

Healthy Habits

Washington WIC Program

FINAL REPORT

WIC Special Project Grant
Fiscal Year 2000



Healthy Habits

Washington WIC Program

FINAL REPORT

WIC Special Project Grant
Fiscal Year 2000

Authors:

Donna B. Johnson, RD, PhD Center for Public Health Nutrition and Nutritional
Sciences Program, University of Washington
Sheryl Pickering, Local Program Consultant, Washington State Department of Health,
WIC Program
Diana Birkett, MPA, MPH

Editor:

Monica Schaeffer, PhD, MPH

FNS Project Officer:

Marta Kealey, RD
Nutritionist
Food and Nutrition Service, USDA, Alexandria, VA

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, DC 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Publication Date: June 2006

Healthy Habits
Washington WIC Program

Table of Contents

Abstract	1
1.0 Introduction and Background	3
1.1 The Characteristics of the WIC Program in Washington State	3
1.2 Why <i>Healthy Habits</i> for Washington State?	3
2.0 The Theoretical Basis for the <i>Healthy Habits</i> Project	5
2.1 Participant-Centered Services	5
2.2 Social-Ecological Model of Human Behavior Change.....	6
2.3 Social Marketing Principles	8
2.4 <i>Stages of Change</i>	9
3.0 Implementation: How Does <i>Healthy Habits</i> Work?	11
3.1 Implementation of the Nutrition Education Modules.....	11
3.1.1 Development Phase: Nutrition Education Modules	11
3.1.2 Delivery Phase: Nutrition Education Modules.....	17
3.1.3 Evaluation Phase: Nutrition Education Modules.....	21
3.2 Implementation of the Mini-Grant Program.....	24
3.2.1 Development Phase: Mini-Grant Projects	24
3.2.2 Delivery Phase: Mini-Grant Projects	26
3.2.3 Evaluation Phase: Mini-Grant Projects	26
4.0 Impact of <i>Healthy Habits</i> : Results of Evaluation	28
4.1 Impact of the Nutrition Education Modules	28
4.1.1 Survey of Participants and Staff.....	28
4.1.2 Summary from Client Information Management System (CIMS)	29
4.1.3 Local Agency Project Summaries.....	30
4.2 Impact of the Mini-Grant Program.....	31
4.2.1 Summary of Final Reports	31
4.2.2 Training Sessions Evaluation	32
5.0 Lessons Learned and Recommendations	34
5.1 Lessons Learned from the Development Phase of <i>Healthy Habits</i>	34
5.2 Lessons Learned from the Implementation Phase of <i>Healthy Habits</i>	35
5.3 Considerations for Future Research	36
6.0 Resources	38

6.1	Tools and Forms	38
6.2	People to Contact	38
6.3	Other Helpful Resources	39
7.0	Acknowledgements	40
Appendix A: Results of the Evaluation of the <i>Healthy Habits</i> Education Modules		41

Healthy Habits

Washington WIC Program

Abstract

WIC offers a unique mechanism to respond to the increasing prevalence of lifestyle-related diseases in low-income families. The *Healthy Habits* project was developed to augment the tools available to WIC in its efforts to promote healthy lifestyles. The purpose of *Healthy Habits* was to provide training, materials and support to local WIC staff so that staff could more effectively promote healthy behaviors in WIC families and in their communities.

The goals of *Healthy Habits* were to:

- Increase local WIC staff expertise and ability to provide effective participant-centered, behavioral approaches to nutrition services.
- Increase local WIC capacity to apply public health approaches to develop and sustain community-based nutrition services and chronic disease risk reduction.

Healthy Habits had two components: 1) Newly developed nutrition education modules for use by local agencies and community partners to promote family meals or family physical activity; and 2) A program of mini-grants awarded to local agencies to support integration of the newly developed modules and other innovative approaches into their programs. The project incorporated theoretical approaches from social-ecological models, social marketing, and *Stages of Change*, and included a strong focus on evaluation. Surveys and focus groups of WIC participants and staff also provided valuable information used in component design.

In a six-month implementation period, use of the *Healthy Habits* modules was associated with staff and participant behavior change. WIC families learned new ways to be physically active together and how to incorporate family meals into their lives.

Most local agencies found the new modules to be useful to staff and participants. Agencies that received mini-grants reported that their staff gained public health skills and competencies.

Healthy Habits is a participant-centered, community-wide approach in which nutrition education methods and materials are tailored to both participant needs and staff capabilities and time constraints. The educational materials can be used in the WIC setting, to support the development of a more participant-centered program and in partnering agencies and programs, to support community-wide initiatives. Clear communication and adequate resources are essential for a successful statewide effort.

1.0 Introduction and Background

1.1 The Characteristics of the WIC Program in Washington State

The Washington WIC Program serves more than 265,000 women and children.¹ Nearly half of all infants born in Washington are served by WIC; in seven rural counties, more than 70% of the infants born are on WIC. More than 75% of WIC households are working families and over 9,800 women and children on WIC live in military households. In Washington, WIC serves a diverse population comprised of: 49.4% Caucasian, 30.4% Hispanic, 7.9% Black, 6.8% Asian/Pacific Islander, and 5.4% American Indian. In 2003, services were provided in over 45 languages.

WIC services are provided in all 39 of Washington counties by over 1,200 staff. Washington WIC contracts with 67 local agencies, including county health departments/districts, tribal governments, tribal health clinics, migrant health centers, community health centers, hospitals, and other community-based organizations. WIC services are offered at 235 sites in Washington State, from a very large urban center in Western Washington to a small rural town in Eastern Washington.

1.2 Why *Healthy Habits* for Washington State?

The *Healthy Habits* project was developed in response to Statewide concern about rapidly rising rates of obesity and related chronic diseases, which affect low-income families disproportionately. It built on existing strengths of the WIC Program and public health system in Washington State, and was based on the premise that obesity can be prevented by changing the way we live. The project was

¹ Information in this section is Washington WIC Program data from 2003.

complementary to the plan of work outlined in the Washington Nutrition and Physical Activity Plan.²

Healthy Habits provided training, materials and support to local WIC staff so that they could more effectively promote healthy behaviors in WIC families and in their communities. Project activities, which involved local WIC staff, WIC participants, and other community organizations serving WIC participants, were designed to fulfill the project's two main goals:

1. Increase local WIC staff expertise and ability to use participant-centered, behavioral approaches in nutrition services. This goal was addressed in the first component of Health Habits through staff training and support using newly developed nutrition education modules.
2. Increase local WIC capacity to apply public health approaches to develop and sustain community-based nutrition services. This goal was addressed in the second component of *Healthy Habits* by awarding competitive grants to local WIC agencies which, among other things, allowed training of local WIC staff in population-based approaches, program design, program evaluation and grant writing.

