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Development and Evaluation of Impact Statements for the Expanded Food and Nutrition Education Program (EFNEP)

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Abstract. Extension professionals often communicate program outcomes to external stakeholders using impact statements. We developed and evaluated four impact statements for the Expanded Food and Nutrition Education Program (EFNEP). We drafted the statements after conducting literature reviews for core content areas of EFNEP that include diet quality, food resource management, physical activity, and food safety. Subsequently, we evaluated the statements by facilitating expert panels made up of subject matter experts and communication professionals (n=14) from 12 Land-grant Universities. These impact statements aim to support EFNEP and other Extension professionals when communicating program value with key external stakeholders.

INTRODUCTION

Since 1969, the Expanded Food and Nutrition Education Program (EFNEP) has assisted low-income families and youth in acquiring knowledge, skills, and changed attitudes—all of which contribute to the necessary changed behaviors that lead to nutritional and physical well-being. EFNEP is embedded in Extension through land-grant universities in all U.S. states and territories. EFNEP partners with communities and local agencies to create environments that support participants' health and well-being (United States Department of Agriculture (USDA), 2016). Nationally, EFNEP collects pre- and post-intervention data from participating adults. Data collected from participants include demographic information, the EFNEP Adult Questionnaire, and a 24-hour dietary recall. The EFNEP Adult Questionnaire is a validated tool that assesses behavior changes across multiple domains related to food and physical activity behaviors, including diet quality, food resource management, physical activity, food safety, and food security (Murray et al., 2017; Murray et al., 2020; Moore et al., 2019; Barale et al., 2022). EFNEP evaluation data is often used to share the program's value with external stakeholders.

Impact statements related to Extension nutrition programs are available through organizations such as Land-Grant Impacts and National Extension Association of Family and Consumer Sciences. To our knowledge, a standardized impact statement does not exist for all EFNEP coordinators to use across the 76 programs throughout US states and territories. The USDA prepares a national report of aggregated data each year that includes impact statements related to EFNEP participant's food and physical activity behaviors. Impact statements used at the state and territory level are often developed by that program's EFNEP coordinator and are not shared or reviewed across the 76 programs. This is the first attempt to create standardized EFNEP adult impact statements between all land-grant universities.

Communicating the public value of programs like EFNEP is critical to sustaining the societal benefits of these programs (Lamm et al., 2021). Impact statements offer an effective way to demonstrate the public value of these programs through a summary of the economic, societal, and/or environmental outcomes of a program. These statements communicate what the program did and why it matters (Land-Grant Impacts, 2021). Over the past 20 years, Extension programs have invested resources and training in defining public value messages and developing impact statements (Franz, 2015; Kalambokidis, 2011). Effective impact statements must be clear, limit jargon, and include language that resonates with the target audience (Franz, 2015). The dual purposes of this article are to (a) describe the development and evaluation of four Impact Statements for EFNEP's content areas—diet quality, food resource management, physical activity, and food safety—and (b) provide an impact statement template for EFNEP coordinators to communicate their program outcomes in meaningful and easy-to-understand messages that resonate with outside stakeholders (Table 2, Appendix).

METHODS

We conducted literature reviews—and gathered feedback from nutrition education experts to confirm the outcomes reported in the literature—to identify the social, economic, and environmental outcomes of nutrition education programs serving low-income audiences. During evaluation of the impact statements, we facilitated four panels of expert communication professionals and analyzed their feedback before completing the final draft of the impact statements (Figure 1).

IDENTIFICATION OF EFNEP CONDITION OUTCOMES: LITERATURE REVIEWS

There are five EFNEP content areas that are the focus of programming and evaluation: diet quality, physical activity, food resource management, food safety, and food security. To begin writing impact statements, we conducted literature reviews of the first four content areas: diet quality, physical activity, food resource management, and food safety. We did not include the food security content area in these impact statements; the adult survey questions recently changed, so EFNEP outcome data was not available.

We searched Web of Science, PubMed, and Google Scholar using content-specific terms such as "diet quality," "healthy eating," "food resource management," "food skills," "physical activity," "exercise," and "food safety." These searches also used the terms "nutrition education OR EFNEP OR SNAP-Ed". When selecting papers to inform the impact statements, we prioritized studies published after 2000 that focused on the target population of EFNEP: adults with limited resources caring for children. We drafted the impact statements by describing EFNEP learning and behavior outcomes and health and societal outcomes that we identified in the literature reviews (see Figure 1, Table 2).

