Improving the Quality of Data From EFNEP Participants With Low Literacy Skills: A Participant-driven Model

Marilyn S. Townsend, PhD, RD[1]; Chutima Ganthavorn, PhD[2]; Marisa Neelon, MS, RD[3]; Susan Donohue, MA[4]; Margaret C. Johns, MPA, RD[5]

ABSTRACT

Low literacy skills and poor evaluation tool readability combined with the stresses of the classroom environment create a high cognitive load for Expanded Food and Nutrition Education Program (EFNEP) participants, resulting in lower quality data. The authors advocate for 9 strategies for improving the participant cognitive load for the evaluation process using the EFNEP *Family Record* as an example.

Key Words: evaluation, EFNEP, low literacy, low-income, cognitive load, enrollment form (*J Nutr Educ Behav*. 2014;46:309-314.)

Accepted October 9, 2013. Published online November 20, 2013.

INTRODUCTION

Federally funded programs such as the Expanded Food and Nutrition Education Program (EFNEP) and Supplemental Nutrition Assistance Program–Education (SNAP–Ed) are required to collect participant data for program evaluation.[1,2] In its report to Congress, the US Department of Agriculture stresses the need to improve the quality of nutrition education program data.[3] However, collecting such data in the group setting is a challenge for the EFNEP educator,[4] and many participants experience embarrassment and stress when they are unable to comprehend elements on the evaluation forms.[5] Additionally, in California, educators report that the respondent burden is substantial, as data collection takes the entire first class, thus raising dropout rates.[6,7]

Literacy and Group Delivery

More than 23% of California residents lack basic reading and writing skills.[8] It is from these Californians that EFNEP recruits. Of California's EFNEP participants, 44% have not completed high school, and 73% are Hispanic. The delivery method shifted from individual in the home to a group setting during the 1980s and 1990s.[9,10] Today, 90% of California participants are enrolled in groups, which is comparable to 85% on a national level.[1] An unintended consequence of shifting the delivery method from the educator completing the forms in the participant's home is that participants are now expected to read and write to complete the self-administered evaluation forms, including the 24-hour diet recall.[6,7] Yet the national EFNEP evaluation tools have remained essentially the same and do not reflect the changes in delivery in the group setting, with its corresponding high cognitive load for the participant.[1,7,11]

Purpose

The viewpoint presented in this paper is that data quality is compromised because of the high cognitive load for the target EFNEP population, particularly those with limited literacy skills. Using the EFNEP demographic form as an example, an approach to lowering cognitive load, and thereby improving data quality, is presented.

COGNITIVE LOAD THEORY

The principles of Cognitive Load Theory (CLT)[12] are applicable and useful to guide the development of the EFNEP evaluation process. Cognitive load refers to the total amount of cognitive activity, or "thinking power," required by the participant to respond to all items in the evaluation process.

The authors, who have a combined 90 years of experience with EFNEP, identified elements contributing to cognitive load for the EFNEP evaluation process. This cognitive load is the total, including the interactions, of all of the following elements.[12] These elements are total text on data collection tools, total number of questions or items, complexity of items, unfamiliar words, stresses from the group process, extraneous noise from other participants, language spoken by the educator, language of evaluation forms and their readability, participant sensitivity to items, noise from outside the classroom, participant inability to read and write, number of steps to be recalled from working memory to

[1]Nutrition Department, University of California at Davis, Davis, CA
[2]University of California Cooperative Extension, Moreno Valley, CA
[3]University of California Cooperative Extension, Pleasant Hill, CA
[4]University of California Cooperative Extension, Oroville, CA
[5]University of California Cooperative Extension, Bakersfield, CA
Address for correspondence: Marilyn S. Townsend, PhD, RD, Nutrition Department, University of California at Davis, Davis, CA 95616; Phone: (530) 754-9222; E-mail: mstownsend@ucdavis.edu

http://dx.doi.org/10.1016/j.jneb.2013.10.004

respond accurately, and the participant's first language. Of these 13 elements, the first 10 are partially or completely under the control of the EFNEP administrator, nutrition specialist, and/or educator.

