

SUMMARY REPORT OF CONTRACT TO PROVIDE NUTRITION EDUCATION CONSULTANTS

**For
The Nutrition Services Program Integrity Workgroup
in the Southwest Region**

April-October 2000

Prepared by:

Cheryl Achterberg, Ph.D.
Dean, Schreyer Honors College
Professor, Department of Nutrition
The Pennsylvania State University

Mary Lou Kiel, Ph.D., R.D. Jeannie McKenzie, Dr.P.H., R.D.
Research Associates
Department of Nutrition
The Pennsylvania State University

Carla Miller, Ph.D., R.D.
Assistant Professor
Department of Nutrition and Foodservice Systems
University of North Carolina at Greensboro

TABLE OF CONTENTS

(*asterisk and page # indicates section is included on the web site)

	Page #
<i>Introduction</i>	
I. *Background and Purpose of Project Organization of This Manual - Preparation and Use What do Nutrition Educators Do	3
<i>1. Session 1: Theory Base for Nutrition Education – May, 2000</i>	
* Session Agenda and Objective	4
Content Overview:	
Section 1A Theory Base for Nutrition Education	
Section 1B Communication/Social Marketing	
Session 1 Handouts with Index	
<i>2. Session 2: Best Practices in Nutrition Education – July, 2000</i>	
* Session Agenda and Objectives	6
Content Overview:	
Section 2A Learning Theory	
Section 2B What is Meaningful Nutrition Education?	
Section 2C Cultural Sensitivity	
Section 2D Working with Adults and Low Literacy Audiences	
Section 2E Working with Children and Adolescents	
Section 2F Presentations	
Section 2G Visual Aids	
Section 2H Color Psychology	
Session 2 Handouts with Index	
<i>3. Session 3: Evaluation of Nutrition Education – August, 2000</i>	
* Session Agenda and Objectives	8
Content Overview:	
Section 3A Evaluation	
Session 3 Handouts with Index	
<i>4. Evaluation and Planning Resources</i>	
*Reference List on Evaluation	10
*Nutrition Education Materials Resource List	12
<i>5. Summary</i>	
*Final Report	14
*Matrix of Good Practices for Nutrition Education in a WIC Setting (Separate document)	

Introduction

Background and Purpose of Project

In April, 2000, The Nutrition Services Initiative Workgroup contracted with The Pennsylvania State University to provide experts in nutrition education as consultants in an effort to help improve the effectiveness of nutrition education in the State Agency WIC Programs for the Southwest Region.

The intent of sharing this information is to provide a springboard for other regions that would like to undertake a similar process. Each region would need to go through the steps of identifying the issues to be addressed, and selecting the most effective method(s) to work on their needs. The Southwest Region began with a workgroup of state and territorial nutrition directors who had a vision to increase the effectiveness of WIC nutrition education. They chose to address their plan via seminars for the workgroup members, with the result that what they learned could be passed down to the grassroots educator level. One of the ways they determined to make this happen was through a regional teleconference entitled “Nutrition Education: On the Road to Excellence,” to be held April 26 & 27, 2001.

A Nutrition Education Ideas Resource Manual was developed as one of the deliverables for use in WIC nutrition education activities within the Southwest Region. The content of the manual reflected the three separate 10 hour intensive seminars on effective nutrition education as well as input from the workgroup at the final seminar. The initial seminar presented information about theory-based nutrition education. The second seminar presented best practices in nutrition education and the final seminar addressed evaluation of nutrition education.

Included on the following pages are excerpts from the manual. These examples can assist other regions in making a plan to assess and address their needs. To provide the whole manual would be inappropriate; it was designed as a support document for the people who attended the workgroup seminars. It would be like giving a student the notes without attending class! Additionally, each region will want to select topics tailored to their audience.

To provide an overview of the process and content, we have included the manual’s Table of Contents, the Agendas and Objectives for each of the three seminars, the Final Report of the Project, a matrix of good practices in nutrition education, and several reference/resource lists. We hope that this material will help other regions as we all strive toward the vision of improving the effectiveness of WIC nutrition education.