EVALUATION OF IMPACT STATEMENTS

Researchers and evaluators from the multistate research project NC3169: EFNEP Related Research, Program Evaluation and Outreach reviewed early drafts of the impact statements. During NC3169 meetings, we presented the literature review findings and drafts of the impact statements to subject-matter experts in nutrition practices, physical activity, food resource management, and food safety. Their review ensured the outcomes reported in the statements reflected current research and program evaluation.

We then recruited communication professionals (CPs) who held positions within land-grant universities—and had experience writing impact statements for Extension programs—to give feedback on the EFNEP impact statements. EFNEP or Supplemental Nutrition Assistance Program Education (SNAP-Ed) leaders identified CPs in their respective institutions that represented the four regions of the USDA National Institute of Food and Agriculture (NIFA): West, North Central, South, and Northeast. We facilitated four Expert Panels with the CPs (n=14). Drafts of the four statements were displayed one at a time and reviewed using the three guiding questions listed below:

- In your own words, what does this impact statement mean to you?
- Which parts of this impact statement stand out to you?
- How might this impact statement be strengthened or clarified?

CPs responded to the questions and discussed their ideas on how to revise the statements. We recorded and transcribed the expert panel discussions. The four authors read and independently reviewed the transcripts before completing a qualitative exploratory coding method to identify key recommendations as described by Saldaña (2013). Then, we met to compare and identify the most prevalent key recommendations. We met to resolve inconsistencies through discussion and review of the transcripts. We revised the four statements together after studying the suggested revisions as listed in Figure 1.

Figure 1. Timeline of the development and evaluation of EFNEP impact statements.

RESULTS

In the existing literature, positive behavior changes in diet quality and physical activity are often associated with decreased risk of chronic disease and other negative health outcomes. Food resource management skills decreased food insecurity; food safety knowledge decreased the incidence of foodborne illness.

DIET QUALITY

Healthy dietary patterns are associated with a reduced risk of cardiovascular disease, diabetes, and obesity. Optimal dietary patterns include adequate consumption of fruits, vegetables, whole grains, low-fat dairy, and seafood. Limiting sugar-sweetened foods and beverages, red and processed meats, high-fat dairy, and refined grains is also an important component of a healthy dietary pattern (United States Department of Agriculture, 2020). An analysis of nearly 40,000 U.S. adults over a sixteen-year period showed that increased consumption of vegetables is correlated with decreased rates of coronary heart disease (Conrad et al., 2018). A meta-analysis of 95 studies documents a reduced risk of cardiovascular disease and all-cause mortality with increased fruit and vegetable consumption (Aune et al., 2017).

In EFNEP classes, peer educators and participants discuss the importance of eating a variety of fruits and vegetables. Classes often include tasting or preparing nutrient-dense recipes. Curricula used in EFNEP classes are informed by the Dietary Guidelines for Americans and place an emphasis on consuming more fruits and vegetables—specifically red and orange vegetables, dark green vegetables, and beans and peas. EFNEP curricula also include messages and activities about added sugars and encourage participants to reduce their consumption of regular sodas. In a systematic review of 66 randomized controlled trials that compared food groups and chronic disease markers, researchers found that sugar-sweetened beverages (SSB) have the most negative health outcomes, including increased blood pressure and cholesterol (Schwingshackl et al., 2018). A cross-sectional study investigating diet and chronic disease analyzed National Health and Nutrition Examination Surveys (NHANES) from 1999-2010 and found that chronic disease biomarkers worsen with increased SSB intake and improve with decreased SSB intake (Hert et al., 2014). EFNEP participants report improved dietary behaviors such as increased fruit and vegetable consumption and decreased SSB consumption, both of which can reduce the risk of chronic disease.

FOOD RESOURCE MANAGEMENT

There are a variety of food resource management (FRM) skills taught in EFNEP that help adults stretch their food budgets and prepare foods that meet their nutritional needs. FRM skills include planning meals, using a shopping list, reading nutrition labels, comparing food prices, and preparing food at home.