² Washington State Department of Health Nutrition and Physical Activity Program. Washington State nutrition and physical activity plan. Olympia, WA. Washington State Department of Health. 2003.

2.0 The Theoretical Basis for the *Healthy Habits* Project

The *Healthy Habits* project team knew that WIC was in a position to influence the development of health-related behaviors in their young participants. Lifelong habits are formed in the first five years of life: “From infancy through early childhood, feeding is where nutrition, development, and parenting come together.”³ For pregnant women, infants, and children, WIC offers an opportunity to prevent lifestyle related disease. To take advantage of this strategic position, the project team addressed the broader issues such as maternal and child overweight by targeting behavior change in families.⁴ The project team’s efforts to change behavior were focused through the application of several established and effective models, described below.

2.1 Participant-Centered Services

A study of participant satisfaction with the nutrition education component of the WIC Program in California showed that while participants were appreciative of the nutrition education they received, many were not completely satisfied and requested a more personalized approach.⁵ When participants are more involved in decision-making about the information and service they receive, they are more likely to develop self-efficacy, change their behavior, and have positive outcomes.^{6 7} *Healthy Habits* was therefore designed to support WIC staff in their efforts to transition to *participant-centered* nutrition services.

³ Miller S. Reinventing nutrition education in WIC: Discussion paper based on an April 1999 meeting of the National Association of WIC Directors. 1999.

⁴ Besharov DJ, Germanis P. Evaluating WIC. *Evaluation Review* 2000; 24(2):123-190.

⁵ Nestor B, McKenzie J, Hasan N, AbuSabha R, Achterberg C. Client satisfaction with the nutrition education component of the California WIC program. *Journal of Nutrition Education* 2001; 33(2):83-94.

⁶ Greenfield S, Kaplan SH, Ware JE, Jr., Yano EM, Frank HJ. Patients' participation in medical care: effects on blood sugar control and quality of life in diabetes. *Journal of General Internal Medicine* 1988; 3(5):448-457.

⁷ Travers KD. Nutrition education for social change: Critical perspective. *Journal of Nutrition Education* 1997; 29(2):57-62.

2.2 Social-Ecological Model of Human Behavior Change

Scientists have developed a model or framework with which to study the nature and mechanisms of human behavior change called the *social-ecological model of behavior change*. According to this model, behavior is influenced on multiple sociological levels simultaneously: the community, the family, institutional environments, and the individual. Changes in behavior on one level can lead to changes on other levels.^{8 9} According to this model, just telling WIC participants what to do to change their behaviors will not be effective. The model provides a framework for developing effective participant-centered services.¹⁰

Nutrition-related behaviors, like other human behaviors, are influenced by social and environmental influences. Children are influenced by the eating behaviors and attitudes of their parents, caregivers, and role models.¹¹ Children's nutrient intake is impacted by family meal patterns and TV viewing patterns in the family.^{12 13} Therefore, family involvement is essential for successful nutrition behavior change in children.¹⁴

The *Healthy Habits* project was modeled on this social-ecological model of health promotion. In accordance with this model, *Healthy Habits* operated on five levels by:

- 1) Addressing *individual* participants' needs and encouraging participants to overcome barriers and motivate themselves toward behavior change;

⁸ Alacay R, Bell RA. Promoting nutrition and physical activity through social marketing: Current practices and recommendations. University of California, Davis. 2000.

⁹ Gregson J, Foerster S, Orr R, et al. System, environmental, and policy changes: Using the social-ecological model as a framework for evaluating nutrition education and social marketing programs with low-income audiences. *Journal of Nutrition Education* 2001; 33 (Supplement 1):S4-S15.

¹⁰ Peterson KE, Sorensen G, Pearson M, et al. Design of an intervention addressing multiple levels of influence on dietary and activity patterns of low-income, postpartum women. *Health Education Research* 2002; 17(5):531-540.

¹¹ Johnson SL, Birch LL. Parents' and children's adiposity and eating style. *Pediatrics* 1994; 94(5):653-661.

¹² Coon KA, Goldberg J, Rogers BL, Tucker KL. Relationships between use of television during meals and children's food consumption patterns. *Pediatrics* 2001; 107(1):e7-e16.