**Education Plan for the Nutrition Services Program
Workgroup Initiative of the
State and Territorial Agency WIC Programs
In the Southwest Region**

**Session I –Theory Base for Nutrition Education*
May 1 and 2,
Santa Fe, New Mexico**

Presenter: Dr. Cheryl Achterberg
Dean, Schreyers Honor College
The Pennsylvania State University

Day 1

- I Overview of the Session
 - What is nutrition education?

- II Philosophical Perspectives
 - Why do we do nutrition education?
 - Finding purpose and justifying process

- III The Challenge of Changing Dietary Behavior
 - Open discussion

- IV Nature of Theory

- V Brofenbrenner's Ecosystem Theory

Day 2

- VI How do People Learn?-Part I Theoretical Perspectives
 - History of theory in nutrition education (Knowledge, Attitude, Behavior)
 - Prochaska's stages of change (assignment: write questions to assess change)
 - Learner readiness
 - PSU model
 - Social Marketing
 - Systems approach

- VII Wrap-up/Discussion of Sessions II and III

*Recommended reference: *Health Behavior and Health Education Theory Research and Practice*, 2nd edition, K. Glanz, F. Lewix, and B. Remer, editors. Jossey-Bass Publishers, SanFrancisco, 1997.

OBJECTIVES—THEORY BASE FOR NUTRITION EDUCATION

The objectives for this session are: To help you develop your own thinking skills about nutrition education, and to introduce you to the major theories in nutrition education. The focus of this dialogue is on the actual practice of nutrition education, but it is practice that is informed by the latest research and by concepts and methods from other related disciplines including (but not limited to) anthropology, psychology, sociology, human development, marketing/business, and of course, education.

Special notice:

A tolerance for ambiguity and for reasoned argument will be an asset today. Participants will be expected to present their own views, to ask questions and debate perspectives throughout the session. To introduce you to what I mean by ambiguity, let us examine three concepts: green, justice, and pretty. Most of the concepts that we will need to deal with from an educational or learning perspective will not be as precise as the definition for green, nor will they be as subjective as the definition of “pretty.” Rather they will be somewhere in between such as with the concept of “justice” – which most should agree has some core of meaning that all can identify with, but it is difficult to put exact boundaries on the idea under debate. That is why a major portion of our discussion will be to push each other to explore, expand, and define the meaning of key concepts in our field as much as possible.

Consider now the concepts vitamin C, health and delicious. Each are concepts that the nutrition educators in WIC deal with on a daily basis, but how you deal with them will depend upon how you define these concepts and also on the philosophy that you attach to them consciously or unconsciously. Philosophies are very rarely attached to ideas that are as concise as “green” or “vitamin C” but books are written on the meaning of ideas like “health”, “justice”, and even “delicious”. What is important about these concepts is that they have the power to move, motivate, or change the scheme of things that concepts like “green” or “vitamin C” do not have.

Session II- Best Practices in Nutrition Education*
July 10 and 11, 2000
Dallas, Texas

Presenters: Dr. Mary Lou Kiel
Instructor in Nutrition, Department of Distance Education
Dr. Jeannie McKenzie
Research Associate, Department of Nutrition
The Pennsylvania State University

Day 1

- I How do People Communicate?
- Social learning theory (locus of control/self-efficacy)
 - Facilitated group discussion
 - Cultural sensitivity
 - Open discussion
- II How do People Learn?-Part II
- Meaningful learning
 - Adult learning

Day 2

- III General Education Principles—Findings from the Education Research Literature
- Tips for working with:
- Adult learners
 - Tips to organize content/curricula
 - Tips to present materials
 - Tips for graphic design
 - Tips for leading discussion
- IV Special Audiences—Tips for working with these audiences in a WIC setting
- Preschool children
 - Adolescents
 - Low-literacy adults
 - Multicultural/ethnic audiences
Hispanic, Native American, African American, other
- V Wrap-up/Discussion of Teleconference

*Recommended reference: *How People Learn Brain, Mind, Experience, and School*. J. Bransford, A. Brown, and R. Cocking, editors. National Academy Press, Washington, D.C., 1999.