Improved FRM behaviors are associated with a reduced risk of food insecurity (Jomaa et al., 2020; Kaiser et al., 2015; Lohse et al., 2015). Two studies utilizing a pre-post design documented a positive association between increased FRM skills and increased food security following a participant's completion of an EFNEP class series (Crouch & Dickes, 2017; Farrell et al., 2017). A one-year follow-up study of SNAP-Ed participants in Indiana found SNAP-Ed to be a successful intervention in improving food security among households with children (Rivera et al., 2016). Developing FRM skills in EFNEP classes may increase household food security.

PHYSICAL ACTIVITY

Research shows that physical activity is one of the most important components to physical health, and many individuals are aware of the benefits of regular physical activity (Piercy et al., 2018). The Physical Activity Guidelines for Americans recommend that adults perform 150-300 minutes of moderate physical activity or 75-150 minutes of vigorous physical activity weekly to maintain or improve their overall health and wellbeing (United States Department of Health and Human Services, 2018). However, less than half of all Americans follow these recommendations (Child et al., 2017). Low-income Americans are less likely than the average population to meet the Physical Activity Guidelines, and this population experiences higher rates of both sedentary behavior and obesity (Li et al., 2018; Day, 2006; Bernhart et al., 2020; Bull et al., 2014; Griffin et al., 2020; Buscemi et al., 2019).

The research also shows that participation in programs such as EFNEP that serve low-income communities do improve health-related outcomes and healthy behaviors related to nutrition and physical activity (Bull et al., 2014; Auld et al., 2015; Pérez-Escamilla et al., 2008; Cullen et al., 2009). With respect to physical activity participation, EFNEP encourages participants to make small changes to their daily routine, such as taking short walks or stretch breaks to help improve daily physical activity. Furthermore, the curricula used by EFNEP contain specific lessons that teach participants about the benefits of regular physical activity and ways in which they can incorporate both aerobic and muscle-strengthening activities into their daily routines (Office of Disease Prevention and Health Promotion, 2021). Promotion of these behaviors may lead to an improvement in physical activity participation among participants (Bull et al., 2014).

FOOD SAFETY

Foodborne pathogens cause an estimated 9.4 million illnesses in the United States each year (Dewey-Mattia et al., 2018) and food safety experts contend that the majority of

foodborne illnesses result from improper handling in home kitchens (Byrd-Bredbenner et al., 2013). One research review (Quinlan, 2013) found evidence that low-income populations faced increased risk for foodborne illnesses because of: a) inaccurate knowledge of safe food handling and storage practices and b) limited access to kitchen items that could promote safer food handling—such as owning multiple cutting boards and knives. Additionally, specific groups targeted for EFNEP (such as pregnant women and mothers with young children) are at an increased risk for severe illness due to pathogens such as listeria, and young children are at an increased risk for more severe outcomes related to salmonella (Scallan et al., 2011).

Food safety is a critical component to helping participants learn to prevent foodborne illnesses. EFNEP provides hands-on education opportunities to demonstrate consumer food safety skills—outlined by the USDA at foodsafety.gov—to reduce the incidence of foodborne illnesses in the home environment. These four main skills include cleaning or washing all surfaces and utensils (as well as hands) often when preparing foods; preventing cross-contamination by separating meats and raw seafood from other foods; cooking foods to proper temperatures; and storing foods at proper temperatures. Research demonstrates that adult participants have increased food safety knowledge and practices after completing EFNEP classes (Arnold & Sobal, 2000; Medeiros et al., 2001; Meer & Misner, 2000; Young et al., 2015).

EXPERT PANELS

Feedback from CPs emphasized the three main areas in need of revision: (a) highlighting impacts and outcomes rather than reporting research, (b) reducing jargon and simplifying terms, and (c) including programmatic information so readers understand the purpose of EFNEP. We categorized these revision areas into three recommendations: impact, language, and content (Table 1).

In the first drafts of the impact statements, the team started each statement with summaries of the research literature and ended with program impacts and outcomes. In contrast, CPs discussed the importance of gaining stakeholders' attention from the beginning rather than summarizing information from the literature reviews. CPs advocated for the impact statements to present information at the beginning of the statement to highlight the impacts and capture stakeholders' attention. Based on feedback, we revised the beginning of the statements to make them positive and easier to understand.

