

Identification of a Framework for Best Practices in Nutrition Education for Low-Income Audiences

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ABSTRACT

To promote effective low-income nutrition education programs, an expert panel of nutrition education and public health researchers built consensus around 28 best practices grouped into 5 domains (Program Design, Program Delivery, Educator Characteristics, Educator Training, and Evaluation) targeting direct delivery of nutrition education. These best practices can be used to assess program strengths, promote fidelity in delivery and evaluation, and design research to strengthen programs' evidence base. A survey of *Supplemental Nutrition Assistance Program—Education* nutrition education leaders helped identify staff development needs and interest relative to specific best practices. Best practices can be used to identify staff development needs among frontline educators, supervisors, and program leaders in *Supplemental Nutrition Assistance Program—Education*, *Expanded Food and Nutrition Education Program*, and other programs targeting low-income audiences.

Key Words: nutrition education, best practices, limited resource audiences, low-income, behavior change (*J Nutr Educ Behav.* 2020; 52:546–552.)

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INTRODUCTION

Best practices are strategies supported by evidence that have been effective in achieving specific outcomes.¹ Thus, when programs are implemented using best practices, confidence that positive outcomes will be achieved is increased. However, limited data exist that identify a comprehensive list of best practices for developing, delivering, and evaluating nutrition education interventions targeting low-income audiences. Recent reviews elaborated on factors that are associated with more effective nutrition

education interventions, such as fidelity and use of theory,² or listed broad evidence-based quality indicators allowing comparisons of published descriptions of programs (eg, the Guide for Effective Nutrition Interventions and Education).^{3,4} Others reported best practices within more narrow applications (eg, overcoming barriers to delivery services in rural communities,⁵ providing nutrition education in food pantries,⁶ and broad characteristics of successful interventions with children⁷ or applied in early-childhood settings).⁸ Although these citations identify specific best

practices, they do not convey a thorough list of best practices that encompass the process and content elements needed to develop effective, evidence-based interventions systematically.

Nutrition education programs targeting low-income audiences, such as the *Supplemental Nutrition Assistance Program—Education* (SNAP-Ed) and the *Expanded Food and Nutrition Education Program* (EFNEP), were a particular focus to promote greater consistency and efficacy in program planning, implementation, and evaluation, as well as management of these programs. The goal of this report was to develop a more comprehensive list of best practices in the context of program development, implementation, and evaluation.

To encourage the delineation of best practices, the US Department of Agriculture Food and Nutrition Service (administrators of SNAP-Ed) contracted with the National Institute of Food and Agriculture (administrators of EFNEP), who subcontracted with Colorado State University to identify best practices for nutrition education interventions targeting low-income audiences. Lead researchers assembled a 7-member expert panel, chosen based on tenure as nutrition education program leaders, university researchers, and/or their role within public