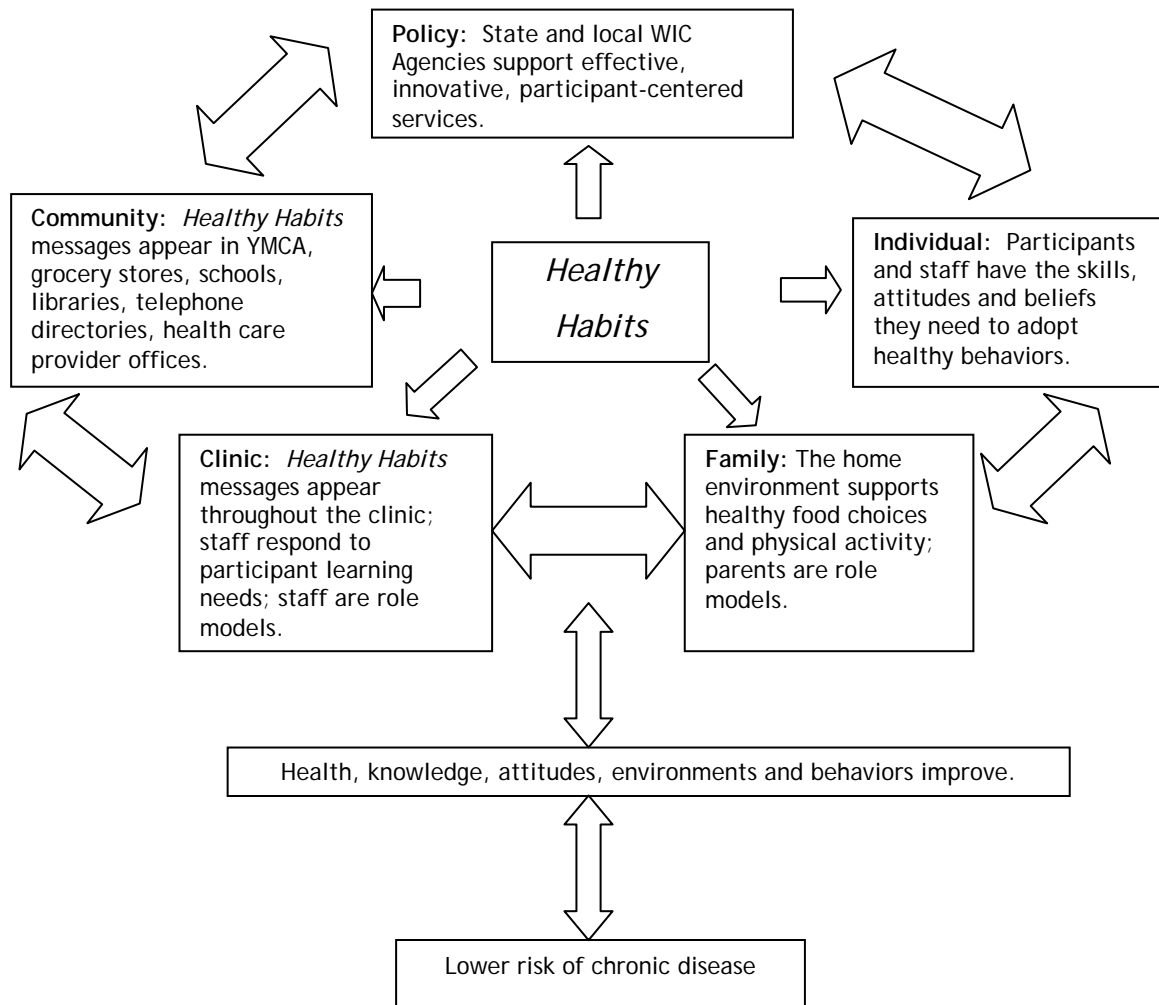
¹³ Boutelle KN, Birnbaum AS, Lytle LA, et al. Associations between perceived family meal environment and parent intake of fruit, vegetables, and fat. *Journal of Nutrition Education and Behavior* 2003; 35(1):24-29.

¹⁴ Lytle L, Achterberg C. Changing the diet of America's children: What works and why? Beyond health promotion: Reducing the need and demand for medical care. *Journal of Nutrition Education* 1995; 27(5):250-260.

- 2) Supporting behavior change in the family and the practice of healthy habits in the household;
- 3) Training WIC staff and saturating the clinic environment with *Healthy Habits* messages;
- 4) Building partnerships to disseminate the same messages throughout the community; and
- 5) Building statewide understandings about the need for an integrated policy on health promotion.

These levels and their interactions are illustrated in **Figure 1**.

Figure 1 The Social-Ecological Framework of Healthy Habits



2.3 Social Marketing Principles

Social marketing adapts concepts from commercial marketing to the planning and implementation of social programs: Instead of selling a product for profit the goal of social marketing is to change behaviors.¹⁵ Several concepts in social marketing are especially useful in the WIC context:

1. Social marketing campaigns are tailored to the unique perspectives, needs, and experiences of the target audience and are delivered in the place and at the time the participant will be most receptive. In this way, social marketing is similar to the participant-centered focus of many current WIC initiatives.
2. Another useful concept of social marketing is exchange theory. In the WIC context, exchange theory suggests that if a WIC educator asks a participant to embrace physical activity, the educator must a) acknowledge that the participant will have to give up other uses of her time and, perhaps initially, the support of her family to be physically active; and b) help the participant to see the valuable outcomes of her efforts.
3. A strong social marketing program also includes pre-testing of messages and materials, and a tracking process to ensure that the message is being received as planned and having its intended impact.

The project team used these concepts in the design of the *Healthy Habits* education modules.¹⁶ To apply social marketing principles, the factors of *product*, *price*, *place*, *promotion* and *positioning* must be identified. In *Healthy Habits*:

- The *product* was the behavior promoted: family meals or physical activity.
- The *price* was the “cost” of health behavior change for WIC participants. The *Healthy Habits* modules incorporated a version of exchange theory by identifying what participants might have to give up in order to increase

¹⁵ To read more about social marketing see the list of references on the Food Stamp Nutrition Connection web site at http://warp.nal.usda.gov/fnic/foodstamp/Training/social_marketing.html (accessed May 2, 2006).

¹⁶ Alacay R, Bell RA. Promoting nutrition and physical activity through social marketing: Current practices and recommendations. University of California, Davis. 2000.

family meals and family physical activities, and by developing messages to help participants focus on their motivators and overcome their barriers.

- The *place* was the participants' social and physical environment. *Healthy Habits* encouraged WIC participants and communities to make family meals and physical activity socially acceptable and easy to do.
- The *promotion* effort was the implementation of the *Healthy Habits* modules, using posters, banners and handouts in WIC clinics and other community agencies, talking with participants, and building community partnerships.
- The modules were positioned to meet the desire of WIC families to raise healthy and successful children.

2.4 *Stages of Change*

The *Healthy Habits* project team also referred to *the Stages of Change* model in the development of the educational modules. The *Stages of Change* model, formally known as the Transtheoretical Model for health behavior change, describes behavior change as a step-wise process in which an individual must progress through each of five different stages.^{17 18} He or she may progress through them in turn, or switch back and forth according to circumstances in their lives or in response to external influences.¹⁹

This model has been used previously in the development of successful nutrition education programs.^{20 21} In *Healthy Habits*, the project team developed materials

¹⁷ Prochaska JO, Velicer WF. The transtheoretical model of health behavior change. *American Journal of Health Promotion* 1997; 12(1):38-48.

¹⁸ Craypo L, Wolf K, Carroll A, Samuels S. *Nutrition Education: A review of models, approaches and theories*. Samuels & Associates, Oakland, CA. 2001.

¹⁹ Greene GW, Rossi SR, Rossi JS, et al. Dietary applications of the *Stages of Change* model. *Journal of American Dietetic Association* 1999; 99(6):673-678.