GOALS:

We hope you will “take home:”

- Some BRAND NEW information;
- Some techniques you knew a little about, and now you know more;
- Some techniques you have used, and now you have shared others’ experiences in using them;
- Some techniques you have used frequently, but now you have more support and reinforcement for using them;
- Some techniques you could have given the presentation on, but it is beneficial to hear other’s viewpoints!

LEARNING OBJECTIVES:

- For each participant to learn about at least one technique for delivering nutrition education effectively;
- For each participant to learn more about at least one technique that they wil TAKE HOME and INCORPORATE into daily practice.

Session III- Evaluation of Nutrition Education*
August 14 and 15, 2000
Dallas, Texas

Presenters: Dr. Carla Miller
Assistant Professor
Department of Nutrition and Foodservice Systems
University of North Carolina at Greensboro

Dr. Jeannie McKenzie
Research Associate
Department of Nutrition
The Pennsylvania State University

Day 1

- I What is Evaluation?
 - Who is it for?
- II Process Evaluation versus Outcome Evaluation
 - One or the other or both?
- III Qualitative versus Quantitative Research and Evaluation
 - Which, when, why?
- IV Validity and Reliability of Evaluation Measures
 - Key considerations

Day 2

- V How to Evaluate a Curriculum
- VI Construction of Multiple Choice Tests and Questionnaires
 - What you need to know
- VII Interviews for Evaluation/Research Purposes
- VIII Concept Maps
 - Examples (why women retain water during pregnancy)
- IX Wrap-up/Discussion

*Reference list on evaluation follows

Evaluation of Nutrition Education—Objectives

Following this presentation, you will be able to:

- Define the term evaluation.
- Identify and explain differences between the four types of evaluation.
- Compare qualitative versus quantitative evaluation, and useful models that integrate both methods.
- Discuss measurement issues, including credibility, validity, and reliability.
- Construct basic multiple choice assessment instruments.
- Discuss the use of interviews for research and evaluation.
- Use concept maps to help organize material and see which concepts are linked.

REFERENCE LIST ON EVALUATION

- Cook, T.D., and D.T. Campbell. 1979. *Quasi-Experimentation: Design and Analysis Issues for Field Settings*. Boston: Houghton Mifflin Company.
- Conover, W.J. *Practical Nonparametric Statistics*. 1971. New York: John Wiley & Sons.
- Cody, R.P. and J.K. Smith. *Applied Statistics and the SAS Programming Language*. 1991. Englewood Cliffs, NJ: Prentice Hall.
- Dillman, D.A. *Mail and Telephone Surveys: The Total Design Method*. 1978. New York: John Wiley & Sons.
- Gall, M.D., Borg, W.R., and J.P. Gall. 1996. *Educational Research: An Introduction*. Longman Publishers USA.
- Glaser, B.G., and A.L. Strauss. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. 1967. New York: Aldine de Gruyter.
- Keppel, G. *Design and Analysis: A Researcher's Handbook*. 1982. Englewood Cliffs, NJ: Prentice Hall.
- Marshall, C., and G.B. Rossman. *Designing Qualitative Research*. 1989. London: Sage Publications.
- Miles, M.B., and A.M. Huberman. *Qualitative Data Analysis: A Sourcebook for New Methods*. 1984. London: Sage Publications.
- Morgan D.L. (ed.). *Successful Focus Groups: Advancing the State of the Art*. 1993. London: Sage Publications.
- Patton, M.Q. *Qualitative Evaluation Methods*. 1984. London: Sage Publications.
- Rovine, M.J., and A. von Eye. *Applied Computational Statistics in Longitudinal Research*. 1991. Boston: Academic Press, Inc.
- Sommer, R., and B.B. Sommer. *A Practical Guide to Behavioral Research*. 1986. New York: Oxford University Press.
- Slavin, R.E. *Research Methods in Education: A Practical Guide*. 1984. Englewood Cliffs, NJ: Prentice Hall.
- Snedecor, G.W., and W.G. Cochran. *Statistical Methods*. 1980. Ames, IA: The Iowa State University Press.

