The SNAP-Ed Evaluation Framework: Nationwide Uptake and Implications for Nutrition Education Practice, Policy, and Research

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ABSTRACT

Objective: Provide the first baseline census of *Supplemental Nutrition Assistance Program Education* (SNAP-Ed) state implementing agencies' (SIAs) intent to use and evaluate 51 indicators described in the SNAP-Ed Evaluation Framework.

Methods: A cross-sectional study design was used to administer electronic surveys to 124 SIAs who received SNAP-Ed funding in 2017. Descriptive statistics were used to analyze the results.

Results: Of 51 indicators, SIAs reported their intent to impact an average of 19 indicators and evaluate an average of 12. More SIAs reported the intention to impact indicators at the individual (59%) and environmental levels (48%), compared with the sectors of influence (20%) and population levels (30%) of the framework. In addition, more SIAs intended to impact and evaluate short- or medium-term indicators, compared with long-term indicators.

Conclusions and Implications: These findings illustrate the progress made toward aggregating metrics to measure the collective impact of SNAP-Ed.

Key Words: food security, evaluation, nutrition education, SNAP-Ed, policy (*J Nutr Educ Behav*. 2021;53:336–342.)

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INTRODUCTION

Supplemental Nutrition Assistance Program Education

Supplemental Nutrition Assistance Program Education (SNAP-Ed) is funded through the *Nutrition Education and Obesity Prevention Grant Program* in the Healthy Hunger-Free Kids Act of 2010.¹ *Supplemental Nutrition Assistance Program Education* is charged

with improving the likelihood that people with incomes at or below 185% of the federal poverty level, especially those residing in communities with a significant low-income population, will make healthy food choices within a limited budget and choose physically active lifestyles consistent with the Dietary Guidelines for Americans.^{1,2} This includes at least 25% of the US population or well over

80 million people.³ The SNAP state agencies in all 50 states, the District of Columbia, Guam, and the US Virgin Islands, participate in SNAP-Ed by contracting with 136 SNAP-Ed state implementing agencies (SIAs) to conduct health promotion programming. Many SIAs subcontract with different types of public, nonprofit, and business organizations to provide direct services. Collectively, hundreds of interventions tailored to low-income Americans of different age, race/ethnicity, and linguistic segments are delivered each year in compliance with the approved state plans of the Food and Nutrition Service (FNS), an agency of the US Department of Agriculture (USDA).¹

Nationwide, SNAP-Ed SIAs reported conducting activities in more than 60,000 low-resource community locations in 2017 (USDA Education and Administration Reporting System, personal communications, 2017). *Supplemental Nutrition Assistance Program Education* programming reached 3.8 million people through direct education (interventions in which a participant is actively engaged in the

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learning process with an educator and/or interactive media) in the fiscal year 2018, the most of any USDA nutrition education program.⁴ At \$404 million in 2017, SNAP-Ed is second only to the *Special Supplemental Program for Women, Infants and Children* in its funding for nutrition education.⁴

Development of SNAP-Ed Evaluation Framework

Because SNAP-Ed is designed to be flexible and state-driven to meet the specific needs of limited-resource audiences and communities, measuring SNAP-Ed's collective impact has historically been challenging.⁴ Starting in 2013, a selected group of states, FNS staff, and other experts worked together through the National Collaborative on Childhood Obesity Research to develop the *SNAP-Ed Evaluation Framework* (Framework); it was introduced nationwide with its companion interactive *Interpretive Guide* for the 2017 federal fiscal year.^{5,6} The Framework was designed to provide clear outcome indicators for each level of the Social Ecological Model,⁷ with the addition of the population

level, and help SIAs track large-scale change over time. Figure 1 shows the 51 Framework outcomes from which SIAs can choose, based on their state's needs assessments, priorities, and resources. An accompanying Interpretive Guide is designed as a living document to help program planners link each outcome indicator with specific measures and evaluation tools.^{5,6} In 2017, FNS specified 7 priority indicators that all SIAs were encouraged to address in the first year of Framework implementation. These priority indicators included the following: individual-level indicators (medium term 1 [MT1]: healthy eating, medium term 2 [MT2]: food resource management, and medium term 3 [MT3]: physical activity and reduced sedentary behavior); environmental setting indicator (short term 7 [ST7]: organizational partnerships); sector of influence indicator (short term 8 [ST8]: multisector partnerships and planning); and population results indicator (result 2 [R2]: fruits and vegetables).

The 2017 SNAP-Ed Census (Census) was conducted to quantify the initial uptake of the Framework and showcase the breadth and depth of

SNAP-Ed programming and evaluation activity across the country. It was conducted as a collaboration of the Association of SNAP Nutrition Education Administrators (ASNNA), the University of Colorado Denver (Rocky Mountain Prevention Research Center), and the Mountain Plains Regional Office of USDA's FNS. This study was determined to be not human subject research by the Colorado Multiple Institutional Review Board (protocol no. 16-2045). The primary objective of the study was to obtain baseline information about SIAs' intent to use the Framework to impact and evaluate the 51 outcome indicators.

