- Web
- Mailing received at home
- Other people (family, friends, etc.)
- From a local community organization (i.e. health/community center, church, food pantry, etc.)
- Saw others participating
- WIC clinic
- Hospital
- Food bank
- Other
- Not sure / don't know
- Refused

Other:

Where did you participate in this activity?

-
- Farmers market
 - School
 - Library
 - WIC office
 - Food bank
 - Other
 - Not sure / don't know
 - Refused

Other:

How often do you participate in this activity?

-
- Every week
 - A few times each month
 - Once a month
 - A few times each year
 - Once a year
 - One time only
 - Not sure / don't know
 - Refused

What, if anything, do you LIKE about this activity?:

What, if anything, do you DISLIKE about this activity?:

[INTERVIEWER, use this probe IF participant has hard time describing likes/dislikes]

Can you describe what's it like for you when you participate in this activity?

What, if anything, did you get out of this activity?

[INTERVIEWER, use these probes if needed]

Did you learn anything in this activity? Did this activity help you with anything?

Does / did this activity change the food you buy?

- No change
 Some change
 A big change

How has it changed the food you buy?

Does / did this activity change the way you cook your food?

- No change
 Some change
 A big change

How has it changed the way you cook?

Have you ever heard of or participated in a peer-to-peer program where community members help share information with you about how to shop at or use SNAP/EBT at a farmers market?

- No
 Yes, I have heard of it but not participated
 Yes, I have participated in it
 Refused

How did you hear about this activity?

- Flyer, brochure, or other promotional handout
 Poster at farmers market
 Subway or bus advertisement
 Newspaper
 Web
 Mailing received at home
 Other people (family, friends, etc.)
 From a local community organization (i.e. health/community center, church, food pantry, etc.)
 Saw others participating
 WIC clinic
 Hospital
 Food bank
 Other
 Not sure / don't know
 Refused

Other:

Where did you participate in this activity?

- Farmers market
 School
 Library
 WIC office
 Food bank
 Other
 Not sure / don't know
 Refused

Other:

How often do you participate in this activity?

- Every week
- A few times each month
- Once a month
- A few times each year
- Once a year
- One time only
- Not sure / don't know
- Refused

What, if anything, do you LIKE about this activity?:

What, if anything, do you DISLIKE about this activity?:

[INTERVIEWER, use this probe IF participant has hard time describing likes/dislikes]

Can you describe what's it like for you when you participate in this activity?

What, if anything, did you get out of this activity?

[INTERVIEWER, use these probes if needed]

Did you learn anything in this activity? Did this activity help you with anything?

Does / did this activity change the food you buy?

- No change
- Some change
- A big change

How has it changed the food you buy?

Does / did this activity change the way you cook your food?

- No change
- Some change
- A big change

How has it changed the way you cook?

Have you ever heard of or gotten transportation support to get to a farmers market (e.g., shuttles to/from market, mobile market activities, bus tickets)?

- No
- Yes, I have heard of it but not participated
- Yes, I have participated in it
- Refused

How did you hear about this transportation support?

- Flyer, brochure, or other promotional handout
- Poster at farmers market
- Subway or bus advertisement
- Newspaper
- Web
- Mailing received at home
- Other people (family, friends, etc.)
- From a local community organization (i.e. health/community center, church, food pantry, etc.)
- Saw others participating
- WIC clinic
- Hospital
- Food bank
- Other
- Not sure / don't know
- Refused

Other:

Where did you take this transportation to the farmers market from?

-
- Farmers market
 - School
 - Library
 - WIC office
 - Food bank
 - Other
 - Not sure / don't know
 - Refused

Other:

How often do you take this transportation to the farmers market?

-
- Every week
 - A few times each month
 - Once a month
 - A few times each year
 - Once a year
 - One time only
 - Not sure / don't know
 - Refused

What, if anything, do you LIKE about this activity?:

What, if anything, do you DISLIKE about this activity?:

[INTERVIEWER, use this probe IF participant has hard time describing likes/dislikes]

Can you describe what's it like for you when you participate in this activity?