²⁰ Steptoe A, Kerry S, Rink E, Hilton S. The impact of behavioral counseling on stage of change in fat intake, physical activity, and cigarette smoking in adults at increased risk of coronary heart disease. *American Journal of Public Health* 2001; 91(2):265-269.

²¹ Campbell MK, DeVellis BM, Strecher VJ, et al. Improving dietary behavior: the effectiveness of tailored messages in primary care settings. *American Journal of Public Health* 1994; 84(5):783-787.

(posters, interactive handouts and bookmarks) to address the different *Stages of Change*, and they augmented staff training in this area. Table 1 lists the five stages, the degree of readiness of the individual required for each stage, and the role of motivators and barriers in that level.

Table 1 *Stages of Change**

Stage	Readiness to Change	Motivators and Barriers
Pre-contemplation	No intention of changing (i.e. for at least 6 months)	Unconscious of motivators; feel many barriers to change
Contemplation	Intention of changing, but not right away	Conscious of motivators as well as barriers to change
Preparation	Intention of changing (i.e. within next month)	Focusing on motivators; working to overcome controllable barriers
Action	Current or recent change	Focusing on motivators; controllable barriers overcome but still present
Maintenance	Maintaining change for at least 6 months	Motivators ingrained; controllable barriers consistently overcome

*Source: Greene, et al. JADA 1999; 99(6).

These models—participant-centered services, the social-ecological model, social marketing, and *Stages of Change*—were used together to form the theoretical basis for *Healthy Habits*. Moreover, throughout the design and evaluation of this project, the project team was also guided by the principles described in *Framework for Program Evaluation in Public Health*.²² Critical elements of this framework included engaging stakeholders, focusing the evaluation design, ensuring use of the program and sharing the lessons learned.

²² *Framework for Program Evaluation in Public Health*. Recommendations and Reports, CDEC, MMWR, Milstein RL and Wetterhall SF, September 17, 1999/48(RR11);1-40. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4811a1.htm> (accessed May 2, 2006).

3.0 Implementation: How Does *Healthy Habits* Work?

This section describes how the two components of *Healthy Habits*, the nutrition education modules and the mini-grant programs, were implemented in Washington WIC. Implementation includes the *development*, the *delivery* and the *evaluation* phases for each component. The *impact* of each component as measured in the evaluation phase is described in Section 4.

3.1 Implementation of the Nutrition Education Modules

3.1.1 Development Phase: Nutrition Education Modules

In the development phase of the Nutrition Education Modules component, the project team first assessed the needs and opinions of WIC staff and participants, then incorporated the information gained into the development of the modules.

1. *Assessment of Needs and Opinions of WIC Staff and Participants*

The first step in developing an effective nutrition education program based on the above-described principles was to understand the current situation of the WIC State agency and local agencies, including both participants and staff. The project team used the research techniques of *written opinion surveys* and *focus groups* to collect this important information.

A. Surveys and Focus Groups of Local WIC Staff

The annual Statewide WIC Conference in October 1999 provided the project team an opportunity to learn the perceived needs and priorities of Washington WIC staff prior to designing their approach. At the conference, 295 WIC staff members (5% coordinators, 43% certifiers, 20% clerks, 23% nutritionists, 6%

coordinator/nutritionists, 3% other) completed a questionnaire designed by the project team. The survey results indicated that:

- Staff wanted assistance in developing local initiatives to address obesity prevention;
- The primary perceived barriers to developing community-based, innovative approaches to nutrition education were time, staffing limitations, scarcity of local expertise, and funding;
- Access to training was limited (e.g., traveling to training sessions was difficult);
- Staff had an interest in consulting with State and University staff on grant writing. They felt additional funds would allow more extensive program planning.

The project team also conducted a focus group with eight local coordinators at the same meeting, and later, another focus group of 15 nutritionists and coordinators at a second Statewide nutrition meeting (November 1999). Both focus groups yielded results similar to those described above.

Again in the fall of 1999, a second questionnaire was mailed to local WIC agencies to assess the scope of current and planned nutrition education activities relevant to chronic disease risk reduction. The surveys revealed a strong interest in obesity prevention and promoting physical activity. However, only half of those clinics that expressed interest in addressing these issues currently had programs developed to do so.

Finally, in early 2001, all local WIC coordinators were asked to respond to an online survey to select which topics from the following list of four should receive priority in newly developed nutrition education modules: *family meals, food preparation with children, family physical activity, and parenting*. WIC staff chose family physical activity and family meals as the topics of greatest interest to them.

B. Focus Groups of WIC Participants

In February and March 2001, a diverse group of 41 WIC participants participated in six focus groups around Washington State.²³ Focus group discussions centered on four topics: *family meals, food preparation with children, family physical activity, and parenting*. These topics were identified through a review of the literature.^{24 25 26 27 28}

Focus group discussants were asked to identify healthy behaviors within each topic area and to describe what motivated them to participate in these healthy behaviors. The motivators to participation identified most frequently are listed in Table 2, along with illustrative quotations.

Table 2 Key Motivators for Participation in Healthy Behaviors Described in Participant Focus Groups

Motivator	Quote
Health benefits to children	"I try to really give my kids healthy foods because I have high blood pressure and I'm overweight... and my husband's a diabetic. I don't want these things to go into their lives."
Concerns about child development	"I try to get outside with him more, get him looking around and interested in things."
Sense of responsibility	"Continuously trying to be a good role model for them... it's not supposed to be perfect, but you want them to watch you and see right from wrong."
Positive support	"Just a few encouraging words or just somebody to say 'I understand, I've been through it, been there, and you'll be fine' - that goes a long way."

When asked to describe what makes these behaviors difficult to follow, focus group discussants named the barriers listed in Table 3.

²³ Birkett DH. Understanding the client's perspective on a behavioral approach to WIC services. University of Washington, 2002.

²⁴ Johnson SL, Birch LL. Parents' and children's adiposity and eating style. *Pediatrics* 1994; 94(5):653-661.

²⁵ Birch LL, Fisher JO. Development of eating behaviors among children and adolescents. *Pediatrics* 1998; 101(3 Pt 2):539-549.

²⁶ USDA/ARS, Children's Nutrition Research Center at Baylor College of Medicine. TV eating up family mealtime. 2000.