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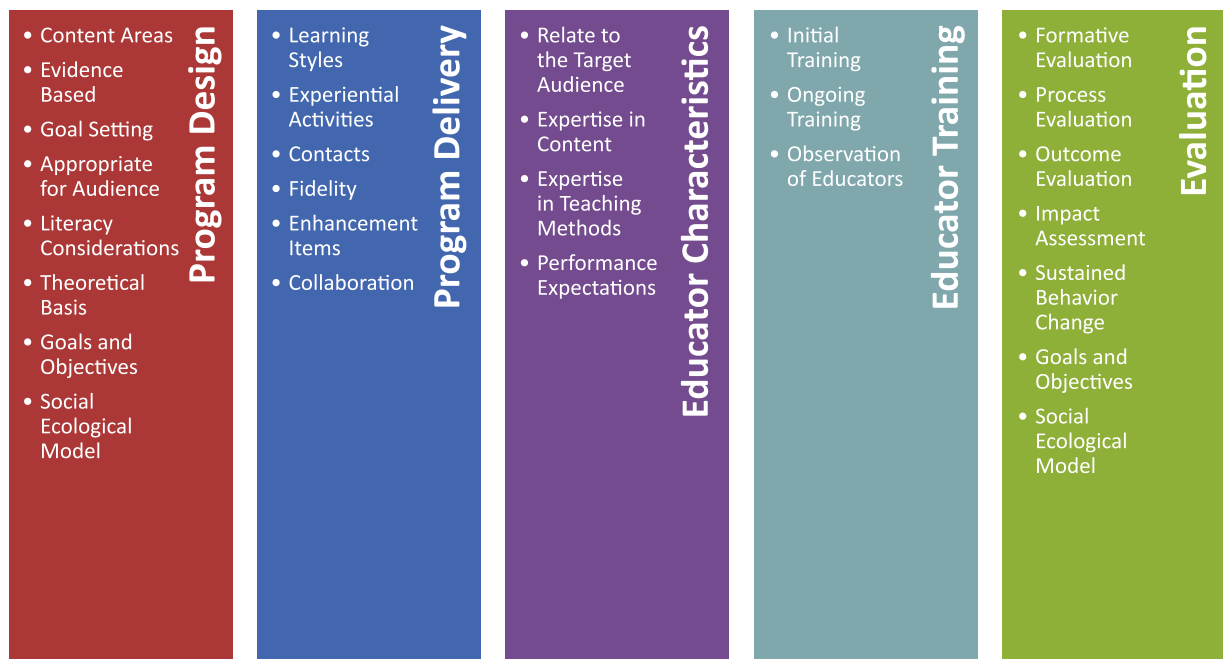


Figure 1. Best practice in nutrition education for low-income audiences: an expert panel identified 28 practices within 5 domains.

health organizations. Concurrently with panel selection, lead researchers reviewed existing literature by searching PubMed and AGRICultural OnLine Access research databases and textbooks for the key words *best practice*, *low-income*, *SNAP-Ed*, *EFNEP*, *curriculum*, *intervention*, *theory*, *design*, *impact*, *outcomes*, *evaluation*, and *educator*. Governmental literature and reports were also reviewed. The results of the literature review contributed to discussions among panel members.

In 2013, at the time of the project, investigators received fiscal year 2012 SNAP-Ed state plans and year-end reports from 50 states and 2 territories. The plans provided insights on then-current SNAP-Ed programmatic activities and provided researchers with potential case studies representing selected best practices. This analysis confirmed that direct delivery was the most prevalent nutrition education approach at the time; all SNAP-Ed–implementing agencies reported delivering direct education through single contacts or a series of contacts in fiscal year 2012 as required by SNAP-Ed guidance.⁹ In addition, EFNEP overwhelmingly delivers direct education,¹⁰ as do many other community nutrition education programs. The Healthy Hunger-Free Kids

Act of 2010¹¹ noted that direct delivery is considered the hallmark of nutrition education and has traditionally been the most common delivery channel used in low-income nutrition education programs. Given the findings from the review of literature and 2012 SNAP-Ed state plans, the expert panel focused on identifying best practices for direct delivery of nutrition education. After this study, both SNAP-Ed and EFNEP expanded programming efforts in policy, systems, and environmental (PSE) change approaches in addition to direct education; however, this report does not address best practices in PSE. Nevertheless, the best practices included in this report could inform PSE activities.

DISCUSSION

Over a 12-month period, the panel reached consensus on 28 best practices in nutrition education for low-income audiences; these practices were organized by panel consensus into 5 domains: Program Design, Program Delivery, Educator Characteristics, Educator Training, and Evaluation (Figure 1).¹² Panel members independently developed lists of best practices, based on their own extensive experiences in nutrition education research and

practice with low-income audiences, and results of the literature review. The panel then participated in multiple written exchanges and conference calls to discuss and reach consensus on the final 28 best practices. Through multiple facilitated discussions, the expert panel established face validity (the extent to which the best practices are consistently interpreted by nutrition professionals) and content validity (the extent to which the best practices represent the breath of the desired subject matter) for the best practices.¹³ For each best practice, the expert panel also identified several indicators that could be used by program leaders to assess how well a program met that practice.¹² Figure 2 shows examples from the Evaluation domain.

