

RNECE – WEST REGION

EXECUTIVE SUMMARY

BACKGROUND

Nutrition education programs for less advantaged groups have been a priority within the United States Department of Agriculture (USDA) for the last half-century. USDA administers nutrition education programs that target low-income populations through the Food and Nutrition Service (FNS) and the National Institute of Food and Agriculture (NIFA). The Supplemental Nutrition Assistance Program-Education (SNAP-Ed), created in 1992, is the primary nutrition education program administered through FNS. The Expanded Food and Nutrition Education Program (EFNEP), initiated in 1969, is the principal nutrition education effort administered through NIFA. Between FFY 2014 and FFY 2015, FNS and NIFA funded the Regional Nutrition Education and Obesity Prevention Centers of Excellence (RNECE) to support collaboration between program leaders and researchers, build the evidence-base regarding SNAP-Ed and EFNEP programs, and identify strategies to strengthen both programs. This work, which was completed in FFY 2018, funded a national

coordination center, four regional centers, and in 2015, a policy, systems, and environmental change (PSE) center (Figure 1). In 2015, the RNECE Longitudinal Research Study: Multi-Disciplinary Methods for Effective, Sustainable, and Scalable Evaluations of Nutrition Education Programs was funded at Utah State University. This research, which was embedded in the RNECE – West Center, is nearing completion; only initial findings are reported here.



Figure 1. Map of five RNECE Centers and Longitudinal Research Project

OBJECTIVES OF THE RNECE

The overarching goal of RNECE is to improve the health of low-income Americans by fostering a culture of health through multiple strategies, including nutrition education and complementary public health approaches implemented at each level of the socio-ecological framework through policy, systems, and environmental changes (PSE). The objectives were to

- 1 Strengthen the evidence-base on effective nutrition education and obesity prevention programs** for diverse population groups.
- 2 Evaluate the long-term effectiveness of nutrition education and obesity prevention interventions** for disadvantaged and underserved populations and opportunities for new research.
- 3 Identify and create research collaborations and synergistic relationships** among researchers and EFNEP/SNAP-Ed program directors, universities and other implementers, and state and federal agencies.
- 4 Enhance the impact of state and community nutrition education and obesity prevention efforts** by providing the public health-related training and evidence that practitioners need for improving nutrition and health behaviors, environments, and policies in ways that are equitable, efficient, and sustained over time.

RNECE – West, a collaboration between Colorado State University and Washington State University, conducted research and advanced collaborative opportunities in the NIFA Western Region to enhance direct education and environmental change efforts to address the objectives (Figure 2). Abbreviations in Figure 2: YPAR (Youth Participatory Action Research); Adult-Ed (Adult Education).