²⁷ Jeffery RW, French SA. Epidemic obesity in the United States: are fast foods and television viewing contributing? *American Journal of Public Health* 1998; 88(2):277-280.

²⁸ Biddle S, Goudas M. Analysis of children's physical activity and its association with adult encouragement and social cognitive variables. *J Sch Health* 1996; 66(2):75-78.

Table 3 Key Barriers to Participation in Healthy Behaviors Described in Participant Focus Group

Barriers	Sub-category/Topics	Quote
Lack of time	<ul style="list-style-type: none"> Working, schedules, planning 	"It always seems like the race is on at our house."
Social environment	<ul style="list-style-type: none"> Parent's bad habits Messages from multiple caregivers 	"For me [the biggest barrier is] myself. I'm a junk food addict, and I know if I'm eating it, my kids are going to want it."
Physical environment	<ul style="list-style-type: none"> Safety, supervision Unfamiliar culture for immigrants 	"I don't want him around the stove, but yet I realize the importance of maybe having him help prepare something. I'm really not sure what he may be able to handle or may be able to do."
Lack of knowledge	<ul style="list-style-type: none"> Parenting skills, discipline Development Healthy feeding, quick& easy recipes 	<p>"Being consistent to the limitations you set."</p> <p>"More information. Please help me. I don't want to screw up."</p>
Lack of support	<ul style="list-style-type: none"> Stress Depression 	"Moms living on their own for the first time, setting up house. 'I want, I want. I need, I need. Now.' It's hard to hear the screaming, it's hard to deal with that."

Focus group discussants were also asked how WIC could help them move toward healthier behaviors. Discussants wanted WIC to offer support groups for caregivers, facilitated discussions, and cooking classes. Printed materials and Internet resources were also suggested as potentially useful tools for disseminating information. Focus group discussants said that because of their busy schedules, they only keep printed materials such as handouts if they were particularly interesting, eye-catching, and useful. Caregivers wanted to hear ideas that worked for other WIC families who faced similar challenges and life circumstances. Table 4 summarizes their suggestions for ways in which WIC could help its participants adopt healthy behaviors.

Table 4 Possible Ways for WIC to Support Behavior Change Suggested in Participant Focus Groups

Vehicle	Format	Characteristics	Suggested Topics
---------	--------	-----------------	------------------

Vehicle	Format	Characteristics	Suggested Topics
Groups	<ul style="list-style-type: none"> Facilitated discussion Support group Cooking class Activity 	<ul style="list-style-type: none"> Participatory Interactive Facilitated by knowledgeable staff Multiple time offerings Activities for children available Some groups inclusive of participant's partners 	<ul style="list-style-type: none"> How to get kids to try new foods <ul style="list-style-type: none"> How to discipline Cooking in a budget Interaction between food and behavior <ul style="list-style-type: none"> Meal planning Activities to do with children How to include children in cooking
Printed materials	<ul style="list-style-type: none"> Brochures Flyers Newsletters 	<ul style="list-style-type: none"> Exciting Useful Participatory: including ideas from other moms 	<ul style="list-style-type: none"> "Mom's tips" newsletter Recipes: with WIC foods, fast and easy, healthy alternatives, healthy snacks
Internet-based resources	<ul style="list-style-type: none"> WIC Web site WIC chat room 	<ul style="list-style-type: none"> Accessible at all hours Accessible to dads, other caregivers Credible 	<ul style="list-style-type: none"> Basic information about nutrition, health, and child development On-line support group

2. Development, Pre-Testing and Piloting of Nutrition Education Modules

Based upon findings from the assessment of the needs and opinions of staff and participants, two sets of nutrition education materials were developed: one focusing on family meals, and the other on physical activity. Development of materials was guided by the theoretical systems described in Section 2.

Materials were designed to help staff and participants identify the participant's stage of the change, and to help participants move to the next stage. Training materials were developed which included a section on the *Stages of Change* and how to use the new materials with participants. Materials to some extent built upon the ideas of The Washington Coalition for Promoting Physical Activity (WCPPA)²⁹ and the Washington State Nutrition Education Network.³⁰ *Healthy Habits* adopted these groups' logos and slogans: "Be Healthy, Be Active" and "Eat Better, Eat Together." Modules included background information, guides and materials for group and individual sessions with WIC participants, interactive handouts for participants, posters, banners, bookmarks, and children's coloring pages.

²⁹ WCPPA is an independent coalition with members from both the public and private sector who come together to promote physical activity as part of a healthy lifestyle.

³⁰ The Washington State Nutrition Education Network leads an initiative to promote family meals.

Modules were pre-tested at local WIC clinics. In informal focus group discussions, participants reviewed and evaluated the materials. One group of Vietnamese participants was facilitated through an interpreter. Participants were asked what messages they received from the materials and how the materials could be improved. Materials in each preliminary module were modified accordingly: More bright colors and pictures of children were added, and fewer words were used to deliver a smaller number of key messages effectively to the multi-cultural WIC population.

Six clinics then volunteered for a pilot implementation of the modified modules. Three clinics were assigned to implement the family meals module, and three to the physical activity module. Following pilot implementation, graduate students from the project team interviewed staff and participants in the piloting Agencies for feedback on effectiveness of the implementation. The feedback demonstrated the importance of pilot-testing the modules, and suggested a number of revisions to the modules and approach.³¹

Results of the piloting indicated that barriers to implementation of the modules included time constraints, staff availability, miscommunication of expectations, and both staff and participant resistance to change. Reminders and periodic encouragement were essential to maintain on-going staff interest in the project. The module materials and training of staff were modified based on these experiences. More details of the changes suggested by pre-testing and piloting are given in the Lessons Learned section of this manual (Section 5).

Figure 2 Key Messages of the Family Meals Module: “Eat Better, Eat Together!”

✓ Eating together strengthens the family.	✓ It <i>is</i> possible to work through the barriers to family meals.
✓ There are ways to make family meals work for everybody.	✓ “Family meals” can include anyone whom you love, live with, care for, or who cares for you - they are about building strong ties by sharing meals.

³¹ Aljammaz S. Formative evaluation of family meals and physical activity modules in Washington State WIC program. University of Washington Department of Nutritional Sciences. 2002.