What, if anything, did you get out of this activity?

[INTERVIEWER, use these probes if needed]

Did you learn anything in this activity? Did this activity help you with anything?

Does / did this transportation change the food you buy?

-
-
-
- No change
 - Some change
 - A big change

How has this transportation changed the food you buy?

Appendix 2: Full Table 1

Research Question 1: Among a sample of Washington SNAP participants, how are participants who engage in SNAP-Ed activities similar to or different from than those who are eligible for SNAP-Ed activities but do not engage?

**Note: Table excludes cases with non-response or missing responses to any survey sections

Table 1: Examining Association of Demographics and SNAP-Ed Participation

Characteristic	SNAP Participants (n=325)	SNAP-Ed Activity Non- Participants (n=259)	SNAP-Ed Activity Participant (n=66)	p-value
Residence				
<i>urban</i>	128 (39%)	100 (39%)	28 (42%)	p =0 .57
<i>rural</i>	197 (61%)	159 (61%)	38 (58%)	
Language Spoken in Home				
<i>English</i>	289 (89%)	231 (89%)	58 (88%)	p =0 .762
<i>Spanish</i>	36 (11%)	28 (11%)	8 (12%)	
Racial/ethnic identification				
<i>Nonhispanic White</i>	187 (58%)	160 (62%)	27 (41%)	p < 0.001
<i>Nonhispanic Black or African American</i>	28 (9%)	19 (7%)	9 (14%)	
<i>Nonhispanic Asian</i>	7 (2%)	6 (2%)	1 (2%)	
<i>Nonhispanic Native American</i>	7 (2%)	7 (3%)	0 (0%)	
<i>Nonhispanic Native Hawaiian, PI, AN</i>	3 (1%)	2 (1%)	1 (2%)	
<i>Other</i>	28 (9%)	14 (5%)	14 (21%)	
<i>Hispanic or Latino</i>	65 (20%)	51 (20%)	14 (21%)	
Food Security: Worry*				
<i>Often true</i>	115 (35%)	92 (36%)	23 (35%)	p = 0.96
<i>Sometimes true</i>	123 (38%)	97 (37%)	26 (39%)	
<i>(Often or Sometimes)</i>	238 (73%)	189 (73%)	57 (73%)	
<i>Never true</i>	87 (27%)	70 (27%)	17 (26%)	
Food Security Not Enough**				
<i>Often true</i>	96 (30%)	78 (30%)	18 (27%)	p=0.88
<i>Sometimes true</i>	130 (40%)	102 (39%)	28 (42%)	
<i>(Often or Sometimes)</i>	262 (66%)	180 (57%)	46 (70%)	
<i>Never true</i>	99 (30%)	79 (31%)	20 (30%)	

<i>Secure on either measure</i>	68 (21%)	53 (20%)	15 (23%)	p=0.69
<i>Secure on both measures</i>	118 (36%)	96 (37%)	22 (33%)	p=0.57
Gender				
<i>Male</i>	97 (30%)	83 (32%)	14 (21%)	p=0.09
<i>Female</i>	228 (70%)	176 (68%)	52 (79%)	
Age				
18-30	62 (19%)	45 (17%)	17 (26%)	p=0.02
31-51	117 (36%)	87 (34%)	30 (45%)	
51-65	85 (26%)	72 (28%)	13 (20%)	
65+	61 (19%)	55 (21%)	6 (9%)	
Employment Status				
<i>Not employed</i>	129 (40%)	104 (40%)	25 (38%)	p=0.9
<i>Full time</i>	34 (10%)	26 (10%)	8 (12%)	
<i>Part time</i>	39 (12%)	29 (11%)	10 (15%)	
<i>Seasonal / occasional</i>	7 (2%)	6 (2%)	1 (2%)	
<i>Retired</i>	44 (14%)	35 (14%)	9 (14%)	
<i>Disability</i>	72 (22%)	59 (23%)	13 (20%)	
Monthly household SNAP/EBT Benefits				
<i>Mean Household Monthly EBT\$</i>	\$212.44 (sd=173.38)	\$205.42 (sd=166.58)	\$239.96 (sd=196.78)	
Annual Household Income				
<i>Less than \$15,000</i>	229 (70%)	182 (70%)	47 (71%)	p=1.0
<i>\$15,000 to \$24,000</i>	71 (22%)	57 (22%)	14 (21%)	
<i>\$25,000 to 34,999</i>	19 (6%)	15 (6%)	4 (6%)	
<i>More than \$35,000</i>	6 (2%)	5 (2%)	1 (2%)	