Much of the terminology in the first draft of the impact statements was pulled from the literature and the EFNEP Adult Questionnaire (EFNEP Digital Resources, 2020). The CPs identified words and phrases that may not be meaningful to external stakeholders, such as SSB, FRM behaviors, and safe food handling practices. Examples of simplified terms include replacing "sugar-sweetened beverages" with "sugary drinks," and "safe food handling practices" with "safe food practices" (Table 1). Based on this feedback, we added definitions and examples to each statement for clarity. For example, we added descriptions of specific FRM behaviors—such as planning meals and making a shopping list—to the FRM statement. Examples of safe food practices—such as handwashing, cooking, and storing food properly—were added to the food safety statement.

In addition to presenting outcomes, impact statements describe clear program activities in an active voice (Land Grant Impacts, 2021). The earlier draft of the EFNEP statements focused on outcomes documented in the literature and the behavior changes reported by EFNEP participants through pre/post-tests, but they did not include information about what participants were learning. The CPs concluded that information describing what knowledge and skills are included in EFNEP programs needed to be added to each statement (Table 1). We added this information via examples of what EFNEP participants learn and practice in classes, such as preparing nutritious recipes and making a shopping list (Table 2).

CONCLUSION

Impact statements reflect the meaningful outcomes of EFNEP in improving participants' diets, physical activity levels, and other food-related behaviors. It is important to clearly communicate these impacts to local, state, and federal stakeholders who have the potential to influence the direction and scope of EFNEP-related programming. As such, it is critical that these statements are accurate and convey information that is easily understood and resonates with different audiences (Franz, 2015; Kalambokidis, 2011). The process described here underscores the importance of expert review of impact statements not only by subject matter experts but by communication experts as well.

These EFNEP impact statements are noteworthy in that these statements represent the first attempt to develop a unified message to promote and support EFNEP community programs throughout the United States. Further, this evidence-based approach provides support that EFNEP may reduce the risk of chronic disease and foodborne illness, increase food security, and promote physical and mental health. EFNEP providers should update future statements to reflect the social and economic impact of improving these health-related behaviors, such as improved quality of life and the impact on healthcare costs. Future studies are necessary in this area to fill in the gaps in the literature specifically related to the potential effects of EFNEP on food insecurity issues.

One strength of these impact statements is that they can be used to report behavior and condition outcomes consis-

Table 1. Key Recommendations for Impact Statements, as Provided by Communication Professionals During Expert Panels

Key Recommendations	Description	Examples from the Expert Panels
Impact	Focus group participants identified the need to frame impact statements positively. They suggested highlighting relevant outcomes by rearranging the information and descriptions in each statement.	"Rather than start with a problem statement …treat it like a news headline, something to grab your attention and make you want to read more". "A lot of the stories that we see on the national level have a lot of outputs and haven't quite got to impact. We love the fact that you're addressing the actual impact of a behavior change". "The sentences need to be flipped. Place the behavior changes at the beginning of the statements, make it easy for the reader to find."
Language	Focus group participants identified terminology and definitions that were difficult to understand. They gave feedback on how to avoid redundancy and simplify messages.	"Simplify as much as possible, listing sugary drinks instead of sugar-sweetened beverages would be my preference". (DQ) "I was tripped up on the phrase Food Resource Management behaviors, is that a term that is widely used?" (FRM) "The concluding statements are a bit repetitive. I would change 'has been shown to be an important component to health' to 'being active promotes health'". (PA) "When I think of recommended sanitation practices, I think of garbage, a better example of what that means like cleaning". (FS)
Content	Participants identified missing elements of impact statements, such as descriptions of the knowledge and skills learned in EFNEP and examples of changed behaviors. Focus group participants suggested adding content (such as economic benefits) that would catch the attention of external stakeholders.	"EFNEP is unique because it is interactive and meets for six or more sessions, make a connection between what they are actually doing in class, instead of just being talked at". "The statements are missing what was done, so the [EFNEP] graduates ate more fruits and vegetables, how did they change that behavior?" (DQ) "To me this is lacking a 'so what'. Stating FRM behaviors are linked to improved diet quality and food security is not particularly moving to me". (FRM) "For legislators, emphasizing reduction in costs, if available adding the cost benefit for health care costs is going to influence stakeholders". (DQ&PA) "Whenever I see how much families report saving on grocery shopping, I'm amazed. That's the hugest thing [in EFNEP]. Can you include that?" (FRM)