- | | |
|---|---|
| ✓ Eating together is part of parenting. | ✓ Good conversation, limited distractions, and parenting skills make meals a good experience. |
| ✓ Eating together helps children eat better. | ✓ Children like to help with meals. |
| ✓ Children can help with family meals. | ✓ WIC families can learn from each other. |
| ✓ There are many benefits to eating together as a family. | |

The final key messages and overall themes of the two education modules are shown in Figure 2 (above) and in Figure 3 (below). The goal of the family meals module was to empower WIC families to use family mealtime to provide positive parenting and healthy foods. The goal of the physical activity module was to empower WIC families to include physical activities in their daily family lives. Components included in the modules are shown in Table 5.

**Figure 3 Key Messages of the Family Physical Activity Module:
“Get Moving, Be Active!”**

- | | |
|---|---|
| ✓ Physical activity doesn’t just mean “exercise”. | ✓ Parents are role models. |
| ✓ Being active is... moving! An active lifestyle is different for every person or family. | ✓ Turning off the TV means more time to be active. |
| ✓ You can fit physical activity into everyday life. Opportunities are all around you. Gardening, dancing, housecleaning, walking can all count. | ✓ Physical fitness improves your mood, stress level, energy, health, strength, quality of sleep, and the way you feel about yourself. |
| ✓ Children need physical activity for health, learning, and development. | ✓ WIC families can learn from each other. |
| ✓ Playing together as a family is fun and important. | |

3.1.2 Delivery Phase: Nutrition Education Modules

All WIC Agencies in Washington, with the exception of the six clinics that participated in the pilot stage, were engaged in the implementation of the nutrition

education modules. Agencies were “blocked” to balance Agency size and primary ethnicity; then within the blocks, agencies were randomly assigned to implement either the family meals or the physical activity module.

The delivery phase was officially kicked off at the annual Statewide WIC Conference in October 2001. In the plenary session of the Conference, almost 700 local WIC staff members were introduced to the *Healthy Habits* project. Separate breakout sessions at the Conference focused on how to implement the modules. For these breakout sessions, a representative from each Agency was asked to attend the session focusing on the module to which that Agency had been assigned. The Agency representative was given a Module Notebook to guide her/his orientation and the subsequent implementation in her/his local clinic and community. The Module Notebook contained: specifics on implementation within the clinic, guidelines for community partnering, and all essential materials, including small mock-ups of promotional materials (see Table 5).

A Starter Kit was mailed to each Agency in December 2001. The Starter Kit included a one-month supply of materials (listed in Table 5) and an order form for additional materials.

Clinics with a caseload of over 500 received more than one Starter Kit. During the six-month implementation period of this project (March-August 2002), clinics were encouraged to use any combination of the materials and tools provided. While general guidelines and an explanation of materials were included in the Module Notebooks, each clinic’s staff used the materials at their own discretion. Materials and links to related resources were also available on the *Healthy Habits* web site, at <http://depts.washington.edu/vitalwic>. This web site received more than 37,000 visits, or hits, between November 2002 and April 2003.

Implementing the modules required the staff to perform the following tasks:

- ✓ Read and understand the Module Notebook and background materials;
- ✓ Plan the best approaches for the local Agency;
- ✓ Display posters and banners in the clinic area;
- ✓ Put the bookmarks in with WIC checks/vouchers each month;

- ✓ Order and manage module materials;
- ✓ Plan, schedule, prepare, conduct, and evaluate group sessions.

Table 5 Components of *Healthy Habits* Nutrition Education Modules

Major component	What it included
Introduction: "Essentials"	Overview, including: basic information on how to use the module in the clinic setting; components of the module; the thinking behind its development; suggested timeline; and implementation plan.
Promotional materials (for clinic and community use)	<ul style="list-style-type: none"> • Banner - One per module, with the "Eat Better, Eat Together" and "Get Moving, Be Active" slogans <ul style="list-style-type: none"> • Posters - Six per module. Clinics could rotate posters on a monthly basis to reinforce the messages. • Bookmarks - Six per module. Clinics could give out bookmarks with checks/vouchers, or put them in participant appointment folders. • Interactive Handouts - Three per module, each directed at different <i>Stages of Change</i> (pre-contemplation/contemplation, preparation, and action/maintenance) <ul style="list-style-type: none"> • Group session announcement flyers • Participant Feedback Cards - one per module. Clinics may use the cards with participants who are interested in sharing their tips, ideas and/or recipes with other participants. • Supplemental Materials - three or four per module. Clinics may use the materials in conjunction with other handouts. <ul style="list-style-type: none"> • Coloring materials for children
Nutrition education: "Second Contacts"	<ul style="list-style-type: none"> • Learning objectives and messages for participants. <ul style="list-style-type: none"> • Group session plans and activity ideas to encourage positive support for participants, open and active participation, and interaction between participants. • Facilitated discussion materials: discussion topics, and a how-to sheet for staff. • Handouts on family meals and physical activity, such as the Activity Guide Pyramid, a Healthy Shopping List, and recipes. <ul style="list-style-type: none"> • Group session evaluation form, to gather feedback from participants
Staff training	<ul style="list-style-type: none"> • Information, lesson plan and slides for training WIC staff on how to effectively implement the module with participants.
Background and reference materials: "Framework", "More Information" and "Appendices"	<ul style="list-style-type: none"> • "Framework" includes: information on the theories used to develop the modules and how to apply the theories in work with participants; suggestions on what roles each WIC staff can play in the promotion of the modules. • "More Information" lists other resources and lesson plans for staff to learn more about the subject and enhance their work with participants. Family Meal module includes the "Eat Better; Eat Together Tool Kit"; Family Physical Activity module includes "Promoting Physical Activity: Guide for Community Action". This section also includes information and guidelines on television viewing. • "Appendices" provides evaluation tools that may be used with staff and participants before and after implementation of module. This chapter also includes an example of the Healthy Habits website's homepage, examples of the Healthy Habits staff newsletters that were developed to help with staff motivation and education, and Healthy Habits materials order form.