METHODS

Participants

The target population for the Census was the 136 unique SIAs delivering nutrition education and obesity prevention programming with federal SNAP-Ed funding. Targeted SIAs were located in all 50 states, the District of Columbia, Guam, and the US Virgin Islands. Of the targeted SIAs, 124

Figure 1. Supplemental Nutrition Assistance Program Education (SNAP-Ed) Evaluation Framework: nutrition, physical activity, and obesity prevention indicators.⁵

participated in the Census, with a response rate of 91%.

Procedure

The names and email addresses for SIA SNAP-Ed directors were identified in the summer of 2016 in collaboration with FNS's 7 SNAP-Ed Regional Coordinators and the SNAP state agencies. The FNS Regional Coordinators and state agency staff assisted ASNNA by encouraging SIAs to participate. The SIA designees were instructed to select the person most knowledgeable about programming and evaluation to complete the Census, to use their federal fiscal year 2017 state plan, which became effective on October 1, 2016, to inform their responses, and to include the work of any local-, regional-, or state-level subcontractors. State implementing agencies received an email with a link to REDCap (Vanderbilt University, Nashville, TN)—a secure, web-based data capture tool⁸ hosted at the University of Colorado Denver for the Census. The data collection procedure then followed the Tailored Design Method.⁹ Once a respondent completed the Census, a thank you note was sent immediately. For others, reminder emails were sent once a week for up to 3 subsequent weeks. If no response was received after 4 attempts, personal calls were made by peers in ASNNA offering help and urging their response. Data collection ended in late October, 2016.

Instrument

The Census survey instrument was adapted from a poll used in the FNS Mountain Plains Region to inform a meeting of its 10 states in early summer of 2016. By late summer, a team from ASNNA expanded the poll into a census for nationwide administration. The instrument was designed to retrieve information about the planned use of the new Framework and its Interpretive Guide. It was organized to include all 51 indicators in the 4 spheres of influence of the Framework: individual, environmental settings, sectors of influence, and population results. The Census asked about the SIA's intent to impact and

to evaluate each outcome indicator. The response options for questions included: yes, no, and I don't know. Definitions of each indicator referenced the Interpretive Guide. Additional questions asked about SIAs' characteristics, use of the Framework and Interpretive Guide, and training and technical needs (not included in this article). There was a total of 115 questions on the survey instrument. The Census instrument was pilot-tested before it was administered nationally.

Data Analysis

All quantitative data were exported from REDCap into SPSS (version 24.0, IBM Corp, Armonk, NY, 2016) for analysis. Basic descriptive statistics (ie, frequencies, means, and SDs) were computed. In addition, the mean percent gap in SIAs' intent to impact and evaluate each indicator was calculated by subtracting the percent of SIAs evaluating each indicator from the percent of SIAs intending to impact each indicator to get a percentage point difference for each indicator (gap in evaluation). This value was then averaged across all 51 indicators (results included in the Results section).

RESULTS

SIA Characteristics

At least 1 SIA response was received from every state and the District of Columbia. Results do not include the territories of Guam, the US Virgin Islands, or 4 of the 7 Indian Tribal Organizations (ITOs) serving as SIAs. On investigation, it was learned that the 4 missing ITOs were awarded SNAP-Ed funding immediately before the administration of the Census, possibly hindering their response. In total, 75 of 85 SIAs (88%) located in the 28 states that ranked in the top 10 highest for the prevalence of obesity, food insecurity, and/or proportion of low-income residents responded to the Census.

The majority of SIAs were university-based (54%); 41% worked in USDA Cooperative Extension agencies at land grant universities. Another 23% were from nonprofit

organizations (eg, faith-based, public health, or food banks), about 15% from state or local governments (especially public health departments), and about 6% from ITOs. Most had delivered SNAP-Ed for many years. Nearly two-thirds began offering SNAP-Ed before 2011 when they were required to identify *state share* that would qualify for Federal Financial Participation (matching dollars). The remaining 29% entered after 2011 when grants replaced state match, and the scope of activities expanded from direct education and social marketing to include multi-level and public health approaches.

Intent to Impact and Evaluate Framework Indicators

Most of the SIAs targeted the priority indicators from the individual and environmental settings spheres; only half targeted priority indicators from the sectors of influence and population spheres. Considering all 51 indicators, SIAs reported intending to impact an average of 19 indicators (SD = 11 indicators), of which they planned to evaluate an average of 12 indicators (SD = 7 indicators). For the 51 indicators, the mean gap was 15% between intent to impact and evaluate (range 3%–30%).