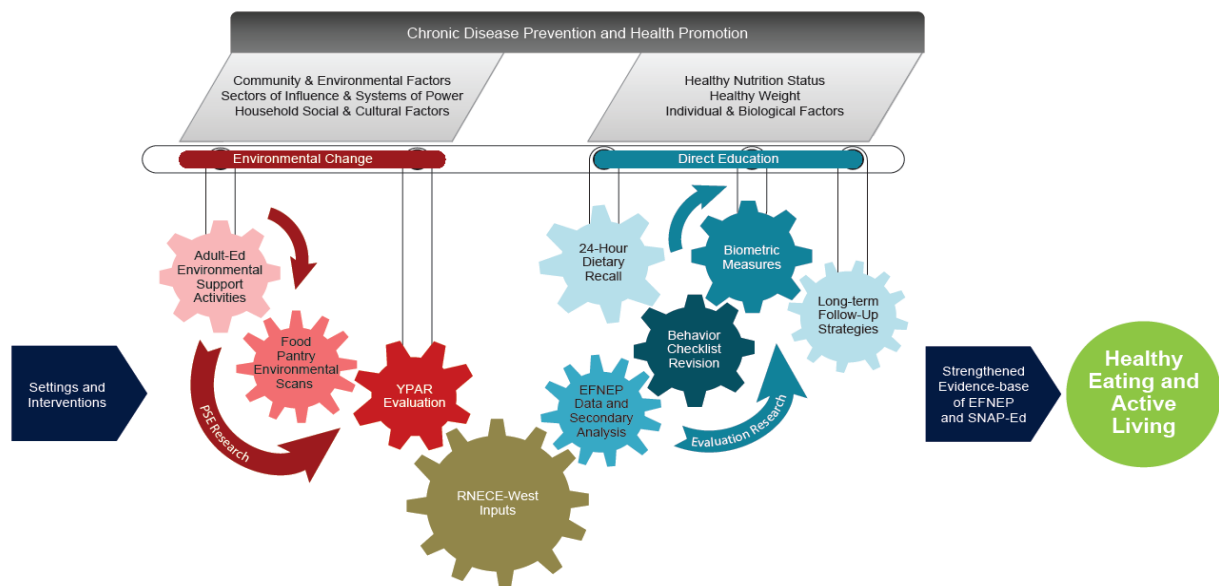


Figure 2. RNECE – West Research Efforts Schema

OVERVIEW OF MAJOR RNECE – WEST PROJECTS

Long-Term Follow-Up Evaluation of EFNEP. RNECE – West assessed the impacts on EFNEP participants at 6- and 12-months post-graduation. Objective biometric data (body mass index, blood pressure, and hemoglobin A1c) were collected at the beginning (pre) and end (post) of the class series, and at 6- and 12-months following the end of the series. RNECE – West collected data on EFNEP participants in Colorado and Washington: pre-data on 129 people; post-data on 109 people; 6-month post-data on 100 people; and 12-month post-data on 75 people. No statistically significant results were found; however, the study successfully showed that EFNEP participants were willing to be assessed on these measures, and biometric measures could be accurately collected in diverse community settings. The overall study supports the potential for conducting a larger EFNEP cost-effectiveness study that includes biometric measures and a comparison group.

Food Pantry Environmental Scan (Healthy Food Pantry Assessment Project). RNECE – West pilot tested, revised and field-tested a Healthy Food Pantry Assessment Tool (environmental scan) in seven Western Region and three Northeast Region states. RNECE – West developed a webinar, implementation guide and resource guide to support the use of the Assessment Tool to create a toolkit. More details can be found in a peer reviewed journal article.¹ The Toolkit is available at <https://extension.wsu.edu/pierce/nutrition/healthy-food-pantry-assessment-toolkit/>.

Behavior Checklist Validation in Conjunction with NC2169 and the EFNEP Behavior Checklist Committees. NC2169 (now NC3169) is an Agricultural Experiment Station multi-state research project focused on improving evaluation tools used nationally by EFNEP. RNECE – West collaborated with the multi-state research group and the EFNEP Behavior Checklist Committee to develop a new questionnaire for use nationally by EFNEP to assess behavior changes among adult program participants in five domains – nutrition, food security, food safety, food resource management, and physical activity. RNECE – West coordinated efforts ensuring that consistent methodologies were utilized across all research so that content domain questions could be combined into a final evaluation tool without duplication of efforts. RNECE – West concentrated on the validation of items assessing the nutrition, food security and food resource management. Sensitivity data for the final evaluation tool was collected (n=382). The majority of the 32 items were sensitive enough to find changes in self-reported behavior and should prove useful for EFNEP evaluation, as well as any other nutrition program adopting this evaluation tool. The Food and Physical Activity Questionnaire (FPAQ) was implemented October 1, 2017 for all EFNEP

¹ Bush-Kaufman, A., Barale, K., Aragón, M.C., Walsh, M. 2018. *Development and Testing of the Healthy Food Pantry Assessment Tool (HFPAT), an Observational Survey for Food Assistance Settings*. Journal of Nutrition Education and Behavior <https://doi.org/10.1016/j.jneb.2018.10.004>.

programs nationwide. Additional details can be found in peer reviewed journal articles.^{2,3} The FPAQ is available at <https://www2.ag.purdue.edu/programs/hhs/efnep/Pages/Resource-Evaluation-Adult.aspx>.