Note. EFNEP indicates Expanded Food and Nutrition Education Program; DQ, diet quality; FRM, food resource management; PA, physical activity; FS, food safety.

tently across all EFNEP programs. The EFNEP Adult Questionnaire is a valid and reliable 30-item tool used by all 76 programs to assess behavior changes (Murray et al., 2017; Murray et al., 2020; Moore et al., 2019; Barale et al., 2022). The behavior changes measured by this questionnaire are the outcomes reported in the impact statements. Individual states and territories can use the same messaging to external stakeholders to demonstrate the value of EFNEP to participants, participants' families, and communities.

Impact statements communicate program outcomes, but they do not tell the full story of EFNEP. It is important to supplement impact statements with success stories from program participants and document other environmental or economic changes due to EFNEP. Sharing individual stories alongside impact statements is important when communicating with external stakeholders.

Along with expanding the scope of these impact statements, future work would benefit from cross-collaboration among subject matter and communication experts to improve the content, language, and structure of these statements. Collaboration with specialists outside of nutrition education, such as communicators and evaluators,

Table 2. Impact Statements by EFNEP Core Content Area

Content Area	Draft Statements	Revised Statements
Introduction	(We wrote an introduction for the four revised impact statements to provide context based on feedback from the expert panels.)	The Expanded Food and Nutrition Education Program (EFNEP) improves the diets, physical activity, and other food-related behaviors of families with limited financial resources through peer nutrition education. In 2019, 760 adults with limited financial resources graduated from the EFNEP program in Washington state, affecting an additional 3,055 family members indirectly.
Diet Quality	Increased consumption of fruits and vegetables, low-fat dairy foods, legumes, and decreased consumption of sugar sweetened beverages reduce the risk of cardiovascular disease, obesity, diabetes, breast and colon cancer, and bone fractures. Of the adult EFNEP graduates, 66% increased their consumption of fruits and vegetables and 46% decreased their consumption of sugar sweetened beverages such as soda. These dietary changes are linked to lower risk of chronic disease and health care costs, leading to improved community health.	Making healthy food and drink choices reduces the risk of chronic disease. In EFNEP classes, participants learn to improve their diets by preparing nutritious recipes and reading food labels.After completing an EFNEP class series, 97% of participants reported making healthier choices including eating more fruits and vegetables and drinking fewer sugary drinks. These dietary changes improve health outcomes by lowering the risk of chronic diseases such as cardiovascular disease, obesity, and diabetes.
Food Resource Management	Both planning and saving are food resource management behaviors linked to improved diet quality and food security. Families plan meals by selecting recipes to cook, making a shopping list, and budgeting food dollars. They stretch food dollars by comparing food prices, checking for sales before and during grocery shopping, and using coupons. Of the adult EFNEP graduates, 92% made positive behavior changes in food resource management. These behavior changes have the potential to improve diet quality and food security for EFNEP eligible adults and their children.	EFNEP participants learn to plan meals, make shopping lists and food budgets, compare food prices, and utilize food resources in their community. These skills make up food resource management behaviors that increase household food security. After completing the program, 92% of participants reported making positive behavior changes in food resource management. They also reported saving $23 on their food costs each month. Improvements in these behaviors help participants to thrive and lead healthier lives on a budget.
Physical Activity	Physical activity has been shown to be an important component to physical and mental health. However, less than half of adults in the US, and an even lower proportion of adults living in low-income communities, meet the Physical Activity Guidelines for Americans. Physical inactivity has been widely associated with increased risk of chronic diseases like cardiovascular disease, diabetes, and some cancers. Of the adult EFNEP graduates, 67% exercised for at least 30 minutes on more days a week and 70% made other changes to be active more often. Increasing physical activity can lead to both immediate and long-term health benefits.	Being physically active promotes physical and mental health and reduces the risk of chronic disease. The Physical Activity Guidelines for Americans include 150 minutes of moderate activity per week. However, less than half of adults meet these guidelines. EFNEP participants are encouraged to increase physical activity by making small changes in their everyday lifestyle, such as including short walks or stretch breaks in their daily routine. After completing the program, 87% of participants reported being more active, such as exercising for at least 30 minutes on more days a week and making other changes to be active more often. These improvements in physical activity help contribute to a healthier lifestyle for EFNEP participants.