Appendix 3: Full Table 2

Research Question 2: How do the characteristics of those who participate in SNAP-Ed activities and have children compare with participants that do not have children? Also, how does food security status and other demographic characteristics differ between SNAP participants with children and those without children?										
Table 2										
Note: "children" or "no children" indicates presence or absence of children in the household										
**Note: Table excludes cases with non-response or missing responses to any survey sections										
	Total Sample	All Survey Participants			SNAP-Ed Non-Participants			SNAP-Ed Participants		
Characteristic	SNAP participant survey sample (n=325)	SNAP Participant survey sample without children (n=202)	SNAP Participant survey sample with children (n=116)	p-value	SNAP-Ed Non-Participant without children, n=166	SNAP-Ed Non-Participant with children, n=86	p-value	SNAP-Ed Participants without children, n=36	SNAP-Ed Participants with children, n=30	p-value
Residence										
<i>urban</i>	128 (39%)	76 (38%)	51 (44%)	p = 0.21	62 (37%)	37 (43%)	p=0.28	14 (39%)	14 (47%)	p=0.52
<i>rural</i>	197 (61%)	126 (62%)	65 (56%)		104 (63%)	49 (57%)		22 (61%)	16 (53%)	
Language Spoken in Home										
<i>English</i>	289 (89%)	186 (92%)	96 (83%)	p=0.02	151 (91%)	73 (85%)	p=0.22	35 (97%)	23 (77%)	p=0.01
<i>Spanish</i>	36 (11%)	16 (8%)	20 (17%)		15 (9%)	13 (15%)		1 (3%)	7 (23%)	
Racial/ethnic identification										
<i>Nonhispanic White</i>	187 (58%)	122 (60%)	59 (51%)	p=0.24	104 (63%)	50 (28%)	p=0.76	18 (50%)	9 (30%)	p=0.02
<i>Nonhispanic Black or African American</i>	28 (9%)	18 (9%)	10 (9%)		12 (7%)	7 (8%)		6 (17%)	3 (10%)	
<i>Nonhispanic Asian</i>	7 (2%)	6 (3%)	1 (1%)		5 (3%)	1 (1%)		1 (3%)	0 (0%)	
<i>Nonhispanic Native American</i>	7 (2%)	3 (1%)	4 (4%)		3 (1%)	4 (5%)		0 (0%)	0 (0%)	
<i>Nonhispanic Native Hawaiian, PI, AN</i>	3 (1%)	3 (1%)	0 (0%)		2 (1%)	0 (0%)		1 (3%)	0 (0%)	
<i>Other</i>	28 (9%)	19 (9%)	9 (8%)		11 (7%)	3 (3%)		8 (22%)	6 (20%)	
<i>Hispanic or Latino</i>	65 (20%)	31 (15%)	33 (29%)		29 (17%)	21 (24%)		2 (6%)	12 (40%)	
Highest Education received										
<i>some high school or less</i>	48 (15%)	26 (13%)	19 (16%)	p=0.24	23 (14%)	13 (15%)	p=0.37	3 (8%)	6 (20%)	p=0.48
<i>high school</i>	93 (29%)	55 (27%)	36 (31%)		47 (28%)	27 (31%)		8 (22%)	9 (30%)	
<i>some college</i>	116 (36%)	80 (40%)	34 (29%)		66 (40%)	26 (30%)		14 (39%)	8 (27%)	
<i>college</i>	59 (18%)	34 (17%)	25 (22%)		26 (16%)	19 (22%)		8 (22%)	6 (20%)	
<i>post-college (e.g., MS, PhD)</i>	9 (3%)	7 (3%)	2 (2%)		4 (2%)	1 (1%)		3 (8%)	1 (3%)	
Food Security: Worry*										
<i>Often true</i>	115 (35%)	73 (36%)	38 (33%)	p = 0.65	61 (37%)	27 (31%)	p=0.61	12 (33%)	11 (37%)	p=0.91
<i>Sometimes true</i>	123	75 (37%)	47 (41%)		61 (37%)	35 (41%)		14 (39%)	12 (40%)	