In general, wide variability was seen in the intent to impact compared with the planned evaluation of Framework indicators (Table). More SIAs intended to impact indicators closer to the inner spheres of influence in the Social Ecological Model: individual level (mean = 59%; SD = 22%) and environmental settings level (mean = 48%; SD = 23%). Close to one-third of SIAs intended to impact outcomes leading to population results (mean = 30%; SD = 11%) with the fewest agencies working at the sectors of influence level (mean = 20%; SD = 12%). Most SIAs intended to address short-term indicators (mean = 63%; SD = 14%) and/or medium-term indicators (mean = 46%; SD = 30%), whereas a quarter planned for long-term indicators (mean = 26%; SD = 15%). For all indicators in each sphere and time frame of the Framework, there was a gap between the intent to evaluate and the indicators that they planned

Table. Mean Percentage of SIAs Intending to Impact and Evaluate Indicators Across the Various Sections of the Framework

Section of the Framework	Mean % of SIAs Intending to Impact Indicators Across all Indicators in Section (SD), n = 124	Mean % of SIAs Intending to Evaluate Indicators Across all Indicators in Section (SD), n = 124
Individual level	59 (22)	41 (29)
Environmental setting level	48 (23)	35 (19)
Sectors of influence level	20 (12)	10 (8)
Population level	30 (11)	14 (7)
Short-term	63 (14)	44 (17)
Medium-term	46 (30)	35 (30)
Long-term	26 (15)	13 (9)

SIA indicates state implementing agency.

to impact (gap range = 4%–24%; mean gap = 14%).

Figure 2 displays results for each of the 4 spheres of influence in the Framework. For the individual, environmental settings, and sectors of influence spheres, indicators generally move from short- to long-term. The percentage of SIAs that intended to impact an indicator is shown in blue, whereas orange bars represent the percentage of SIAs that planned to evaluate the indicator.

Individual Level

Individual behavior change outcomes are generally defined as pre-post changes resulting from direct education, often as series-based classes. Long-term outcomes are defined as those persisting for 6 months or more.^{5,6} Figure 2 shows that the percent of SIAs intending to impact the indicators ranged from 22% to 95%, and intent to evaluate ranged from 3% to 90%. Most intended to work on medium-

term individual behavior change indicators, ranging from 75% to 95% of all SIAs planning to impact and 65% to 90% planning to evaluate them. Very high percentages of SIAs intended to impact and evaluate the 3 medium-term indicators named by FNS as priority indicators: healthy eating (impact = 95%, evaluate = 90%), physical activity and sedentary behavior (impact = 79%, evaluate = 70%), and food resource management (impact = 76%, evaluate = 65%).

Figure 2. Percentage of SIAs that intend to impact and evaluate each indicator in the Framework (n = 124). LT indicates long-term (effectiveness and maintenance); MT, medium-term (behavior changes); SIA, state implementing agency; ST, short-term (readiness and capacity). *Supplemental Nutrition Assistance Program Education (SNAP-Ed) priority indicator.

Environmental Settings Level

In this sphere, outcomes are generally defined as the initial adoption of policy, systems or environmental changes in a wide variety of low-resource/high-need settings,^{5,6} followed by longer-term implementation. These outcomes aim to make it easier for people to eat healthily or be active wherever they eat, learn, live, play, shop, or work. Policy, systems, or environmental outcomes are generally aligned with authoritative recommendations for different institutions and verified through objective assessments, such as the Alliance for a Healthier Generation's Scorecard or the Nutrition and Physical Activity Self-Assessment for Child Care.⁵ A lower percentage of SIAs reported intending to impact and evaluate outcomes in this sphere than outcomes for individuals. Very high percentages of SIAs reported intending to impact and evaluate FNS's 2 priority indicators for this sphere: the medium-term nutrition supports (impact = 86%, evaluate = 70%) and short-term partnerships (impact = 81%, evaluate = 57%).

Sectors of Influence Level

Outcomes in this sphere generally involve larger-scale, complex, and difficult changes that result only through collaboration among public, nonprofit, and business stakeholders. The purpose is to stimulate and then sustain positive change by entire jurisdictions and organizations in different sectors to help overcome often-longstanding disparities in healthy eating and physical activity.^{5,6} The percent of SIAs intending to impact outcomes in this sphere ranged from 6% to 49% and from 2% to 28% for intent to evaluate. Once again, the largest percentage of SIAs reported attending to the FNS priority indicator for this sphere, multisector partnerships and planning, with 49% intending to impact and 28% planning to evaluate this indicator. About one-third of SIAs planned to impact outcomes related to social marketing and agriculture-related and food system outcomes.