Strauss, A., and Corbin, J. 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. 1990. London: Sage Publications.

Yoddumnern-Attig, B., Attig, G.A., Boonchalaksi, W., Richter, K., and A. Soonthorndhada. (eds.). 1993. *Qualitative Methods for Population and Health Research*. Mahidol University at Salaya, Thailand: Institute for Population and Social Research.

Zar, J.H. *Biostatistical Analysis*. 1974. . Engelwood Cliffs, NJ: Prentice Hall.

NUTRITION EDUCATION MATERIALS RESOURCE LIST

American Academy of Pediatrics
P.O. Box 927
141 Northwest Point Blvd.
Elk Grove Village, IL 60009-0927

American Cancer Society
Cancer Information Center
1701 Rickenbacker Dr., Suite 5B
Sun City Center, FL 33573-5361
800-ACS-2345

American Dental Association
211 E. Chicago Ave.
Chicago, IL 60611-2678
312-440-2500

American Heart Association
Box BHG, National Center
7320 Greenville Ave.
Dallas, TX 75231
800-527-6941

Dannon Institute
120 White Plains Rd.
Tarrytown, NY 10591
914-332-1092

Community Nutritionary

Food and Nutrition Information Center
National Agricultural Library, Rm. 304
10301 Baltimore Blvd.
Beltsville, MD 20705
301-344-3719

March of Dimes
1275 Mamaroneck Ave.
White Plains, NY 10605
914-428-7100

National Cancer Institute
Office of Cancer Communications
Building 31, Room 10824
Bethesda, MD 20892
800-4-CANCER

National Dairy Council
O'Hare International Center
10255 West Higgins Rd. Suite 900
Rosemond, IL 60018
312-696-1020
(*Dairy Council Digest*)

National Heart Lung & Blood Institute
National High Blood Pressure Education
P.O. Box 30105
Bethesda, MD 20824-0105
301-951-3260

National Livestock and Meat Board
444 N. Michigan Ave.
Chicago, IL 60611
312-467-5520
(*Nutrition News*)

National Maternal & Child Health Clearinghouse
38th and R St. NW
Washington, DC 20057
202-625-8410

Society for Nutrition Education
2001 Killebrew Dr. Suite 340
Minneapolis, MN 55425-1882
415-444-7133
(*Journal of Nutrition Education*; monthly Gems section)

Tufts University, School of Nutrition
203 Harrison Ave.
Boston, MA 02111
(*Tufts Diet and Nutrition Newsletter*)

USDA Cooperative Extension Service
Home Economics
14th St., SW and Independence Ave.
Washington, DC 20250
202-720-2791

Final Report

Prepared for: The Nutrition Services Program Integrity (NSPI) Workgroup of the Southwest Region

Date: October 17, 2000

Introduction

On April 21, 2000 The Pennsylvania State University entered into a contract with the Pueblo of Zuni WIC Program to provide experts in nutrition education as consultants to the Nutrition Services Program Integrity (NSPI) workgroup. The NSPI workgroup initiative was created to improve the effectiveness of nutrition education in the State Agency WIC Programs in the southwest region. Since that date, the contractor has worked directly with the NSPI workgroup members and its advisory board members to provide these consultative services.

On Sunday April 16, 2000, prior to the contract date, Drs. Cheryl Achterberg, Mary Lou Kiel, and Jeannie McKenzie traveled to Philadelphia to the NAWD convention in order to meet with NSPI workgroup and advisory board members. The purpose of this introductory meeting was to review the contract's timeline and list of deliverables. Adjustments were made to the project's timeline, where needed, and the project officially started five days later.

Faculty

The contract stipulated that three PhDs and additional support staff with a strong record of nutrition education research, and first hand knowledge of the nutrition education in WIC work on this project. Drs. Achterberg, Kiel and McKenzie formed the core for the Penn State expert team. In addition, Dr. Carla Miller from the University of North Carolina at Greensboro routinely collaborated on the project. These four experts directed the project at Penn State and were assisted by Patricia Treanor, a graduate student in Nutrition and Stacey Hugney, the Nutrition Center's staff assistant.