The Module Notebook also provided guidelines for community partnering. The goal of community partnering was to achieve wider dissemination of the module's key messages and reinforcement of the educational experiences within the WIC clinic. Local WIC Agencies were encouraged to share the posters, banners and bookmarks with other agencies and health care providers and suggest that *Healthy Habits* messages be used in materials produced by them. In Washington, some Agencies gave posters to early childhood programs, childcare centers, doctor offices, teen centers, and libraries. One Agency coordinator provided *Healthy Habits* messages to the community's monthly newspaper. Every month, *Healthy Habits* messages appeared in the newspaper, exposing extended family members and other community members to the same messages. The coordinator also collaborated with the Early Childhood Program to print *Healthy Habits* messages on back of their monthly menus and reminder postcards. The time required for community partnering activities such as these depends on existing community relationships.

A newly developed Agency newsletter called "The Beet" was sent to clinics every two months during the module implementation period. (The newsletter was suggested during the pilot-testing phase of this project, as a way to send reminders and boost staff morale.) It included updates on the implementation timeline, summaries of recent research on physical activity or family meals, new resources, recipe or activity ideas contributed by participating clinics, and answers to frequently asked questions.

A mid-term evaluation was conducted to ensure that implementation was "on-track": Key personnel from 25 randomly selected agencies were interviewed in April and May 2002. Information collected from these interviews allowed the *Healthy Habits* team to assess progress and address any problems with implementation as they arose.

3.1.3 Evaluation Phase: Nutrition Education Modules

The project team used three mechanisms for collecting information about the impact of *Healthy Habits* nutrition education modules. All forms and tools

developed for this evaluation are available on the *WIC Works* Resource System (<http://www.nal.usda.gov/wicworks/>).

1. *Survey of Participants and Staff*

A survey of participants and staff was conducted before and after six months of statewide implementation. Clerks in the clinics gave a questionnaire to all participants who came into the clinic within a three-week period, after which, implementation began. The follow-up survey was conducted in the same way, in the three weeks after implementation. The questionnaire included items about demographics, family meal behaviors and physical activity behaviors, as well as readiness for behavior change. The same one-page, 17-question questionnaire was used both before and after implementation for participants and staff, and was available in English and Spanish. A shorter, four-question version was administered through an interpreter to non-English, non-Spanish speaking participants.

2. *Client Information Management System*

Statistics on contacts and exposures on a clinic-wide basis were summarized from information gathered at all clinics by the Washington WIC Program's Client Information Management System (CIMS). CIMS is used to track participant certification, checks/vouchers issued, and nutrition education contacts. When a participant attended a *Healthy Habits* nutrition education group or talked with a nutritionist or certifier about a *Healthy Habits* topic, that event was recorded in the CIMS system as a *Healthy Habits* contact. Three measures of exposure were derived from the CIMS reports:

- a) Percent of all family units (or "Groups") participating in WIC during the six-month implementation period who received a *Healthy Habits* contact;
- b) Average number of contacts (or "Exposures") received by each family unit who participated (i.e. of those who received at least one contact);
- c) Average number of months each family unit participated in WIC, out of the six months of implementation.

3. Local Agency Project Summary

At the end of the six-month implementation period, project coordinators at each local Agency completed a project summary form about their experiences with the *Healthy Habits* education modules. The topics addressed were:

- The process - Use of materials, access to resources, effectiveness of communication tools, and helpfulness of training;
- Understanding - Whether staff understood how to use and implement the various components of the module;
- Limitations and challenges - Barriers to implementation, such as language/translation issues or difficulty with the survey;
- Contacts - Approximate percentage of participants who received different types of *Healthy Habits* exposures;
- Starting dates - To assess the timeliness with which clinics began implementation;
- Community partnering - Staff training, community activities, and partnerships.

Questions on this tool included multiple choice, yes/no, five-point scale, and open-ended questions. The open-ended questions allowed coordinators to give feedback on the project as a whole or ideas for revision of the materials.

3.2 Implementation of the Mini-Grant Program

3.2.1 Development Phase: Mini-Grant Projects

In the *Assessment of Needs and Opinions* described in Section 3.1.1, WIC staff indicated that money and time were among the most challenging barriers to innovation within WIC. Staff wanted help to develop local initiatives addressing obesity prevention and with grant writing to develop those initiatives. They also said they had a strong interest in doing more to reduce the risk of chronic diseases in their participants through nutrition and physical activity education.

The mini-grant component of *Healthy Habits* was developed to encourage and support local Agencies to take innovative approaches to address those needs and to go “above and beyond” traditional nutrition education sessions.

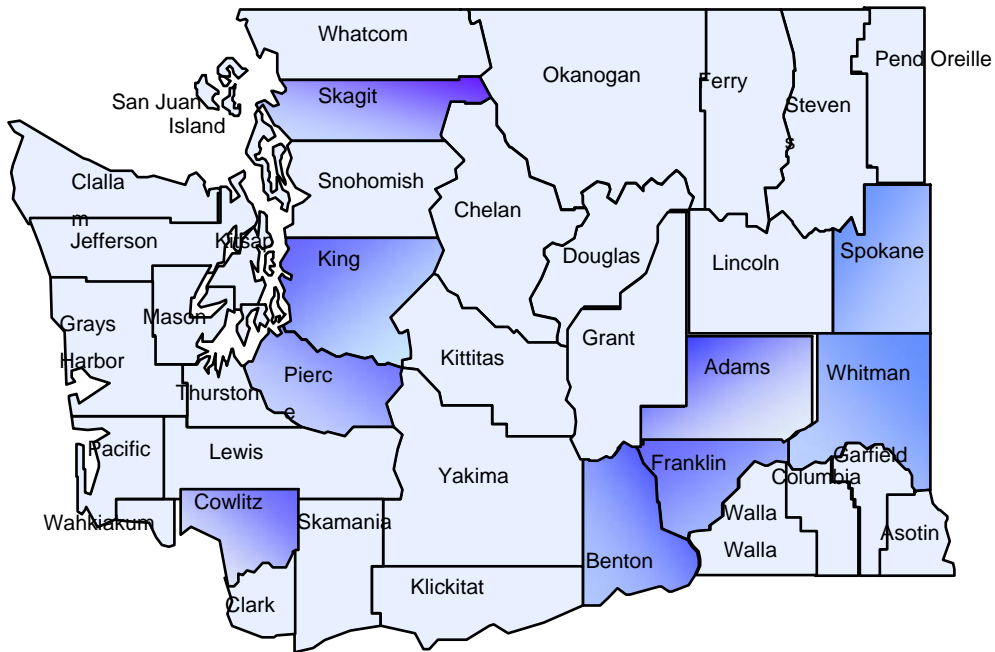
The goals of the mini-grant program were:

- To support local Agencies in their efforts to develop new and innovative ways to work with families--even if the approach required additional staff time and resources;
- To help those Agencies build their capacity to apply new public health approaches in developing and sustaining community-based nutrition services.