Environmental Barriers to Healthful Dietary and Physical Activity Behaviors in the Participant Population. This project was designed to develop an understanding of: 1) environmental barriers that directly impact dietary and physical activity behaviors in the EFNEP and SNAP-Ed participant populations; and, 2) environmental changes that may encourage more healthful behaviors in this population. Telephone focus groups with paraprofessional nutrition educators across the United States were conducted. Focus groups revealed that reduced availability, high costs, a lack of adequate transportation, and safety concerns emerged as key barriers to accessing and utilizing healthful dietary and physical activity resources within this population. The educators also provided valuable ideas for strategies to target each barrier.

Testing of Methods to Reach Program Graduates Long-Term. This feasibility study assessed effective methods for contacting EFNEP program graduates for long-term follow-up and asked their willingness to complete additional assessments. Graduates were contacted at 6- and 12-months post-graduation with one of the following methods: educator phone call, educator text, state office phone call, state office email, state office postal mail, or state office text. Educator phone calls at both 6- and 12-months were the best way to reach participants (at 32% and 47%, respectively). Of the participants reached by all methods, most expressed a willingness to complete a variety of assessments including biometric measures. The findings suggest that there is a potential for finding graduates and collecting objective, long-term data that could be used to further establish the benefits of direct education participation.

Secondary Analysis of EFNEP National Data. The purpose of this project was to summarize national EFNEP data over multiple years and conduct a feasibility study to assess outcomes over time. Researchers cleaned and formatted a national EFNEP data set covering eight years with more than 500,000 matched pairs that is now available for additional studies. Participants reported positive changes in behaviors as shown by responses on the Behavior Checklist (questionnaire) and 24-hour recall. These changes were consistent across years and state, suggesting that EFNEP continues to be an effective influence on participants' behaviors. EFNEP participants improved their diet quality over the period of program participation as shown by increases in the Healthy Eating Index. This measure has not been previously conveyed in impact reporting. Improved diet quality is an indicator of improved health. This feasibility study offers additional evidence that EFNEP is achieving its mission to produce measurable improvements in health, obesity, nutrition (food behavior), and physical activity-related outcomes of interest to USDA.

² Murray, E., Auld, G., Inglis-Widrick, R., Baker, S. (2015). *Nutrition Content in a National Nutrition Education Program for Low-Income Adults: Content Analysis and Comparison to the US Dietary Guidelines*. *Journal of Nutrition Education and Behavior*, 47(6), 566-573.

³ Murray, E., Auld, G., Baker, S., Barale, K., Franck, K., Khan, T., Palmer-Keenan, D., Walsh, J. (2017) *Methodology for Developing a New EFNEP Food and Physical Activity Behaviors Questionnaire*. *Journal of Nutrition Education and Behavior*, 49 (9), 777-783.

Sub-Award: Youth Participatory Action Research (YPAR) – A PSE Intervention. YPAR is used in some SNAP-Ed projects where it has resulted in meaningful youth-driven policy, systems, and environmental change. The purpose of this project was to compile a YPAR Evaluation Manual and a set of evaluation instruments for use with YPAR and develop a protocol for end-of-year Youth Survey Reliability Study with guidelines for Baseline End-of-Year Youth Survey Reliability Study. An evaluation toolkit was compiled based on the Youth Engagement Intervention in California.⁴ The toolkit includes an overview of the development of the evaluation tools, instructions for use of data collections tools and the suggested evaluation process for YPAR. The toolkit will benefit programs implementing YPAR by providing a systemic approach to program evaluation. A protocol to assess reliability of specific evaluation tools was developed; the research is poised to be initiated when additional funding is available.

Sub-Award: Sugar Sweetened Beverage Intake among EFNEP Participants: An Evaluation of the National EFNEP Database. Researchers for this project evaluated the impact of the Expanded Food and Nutrition Education Program (EFNEP) class series on sugar-sweetened beverage (SSB) intake in the NIFA Western Region (WR). Analysis compared the quantity, quality, and cost of foods between recalls including SSBs. In paired comparisons, caloric intake from SSBs dropped from initial to final recall, showing some positive effect of EFNEP on decreasing SSB consumption. At the population level, there was little effect on SSB-based median caloric intake when comparing pre/post recalls. However, when making paired comparisons, there was a significant reduction in energy from SSBs among EFNEP graduates, confirming improved diet quality as a result of EFNEP participation.