Time Frame

The timeline for deliverables that was established at the April 16, 2000 meeting was adhered to and all deadlines were met by the contractor.

Accomplishments

The following list provides an overview of what the contractor provided to the NSPI work group between April 18 and October 17, 2000:

1. April 18 - the review article describing self-efficacy and locus of control was mailed to all workgroup and advisory members.
2. April 24 - the draft education plan for the three intensive nutrition seminars was mailed to all workgroup and advisory members.
3. May 1 and 2 - Dr. Achterberg presented *Theory Base for Nutrition Education* to the workgroup in Santa Fe for 11 hours and reviewed the draft education plan.
4. May 15 - the final education plan and additional reprint on the use of theory was mailed to all workgroup and advisory members.
5. May 18 - Drs. Kiel and McKenzie were part of the workgroup's conference call about developing a survey instrument to prioritize topics for the proposed teleconference.
6. May 23 - an additional chapter reference about obesity in low income women was mailed to Darlene Irwin.
7. June 20 - a literature review of the impact of the Special Supplemental Nutrition Program for Women, Infants and Children on nutrition-related behavioral outcomes was mailed to all workgroup and advisory members.
8. July 10, 11 and 12 - Drs. Kiel and McKenzie presented *Best Practices in Nutrition Education* to the workgroup in Dallas for 11 hours. For an additional 2 hours they provided consultation for the workgroup's planned teleconference in 2001.
9. August 4 - Drs. Achterberg and McKenzie were part of the workgroup's conference call about the teleconference.
10. August 14 and 15 - Dr. Miller presented *Evaluation of Nutrition Education* to the workgroup in Dallas for 10 hours. Dr. McKenzie assisted with the session and ascertained the workgroup's expectations for the remaining project deliverables.
11. August 29 - an addendum to the literature review summarizing nutrition education research for preschool aged children in the general population was mailed to all workgroup and advisory members.

12. September 6 - Drs. Kiel and McKenzie mailed written evaluations for the curricula and nutrition education materials back to the workgroup members who submitted them. All materials were returned to those individuals.

13. September 12 - Dr. McKenzie was part of the workgroup's conference call in which progress towards obtaining teleconference speakers was discussed and concerns expressed.

14. October 17 - a nutrition ideas resource manual, an evaluation resource package and this final report along with a matrix for effective nutrition education was mailed to all workgroup and advisory members.

15. At the end of each month, beginning in May, a monthly report was mailed to Ruby Wolf outlining what the Penn State group had worked on for the project that month.

16. Darlene Irwin was in regular telephone and email communication with the Penn State faculty.

Products

The following resources were produced for the NSPI workgroup and advisory board members for use in the State Agency WIC Programs:

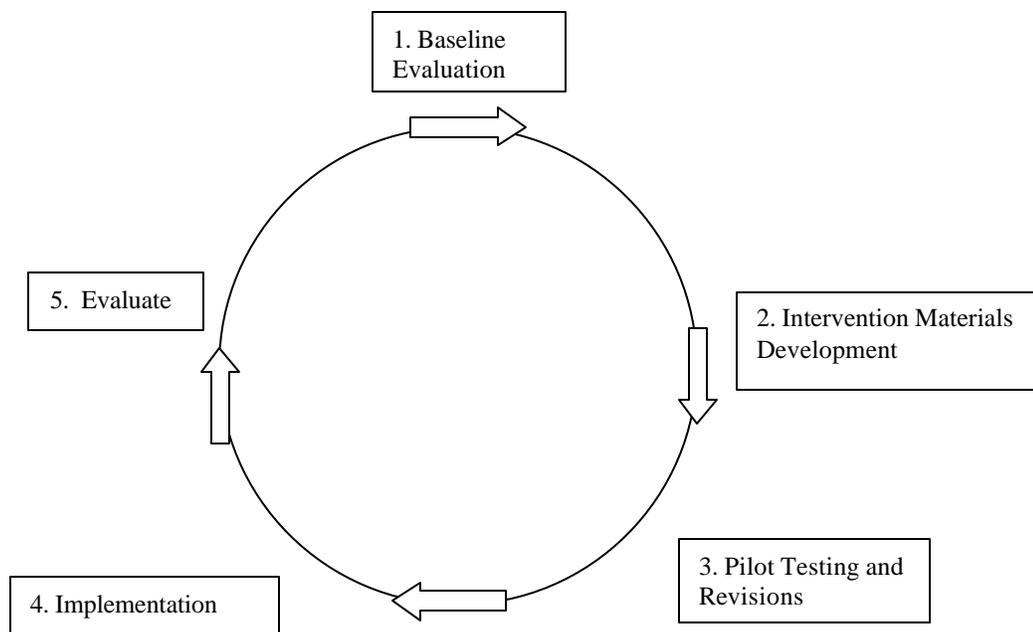
1. A literature review describing the impact of WIC on nutrition-related behavioral outcomes and summarizing nutrition education research for preschool aged children in the general population.
2. A nutrition ideas resource manual for nutrition education activities in the Southwest region.
3. An evaluation resource package for the Southwest region.
4. A good practices matrix based upon length of time available and effective strategies to use during nutrition education sessions.
5. A series of reprinted research articles describing strategies and methodologies to consider when developing effective nutrition education programs.