Table 2. (*continued*)

Content Area	Draft Statements	Revised Statements
Food Safety	Foodborne illnesses affect over 9 million people living in the U.S. per year, and many of these could be prevented using safe food handling practices. Safe food handling practices are critical for all populations including low-income adults. Groups such as pregnant mothers and young children are at higher risk for certain foodborne illnesses. EFNEP teaches safe food handling practices, such as proper handwashing, food preparation and food storage that help prevent foodborne illnesses. Of the adult EFNEP graduates, 88% made positive changes in food safety behaviors, which have the potential to decrease foodborne illnesses.	Safe food practices are critical for preventing foodborne illnesses which affect more than 9 million people living in the U.S per year. EFNEP teaches recommended food safety practices such as proper handwashing, how to cook food to correct temperatures, and safe food storage. After completing the program, 88% of participants made positive changes in one or more food safety behaviors, which can decrease foodborne illnesses caused by e. coli, salmonella, listeria, and others.

Note. Data in Table 2 is from Washington State University EFNEP reporting period of 10/01/2018-9/30/2019 for illustrative principles. These statements are intended for use at the state and territory program level; we choose Washington as an example.

strengthen impact and public value statements (Franz, 2015). The feedback gathered from communication professionals at land-grant universities supported revisions to the EFNEP impact statements. The panelists offered revisions that were more appropriate to external stakeholders who may not have a background in nutrition or health education but often make important political and financial decisions related to nutrition education programs. Future studies should examine how impact statements can educate external stakeholders about the societal and economic benefits of EFNEP and related Extension programs.

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APPENDIX: EFNEP WASHINGTON STATE IMPACT REPORT

EFNEP

WASHINGTON STATE IMPACT REPORT

The Expanded Food and Nutrition Education Program (EFNEP) improves the diets, physical activity, and other food-related behaviors of families with limited financial resources through peer nutrition education.

In 2019, **760** adults graduated from the EFNEP program in Washington state, indirectly affecting an additional **3,055** family members.

DIET QUALITY

Making healthy food and drink choices reduces the risk of chronic diseases such as cardiovascular disease, obesity, and diabetes. In EFNEP classes, participants learn to improve their diets by preparing nutritious recipes and reading food labels.

After completing an EFNEP class series, 97% reported making healthier choices including eating more fruits and vegetables and drinking fewer sugary drinks. These dietary changes improve health outcomes by lowering the risk of chronic diseases.

EFNEP Expanded Food and Nutrition Education Program

WASHINGTON STATE UNIVERSITY EXTENSION

FOR MORE INFORMATION
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PHYSICAL ACTIVITY

Being physically active promotes physical and mental health and reduces the risk of chronic disease. *The Physical Activity Guidelines for Americans* includes 150 minutes of moderate activity per week. However, less than half of adults meet these guidelines.

EFNEP participants are encouraged to increase physical activity by making small changes in their everyday lifestyle, such as including short walks or stretch breaks in their daily routine.

After completing the program, 87% reported being more active, such as exercising for at least 30 minutes on more days a week and making other changes to be active more often. These improvements help contribute to a healthier lifestyle for EFNEP participants.

FOOD SAFETY

Safe food practices are critical for preventing foodborne illnesses which affect more than 9 million people living in the U.S. per year. EFNEP teaches recommended food safety practices such as proper handwashing, how to cook food to correct temperatures, and safe food storage.

After completing the program, 88% made positive changes in one or more food safety behaviors, which can help decrease foodborne illnesses such as *E. coli*, salmonella, and listeria.

FOOD RESOURCE MANAGEMENT

EFNEP participants learn to plan meals, make a shopping list, make a food budget, compare food prices, and utilize food resources in their community. These skills make up food resource management behaviors that increase household food security.

After completing the program, 92% reported making positive behavior changes in food resource management. They also saved $23 on their food costs each month. Improvements in these behaviors help participants to thrive and lead healthier lives on a budget.