Two activities provided additional information to support the expert panel's deliberations. This included identification of potential case studies and a survey of the Association of SNAP-Ed and Nutrition Network Administrators (ASNNA) members. From the review of the 2012 SNAP-Ed state plans, case studies exemplifying best practices were identified. For the case studies, variability in delivery channel (direct, indirect, social marketing, and PSE activities), target audience (youths, adults, and older

Formative Evaluation Use of formative evaluation in the development of the intervention.**Indicated by:**

- Expert review
- Published results of pilot studies
- Curriculum description/overview
- Published research about the development of the curriculum or intervention

To learn more:

- Contento, I.R. (2007). Nutrition education: Linking research, theory, and practice. Sudbury, MA: Jones and Bartlett Publishers. Chapter 14 Page 322
- Challenges of Conducting Effective SNAP-Ed Evaluations: A Step-by-Step Guide http://www.fns.usda.gov/sites/default/files/SNAPEDWavell_Guide.pdf
- **Case Study:** Formative Evaluation

Process Evaluation Use of process evaluation in monitoring and decision making.

To assure intervention is implemented as designed and that intervention is continually reviewed to ensure fidelity and adapted as needed.

Indicated by:

- Program documentation
- Interviews with program developers
- Annual program reports
- Feedback from participants on usefulness and acceptability of program
- Feedback from educators on usefulness and acceptability of program
- Documented observation of educator while teaching

To learn more:

- Contento, I.R. (2007). Nutrition education: Linking research, theory, and practice. Sudbury, MA: Jones and Bartlett Publishers. Chapter 14 Pages 323, 324
- Challenges of Conducting Effective SNAP-Ed Evaluations: A Step-by-Step Guide http://www.fns.usda.gov/sites/default/files/SNAPEDWavell_Guide.pdf
- **Case Study:** Process Evaluation

Figure 2. Selected indicators for best practices in formative and process evaluation. Other evaluation best practices are available in Baker et al.¹²

adults), and funding allocation (size of program) were considered. Case studies did not reflect programs that incorporated all identified best practices; rather, they demonstrated the effective use of at least 1 specific best practice.¹²

Project leaders sent an e-mail survey in April, 2014 to the ASNNA list-serv, which included SNAP state agency and SNAP-Ed–implementing agency representatives, to assess the confidence of the ASNNA members and SNAP-Ed stakeholders with their ability to apply each of the 28 best practices and to gauge interest in learning more about specific best practices. Respondents seemed most confident in their abilities to apply best practices related to Program Design and Delivery and less confident about those related to Evaluation (Table). For 22 best practices, ≥ 25% of the implementers were interested in staff development opportunities, particularly for use of the Social Ecological Model¹⁴ in Program Design and Evaluation. For 6 of 7 best practices in the Evaluation domain, > 30% of implementers were interested in participating in

staff development opportunities. The most popular format for staff development options were short webinars, a series of webinars, or self-paced trainings, at 91%, 84%, and 79%, respectively. These results suggest both an interest in and need for professional development opportunities addressing best practices in nutrition education for low-income audiences.

IMPLICATIONS FOR RESEARCH AND PRACTICE

The *Supplemental Nutrition Assistance Program–Education* and EFNEP are US Department of Agriculture–funded nutrition education programs that target low-income audiences. These programs often use similar methods, cover similar content including the Dietary Guidelines for Americans,¹⁵ employ similar evaluation tools, and are even supervised within states by the same person (eg, in 2015, 27 state SNAP-Ed and EFNEP programs had the same coordinators^{16,17}). Thus, although much of the secondary analyses was done with SNAP-Ed state plans or with the survey of

ASNNA members, the results of this study go beyond SNAP-Ed and provide valuable information for leaders of any nutrition education program.