GUIDING PRINCIPLES

To accomplish the purpose, the authors advocate for a new framework with a shift in priorities for the evaluation process (Table 1). The new guiding principles give top priority to meeting the needs of the participant providing the evaluation data.[13] The second priority is to meet the needs of the educator collecting the data. The third priority is given to the data entry person. Last priority would go to the administrator, nutrition specialist, and evaluator who design the evaluation and interpret the data, but are not directly engaged in the data collection process (Table 1).[13-15]

The authors' perception is that the traditional EFNEP evaluation tools (Figure A) send unintended messages to participants and educators that the evaluation is not important and that it is difficult, contributing to lower data quality, that is, incomplete and inaccurate data.[6,7] The tools give top priority in the evaluation process to data entry staff and administrators (Table 1). The existing *Family Record* scored "difficult reading" on the Flesch Reading Ease and ninth grade (8.8) using Flesch-Kincaid Readability Index (Figure A).[16,17]

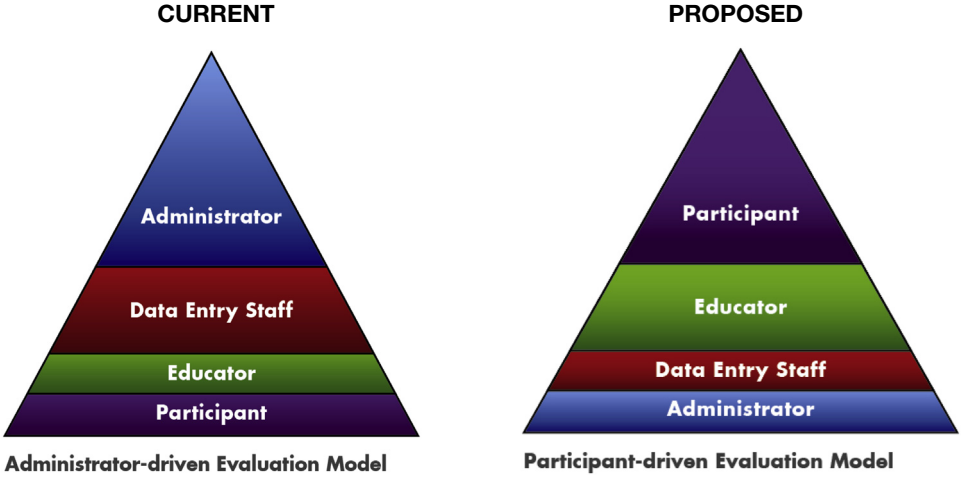
Evaluator's Division of Responsibility

The guiding principles provide the foundation for the Evaluator's Division of Responsibility model.[15] Nutrition education professionals decide the general focus of the evaluation tool, as well as the specific content of each item (Table 1). This assessment of adequacy is referred to as content validity.[4,18,19] The participant decides how to ask each item, the sequence, item grammatical structure, and the format for the overall tool.[13,19] This assessment of suitability for the target audience is referred to as face validity.[4,14,19]

Participant-driven Evaluation Tool

The product of implementation of the guiding principles and the Evaluator's Division of Responsibility is a participant-driven evaluation tool (Table 1). Top priority in the evaluation process is no longer given to the data entry person and administrator. Item sequencing and formatting

Table 1. A Comparison of 2 Nutrition Education Evaluation Models (Current and Proposed): Guiding Principles, Content, Text, Message, and Perceptions



Guiding principles	First priority goes to the administrator and then data entry staff. The sequence of items on tool is designed to minimize data entry time.	First priority is to meet the needs of the EFNEP participant. Second priority is to meet the needs of the EFNEP educator.
Evaluation tool content	Determined by administrator	Determined by administrator
Evaluation tool text, sequence, format	Determined by administrator and data entry preferences	Heavily influenced by participant preferences
Message to educators and participants	"Evaluation is difficult, a requirement; get it over fast."	"Evaluation is important!"
Meeting federal guidelines	Yes	Yes
Perception of the low-literate client	Threatening	Nonthreatening
Perception of educator	Does not motivate or energize	Energizes educators

EFNEP indicates Expanded Food and Nutrition Education Program.