Population Level

Population-level outcomes are intended to capture changes in behavior among targeted SNAP-Ed population segments as associated with the combined effects and dosage of individual, environmental, and multisector interventions. The intention is to compare dietary and health changes between low-income audiences and the general population and to track reductions in disparities over time. Measurement depends on the availability of national/statewide data sets against which rates among SNAP-Ed population segments and other groups can be compared. When appropriate data sets are not available, indicators are treated as developmental. More population-level indicators were intended to be impacted and evaluated compared with indicators of the sectors of influence (impact range = 10%–48%; evaluate range = 5%–28%). The largest percentage of SIAs intended to impact and evaluate the FNS priority indicator in this section, fruits and vegetables (impact = 48%, evaluate = 28%). About one-third of SIAs reported planning to impact 4 other population-wide outcomes: beverages, physical activity and reduced sedentary behavior, dairy, and food insecurity.

DISCUSSION

The published and gray literature provide abundant evidence of positive SNAP-Ed results throughout the country.^{10–14} However, the difficulty of aggregating data from diverse agencies has hindered the demonstration of national outcomes and impacts of SNAP-Ed. The SNAP-Ed Evaluation Framework addresses this shortfall; it embodies the elements necessary for establishing collective impact—a common agenda, shared measures, mutually reinforcing activities, continuous communication, and strong backbone organizations—all of which offer increased potential for nutrition educators to address stubbornly elusive population improvements.¹⁵ Although the Framework moves toward the reporting of standardized results, the Census results that represent SNAP-Ed effort

across all states help us understand which nutrition education indicators were not yet targeted for intervention by SNAP-Ed SIAs. These were primarily in the outer spheres of the Social Ecological Model⁷ (less than half [48%] in the environmental setting level, one-third [30%] in the population level, and even less in the sectors of influence level [20%]) and when evaluation efforts are needed, that is, most long-term outcomes and outcomes at the sectors of influence and populations level.

A strength of this study was the collaborative nature in which it was conducted. Multiple researchers and evaluators from across the US participated in the planning, piloting, or implementation of the Census. In addition, there was a close collaboration with FNS's 7 SNAP-Ed Regional Coordinators and the SNAP state agencies. The collaborative nature of the study yielded a high response rate (91%) and participation from SIAs in all 50 states, which makes the results of the Census highly likely to be generalizable to all SNAP-Ed SIAs and regions of the country. A weakness of the study was the limited participation of the ITOs serving as SIAs. Their limited participation was likely due to the fact that they were newly funded SIAs. Finally, this study was only descriptive in nature; it did not examine whether SIA characteristics predict the use of the Framework. The coauthors intend to explore these types of research questions and look at change over time in the Census results in future publications.

IMPLICATIONS FOR RESEARCH AND PRACTICE

For nutrition educators more generally, this study offers insights about the very real and large-scale challenges of the work in this field, such as measuring long-term, complex, and multilevel outcomes; gaps and barriers that exist in nutrition education programming and evaluation; technical assistance needs of nutrition education efforts across spheres of influence; and the importance of meaningful collaborations to ensure broader impact across sectors. The Framework and ongoing Census

results also could provide a template to help track progress by other USDA programs—*Special Supplemental Program for Women, Infants and Children*, the *Expanded Food and Nutrition Education Program*, Team Nutrition, and the *Gus Schumacher Nutrition Incentive Program* (formerly the *Food Insecurity Nutrition Incentive Grant Program*).

Trends in dietary quality and obesity are generally unfavorable in the US, and there are significant disparities in low-resource populations.¹⁶ With USDA programs already in place to support high-need groups, having a framework with a set of 51 action-oriented, evidence-based outcome indicators to address the complex conditions that drive these trends reflects significant progress in nutrition education practice. Furthermore, the first-year uptake by so many diverse SNAP-Ed practitioners suggests that it may be feasible to use the Framework more widely as a roadmap to help eliminate disparities between low-resource groups and the general population. That said, this study displayed an uptake in the use of the Framework, namely which indicators SIAs targeted for intervention and evaluated, but it did not aggregate the evaluation results, which would be a next step in demonstrating the national collective impact of SNAP-Ed in eliminating obesity-related health disparities. Continuing with a nationwide perspective, it is expected that such approaches would not only better characterize the work being conducted through SNAP-Ed, and possibly other nutrition education partners but also lead to closer and more meaningful partnerships at the local, state, and national levels while driving the development of a more robust network of technical assistance, surveillance, reporting, and analysis. This first national snapshot demonstrates the possibility of mobilizing significant and comprehensive efforts to use an evaluation framework, which offers insights about what it will take to begin to demonstrate the collective impact of a national nutrition education program, as it plays a vital role in

national nutrition policy and public health.

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NOTES

A description of each indicator and some of the corresponding evidence-based measures linked to each indicator can be found at: <https://snapedtoolkit.org/framework/index/>.

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