<i>Less than \$15,000</i>	229 (70%)	156 (77%)	68 (59%)	p=0.00	127 (77%)	50 (58%)	p=0.00 3	29 (81%)	18 (60%)	p=0.07
<i>\$15,000 to \$24,000</i>	71 (22%)	40 (20%)	30 (26%)		33 (20%)	23 (27%)		7 (20%)	7 (23%)	
<i>\$25,000 to 34,999</i>	19 (6%)	5 (2%)	14 (12%)		5 (3%)	10 (12%)		0 (0%)	4 (13%)	
<i>More than \$35,000</i>	6 (2%)	1 (1%)	4 (3%)		1 (1%)	3 (3%)		0 (0%)	1 (3%)	
How long receiving SNAP/EBT										
<i>6 months or less</i>	27 (8%)	15 (7%)	11 (9%)	p=0.47	12 (7%)	9 (10%)	p=0.56	3 (8%)	2 (7%)	p=0.87
<i>>6 months, but <1 year</i>	51 (16%)	35 (17%)	16 (14%)		29 (17%)	13 (15%)		6 (17%)	2 (10%)	
<i>>1 year, but <2 years</i>	39 (12%)	22 (11%)	16 (14%)		19 (11%)	13 (15%)		3 (8%)	3 (10%)	
<i>>2 years, but <3 years</i>	34 (10%)	19 (10%)	14 (12%)		16 (10%)	10 (12%)		3 (8%)	4 (13%)	
<i>>3 years, but <5 years</i>	36 (11%)	27 (13%)	9 (8%)		22 (13%)	6 (7%)		5 (14%)	3 (10%)	
<i>More than 5 years</i>	131 (40%)	81 (40%)	47 (41%)		65 (39%)	33 (38%)		16 (44%)	14 (47%)	
<i>Not sure / don't know</i>	7 (2%)	3 (1%)	3 (3%)		p=0.47	3 (2%)		2 (2%)	p=0.56	

* "Worry" = Past 12 months we worried our food would run out before we got money to buy more

** "Not Enough" = Within the past 12 months the food that we bought didn't last

Appendix 4: Intracoder Reliability Testing

Code Match Tracking

<u>Interview</u>	<u>First coding</u>	<u>Second coding</u>	<u>Matches</u>
E0021	9	11	9
E0030	23	21	13
E0098	10	10	8
E0120	9	10	8
E0123	15	16	13
E0178	5	5	4
E0315	1	1	1
E0320	3	3	1
E0378	3	3	2
E0398	9	9	8
E0402	5	5	5
E0725	5	7	3
E1200	2	2	2
E1487	2	2	2
E1558	4	4	4
E1591	8	7	4
E1598	5	4	4
E1634	7	9	5
E1707	2	1	1
E1735	3	3	3
E8124	2	2	2
E1891	2	5	2
E2172	3	5	3
E2215	1	1	1
Totals	138	146	108

Coder Reliability, % Agreement Calculation

Step 1	Number of Code Matches	
	108	
Step 2	Larger number of code applications between versions	
	146	
Step 3	% Agreement	
	108/146 = 73.98	
	74% agreement	