Recommendations

The project faculty met and agreed upon four recommendations for the NSPI workgroup. The faculty encourages the workgroup to act upon these recommendations in order to help improve the effectiveness of nutrition education in the State Agency WIC Programs in the Southwest Region. The recommendations are:

1. **Nutrition education programs must be evaluated.** The process needs to be ongoing as represented in Figure 1. The first step is an initial baseline evaluation, followed by intervention materials development (2), pilot testing and revisions (3), implementation (4), and evaluation (5). The cycle continues over time so that valuable data describing the accountability of each nutrition education program is always available.

Figure 1 The Nutrition Education Evaluation Cycle



2. **Serve all eligible age groups in the WIC Program with nutrition education.** To date, nutrition education has targeted pregnant, and breastfeeding women as well as the mothers of infants for the majority of nutrition education sessions. As described in the addendum to the literature review, preschool children are eager learners. Providing age-appropriate nutrition education for this group could help to establish many

positive eating behaviors. This could be a very rewarding area for WIC nutrition educators.

3. Use multiple strategies when conducting nutrition education sessions. As presented in this final report's matrix on good practices in nutrition education, no one modality is the answer to every nutrition education situation. One-on-one nutrition counseling along with print handouts may be the best choice for one situation. Group discussion after viewing a video may be the most efficacious approach in another situation. Understand your audience and tailor the message delivery as well as the message to the audience.

4. Continue to collaborate and share lessons learned i.e., successful approaches. To stand above the rest, professionals must have a vision and be willing to take risks. Members of the NSPI workgroup have a vision, to improve the effectiveness of nutrition education in the Southwest Region and have been willing to take risks to achieve this goal. They represent a group of colleagues from five state agencies and 16 Indian Tribal Organizations. They collaborated with colleagues from Penn State on this project. For the upcoming teleconference, they have collaborated with speakers from various universities, businesses, and governmental agencies across the country. Such ongoing collaboration is vital to continued success after this project is formally over.

Matrix of Good Practices

The following two pages present a matrix of good practices in nutrition education based upon the length of time, space, personnel, and other available resources. This matrix should be used only as a guide and a starting point when individual agencies are planning their nutrition education programs. The matrix also presents opportunities for nutrition education beyond the clinic setting i.e. experiential learning through growing gardens, attending Farmers' Markets and supermarket tours.

Conclusion

The past six months have been extraordinarily productive. A large volume of nutrition education information was presented at the three intensive seminars and in the literature review. An enormous amount of nutrition education material has been compiled into the ideas resource manual, the evaluation package and the matrix. Four recommendations have been made to the NSPI workgroup and its advisory board to help improve the effectiveness of nutrition education in the Southwest Region. The Penn State faculty looks forward to the upcoming final meeting in New Orleans, the teleconference, and to observing positive strides in improving the effectiveness of nutrition education in the Southwest Region as well as the evaluation of these improvements.