Sub-Award: Evaluation of a Novel, Low-Cost, Low-Burden, Scalable Technology for Evaluating EFNEP and SNAP-Ed Effectiveness. The primary objective of this study was to evaluate a novel use of technology for assessing the long-term effectiveness of SNAP-Ed and EFNEP in an inexpensive and scalable way that would not burden program participants. This technology would detect changes in grocery purchases using customer loyalty cards to identify households and would quantify expenditures on food groups of interest. Twelve EFNEP and SNAP-Ed nutrition educators in Utah recruited a total of 60 program participants. Participants filled out a short survey, which included their grocery loyalty card number or other identifying information that could be used to identify their household's purchases. The researchers' plan had been to assess changes in fruit, vegetable, whole grain, and dairy grocery expenditures before and after participating in the nutrition education program. However, delays in securing grocery store data resulted in the grant ending before data were delivered. The process evaluation found that it was feasible to recruit SNAP-Ed and EFNEP participants who shop at stores operated by our grocery store partner; however, it also revealed that more time than had been anticipated was needed for participant recruitment, that paperwork should be further

⁴ <https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/NEOPB/Pages/YouthEngagement.aspx>

simplified and minimized, and that dedicated data collection staff should be considered instead of having educators collect data.

Multi-Disciplinary Methods for Effective, Sustainable, and Scalable Evaluations of Nutrition Education Programs.

**Utah State University led this longitudinal research project. Although this project was not completed by the RNECE – West, Utah is within the western region and reporting on this project was done through the RNECE – West. Below is a summary of the project. A separate detailed report will be submitted by Utah State University once the research is completed.*

The goal of this project was to develop and test two effective, rigorous, and sustainable tools that can be used in the future to evaluate the effectiveness of EFNEP and SNAP-Ed over the long-term. Objective 1: Researchers completed a controlled feeding trial to test validity of the Automated Self-Administered 24-hour Recall (ASA24) for use with the low-income population. An online training and in-person training curriculum were developed to teach paraprofessional educators how to use the ASA24 with their participants. A pilot test was completed using the ASA24 in the field to gather data from participants. Objective 2: The research team developed and evaluated the Grocery Purchase Quality Index-2016: a tool for assessing overall diet quality of grocery purchases. Additionally, natural language methodology was developed to reduce the level of effort needed for manual coding of grocery purchase data.

SUMMARY

From FFY 2014 to FFY 2018, a collaboration of researchers and nutrition educators worked to strengthen two of the nation's most important nutrition education programs through the Regional Nutrition Education Centers of Excellence Initiative. Two USDA agencies, the National Institute of Food and Agriculture and the Food and Nutrition Service, led the effort in the six centers. The RNECE – West Center contributed to the development and validation of a new EFNEP evaluation tool, the Food and Physical Activity Questionnaire (FPAQ) that was implemented nationally October 2017. This tool is also available for SNAP-Ed and other direct nutrition education program use. Other accomplishments include the development and testing of a Food Pantry Assessment Tool that provides food pantries resources to assess and increase healthy food offerings which may result in healthier diets for food pantry clients. Through a long-term follow-up evaluation of EFNEP, the RNECE – West found that EFNEP graduates are willing to complete biometric assessments at the beginning and end of a class series and at twelve months post-graduation. Secondary data analysis found that participation in EFNEP resulted in the reduction of sugar-sweetened beverage consumption by adult participants.

RNECE – West was able to successfully collaborate with program leaders, practitioners, and researchers in nutrition, physical activity and public health disciplines across 13 states to strengthen the science and enhance dissemination of nutrition education and obesity prevention strategies and interventions that produce measurable improvements in health,

obesity, nutrition (food behavior), and physical activity-related outcomes of interest to USDA. Funding mechanisms are needed to support ongoing research in these areas for limited resource audiences.”



This work is supported by the US Department of Agriculture (USDA), Food and Nutrition Service and National Institute of Food and Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the USDA. USDA is an equal opportunity provider, employer, and lender. Funding source: USDA 2014-48757-22607.