Nutrition education programs targeting low-income audiences can benefit from incorporating specific best practices into their programs to promote greater consistency and efficacy in program planning, implementation, and evaluation.^{2,18} Program leaders can apply the best practices to strengthen nutrition education programming to (1) assess program strengths and shortcomings; (2) include behavior change theory and research-based content in program design; (3) ensure evidence-based curricula, messages, and materials are appropriate for the specific target audience; (4) link evaluation to program design, program delivery, educator training, and appropriate levels of the Social Ecological Model; and (5) ensure fidelity in program delivery, educator training, data collection, and evaluation.

Self-assessment and strengthening of a program's use of best practices can lead to improved program outcomes. Indicators provided with each domain (Figure 2), although not

Table. Supplemental *Nutrition Assistance Program—Education Program* Implementers' Confidence in Their Ability to Apply and Interest in Staff Development Opportunities for Best Practices (n = 60)

Best Practices, by Domain	Confidence in Ability to Apply Best Practice^a (Mean)	Interest in Staff Development (Yes, Definitely or Yes, Probably), % (n)
Program Design		
Curriculum content	4.0	38 (14)
Research-based (based on accurate, reliable, and current research [eg, Dietary Guidelines for Americans ¹⁵])	4.2	43 (16)
Goal setting (including participant behavior change goals)	3.7	35 (13)
Appropriate for target audience (visuals, activities, recipes, language, etc)	3.8	43 (16)
(Appropriate) literacy considerations	3.7	43 (16)
Behavior change theories	3.6	62 (23)
Program clearly stated goals and objectives that drive intervention and evaluation	4.0	30 (11)
Social Ecological Model (multiple levels)	3.6	68 (25)
Program Delivery		
Learning styles (accommodated visual, auditory, and kinesthetic style)	3.6	58 (19)
Experiential activities (learner-centered methods including experiential activities with minimal lecture)	3.7	55 (18)
Contacts (sufficient duration and frequency to achieve learning outcomes)	3.8	33 (11)
Fidelity (implemented consistently and as designed)	3.8	55 (18)
Enhancement items (items and strategies to reinforce learning at home)	3.8	30 (10)
Collaboration (within and among national, state, and local health promotion initiatives)	3.9	64 (21)
Educator Characteristics		
Relate to target audience	3.3	65 (17)
Expertise in content	3.4	46 (12)
Expertise in teaching methods	3.4	85 (22)
Performance expectations clearly defined and shared with educators	3.6	73 (19)
Educator Training		
Initial training before program delivery	3.3	70 (19)
Ongoing training	3.4	85 (23)
Observations of program delivery at least annually	3.5	74 (20)
Evaluation		
Formative evaluation	3.4	63 (19)
Process evaluation	3.4	73 (22)
Outcome evaluation	3.4	67 (20)
Impact assessment	3.1	83 (25)
Sustained behavior change	3.0	80 (24)
Goals and objectives measured	3.6	57 (17)
Social Ecological Model evaluation (each level within program design)	3.0	93 (28)

^aLikert scale: 1 = not comfortable with ability to apply this best practice; 2 = understand the concept but not comfortable applying it; 3 = fairly comfortable with best practice and my ability to apply it; 4 = confident in ability to apply the best practice; 5 = consider myself an expert.

comprehensive, can serve as resources for program leaders when determining if and how well best practices are being implemented in their programs. In addition, the case studies from SNAP-Ed programs, provided in

the report on the SNAP Web site,¹² offer examples of ways to implement specific best practices. Nutrition education program leaders might also consider results from the survey of ASNNA membership described earlier

(Table) when planning professional development and performance management for themselves and other professional staff members. For example, a relatively high number of survey respondents indicated an

interest in staff development related to several Evaluation best practices.

Ideally, behavior change theories drive the design and delivery of nutrition education, because efficacy is increased with the appropriate use of theory.^{2,19,20} Multiple theories have been used with low-income audiences,²¹ most commonly, the Health Belief Model, Theory of Planned Behavior, Social Cognitive Theory, and Transtheoretical Model.^{21–23} Theory aids program planners (SNAP-Ed implementers) in defining both a target audience and proven methods for producing behavior change within that audience. Some theories are more appropriate with respect to specific learning objectives and/or target audiences.^{1,23} In addition to a theoretical basis, nutrition education programs are strengthened when grounded in research. An evaluation of a curriculum in a peer-reviewed journal,^{1,24} a list of references used in developing a curriculum, and expert panel reviews^{1,25} provide support for education materials and strategies being evidence-based.

When developing and delivering evidence-based curricula, messages, and materials, nutrition educators ideally consider characteristics of their target audience, including their reading level, age, and cultural background.^{1,18} The use of age- and literacy-appropriate visuals and activities to engage the target audience is important.¹ Food preparation strategies and recipes are more effective when they support learning objectives and are appropriate for the economic status and culture of the target population.

Evaluation efforts are preferably integrated into program design, program delivery, educator training, and appropriate levels of the Social Ecological Model. When selecting evaluation measures, the purpose, duration, and intensity of an intervention are factors to consider,^{26,27} as well as any need to collect objective (non-self-report) assessments.²⁸ Tailoring evaluation tools to the delivery channels, targeted behavior changes, selected theories, dosage of intervention, and characteristics of the target audience is essential.^{27,29} Evaluation planning is part of initial program planning. A

comprehensive evaluation plan typically involves several evaluation stages (formative, process, outcome, and impact) that occur at different times in the intervention for different purposes.^{27,30} Sound evaluations determine whether participants are gaining skills from experiential learning, goal setting, and other kinesthetic learning activities.¹ When programs are implemented using ≥ 1 level of the Social Ecological Model,¹⁴ evaluation of each level is necessary to determine whether participants are gaining knowledge and/or learning skills as intended.

Effective initial or ongoing training for nutrition educators includes information relevant to evaluation purposes and protocols, identified as the area of greatest need in the survey.^{31,32} If educators are involved in collecting evaluation data, appropriate training will allow them to collect valid data with high fidelity that can better capture the effectiveness of the program.³³

Fidelity refers to implementation of interventions and evaluations consistently and as designed.^{34–36} When curricula are developed using appropriate theory and content, the likelihood that the efficacy of an intervention will be replicated in new settings is enhanced if the curricula are delivered as designed (ie, with fidelity).^{2,34–36} Using a curriculum in its entirety rather than piecing together multiple resources is more appropriate, because this helps to ensure fidelity to the original design, including the theoretical basis and educational content.^{1,25} Any adaptations to curricula must retain critical design aspects to maintain the evidence base.¹⁸

When multiple sites and educators implement the same intervention with high fidelity, the aggregation of program outcomes becomes feasible and broadens the generalizability of results. Frontline staff must understand the importance of curriculum fidelity and know how to maintain it. This understanding arises from consistent and thorough training on the importance of delivering the curriculum as designers intended, observations of educators to monitor fidelity, and appropriate collection of evaluation data from program participants.

Although the best practices described in this project were identified with direct education in mind, most are appropriate for PSE approaches. However, further investigation of best practices for PSE strategies is warranted.^{5,37}

The report does not serve as a systematic review of literature. Further research is warranted to build on this report to identify current critical findings of nutrition education research across these domains that could be applied to other disciplines, such as public health and dissemination and implementation science, as well as gaps in the research that could be investigated. In addition, more comprehensive assessments of staff and supervisors' professional development requirements are needed, going beyond what is described in this report.

Nutrition educators and programs serving low-income audiences face many challenges besides the serious health issues that are often highly prevalent among this population (eg, a high incidence of almost all chronic disease³⁸ and obesity,³⁹ including among children).⁴⁰ Yet, future federal funding for programs benefiting low-income audiences is at risk.^{41–43} Nutrition education programs must use their limited resources wisely. By incorporating specific best practices, including comprehensive evaluation strategies, and establishing evidence-based outcomes, program leaders can document a positive return on investment for stakeholders and justify continued and increased funding.¹

In all likelihood, no nutrition education program will exhibit all 28 best practices. Nonetheless, *Best Practices in Nutrition Education for Low-Income Audiences*¹² can serve as a resource to refine and/or improve current programmatic processes, including the design, delivery, and evaluation of interventions.

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