The mini-grant funding process began with the announcement of a Request for Proposals (RFP) at a Statewide WIC Coordinator’s meeting in November 2001. The RFP was also mailed to all local Agencies. Agencies were asked to develop proposals for special projects focusing on reducing obesity and risk of chronic disease. The mini-grant applications were designed to take only two to three hours to complete. Funds were to be allocated in grants of up to \$40,000 for a 12-month period (March 2002-February 2003).

Proposals were submitted by 16 Agencies, with requests totaling \$350,000; this exceeded the \$200,000 available for the mini-grant program. A committee reviewed proposals and ranked them on clarity, creativity, feasibility, and alignment

Figure 4 Locations of Mini-Grant Agencies



with the general goals of the *Healthy Habits* grant. Funds were granted to 10 WIC Agencies, representing nine counties in Washington State. Counties with funded Agencies are shown shaded in Figure 4.

A project coordinator and/or a project assistant from each funded Agency attended three training sessions over a 10-month period (March 2002, July 2002 and Jan 2003) to receive assistance in developing and strengthening their plans. The topics of the sessions were:

Session 1. Program Design and Evaluation: The Agency staff developed logic models and evaluation plans for their projects, using the *Framework for Program Evaluation in Public Health*,³²

Session 2. Developing Evaluation Tools: Agency staff framed questions and developed tools for their evaluation plan;

³² *Framework for Program Evaluation in Public Health*. Recommendations and Reports, CDEC, MMWR, Robert L. Milstein and Scott F. Wetterhall, September 17, 1999 / 48(RR11);1-40 <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4811a1.htm> (accessed May 2, 2006).

Session 3. Grant Writing, Sustainability, and Presenting Evaluation Results:

Staff began the process of finding additional sources of funding for continuation of their projects. They developed plans to effectively report the work they had done to stakeholders and funding organizations.

3.2.2 Delivery Phase: Mini-Grant Projects

The mini-grant Agencies' projects varied depending on the needs of their participants and community. Each Agency used the funding to help enhance their current nutrition education efforts. Nine of the 10 Agencies worked on projects focusing on family physical activity and one Agency focused on family meals; all used the newly developed *Healthy Habits* education modules. However, the mini-grant project teams went beyond the use of the *Healthy Habits* education modules to promote physical activity and healthy lifestyles in their Agencies. One Agency, working with community partners, taught their participants gardening as a form of physical activity and a source of nutritious food. Agencies incorporating family physical activity into their nutrition education worked with community partners to create easy-to-do, fun, home-based activities. One Agency worked with fitness instructors from a community center to allow participants to experience a variety of fitness activities. Some Agencies had group sessions with creative titles, so participants would be more willing to come and participate. For example, two Agencies titled their group sessions "WIC Olympics." These sessions focused on nutrition and family physical activity. A project coordinator at one Agency used the grant funds to create Russian nutrition education boards for their large Russian participant population. The education boards included topics on hydration, sugar, tooth decay, and other topics. Realizing that WIC staff members are role models for their participants as well as educators, at least two Agencies used a portion of their funding to reinforce staff knowledge and personal practices about wellness, physical activity and nutrition.

3.2.3 Evaluation Phase: Mini-Grant Projects

Mini-grant Agencies described their activities and project developments in quarterly reports, and at the end of the year's activities, in a final report. Report forms were provided to mini-grant Agencies so that the information gathered would be quantifiable and consistent among funded Agencies. Activities, outcomes, lessons learned, and expenditures were summarized in the final reports. Finally, Agency representatives who attended the training sessions completed evaluations at the conclusion of the sessions.

4.0 Impact of *Healthy Habits*: Results of Evaluation

This section describes the impact of each *Healthy Habits* component, the education modules and the mini-grant program, as measured in the evaluation phase described above.

4.1 Impact of the Nutrition Education Modules

4.1.1 Survey of Participants and Staff

The impact of the *Healthy Habits* education modules was evaluated by comparing responses on the questionnaires completed by staff and participants before, and six months after, project implementation. With 59 of the 65 Agencies in Washington reporting, 11,289 English and Spanish questionnaires from staff and participants were analyzed from the pre-implementation survey, and 9,824 questionnaires from the post-implementation survey were analyzed. Three hundred and fourteen short questionnaires were completed with the help of interpreters before the implementation period, and 296 after implementation.

Changes in reported behavior occurred following module implementation, and are summarized here. (See Appendix A for tables of results.)

- ✓ *Frequency of family meals*: Participants from the Agencies implementing the family meals module significantly increased the number of meals they ate each week with other household-members, from 5.8 to 5.9, as indicated on the long questionnaire; and from 5.9 to 6.1, from the short (interpreter-administered) questionnaire.
- ✓ *Quality of family mealtime*: A significantly greater percentage of participants in the family meals module reported always or usually enjoying eating meals with their children, always or usually sitting with their children while they eat, and not watching TV during meals.

- ✓ *Television viewing:* Messages about reducing the amount of time spent watching television were included in both modules and there was a statistically significant reduction in reported TV viewing by children in both the family meals and physical activity groups.
- ✓ *Physical activity:* *Healthy Habits* was associated with increased physical activity in WIC staff. In both the family meals and physical activity groups, the number of days per week that staff members were physically active increased significantly.

4.1.2 Summary from Client Information Management System (CIMS)

Information summarized from CIMS showed the impact of *Healthy Habits* modules:

- ✓ Across all Agencies, the average percentage of the total caseload that participated in *Healthy Habits* was 39% ($\pm 20\%$). Participation ranged from a low of 5.1% of total caseload in one clinic to 85% in another. The average number of times during the six-month implementation period that a participant who was involved in the *Healthy Habits* project received a nutrition education message about *Healthy Habits* was 1.22 (± 0.2).
- ✓ In those Agencies that were also involved in the mini-grant programs, 51% of participants were exposed to *Healthy Habits*. The average number of *Healthy Habits* contacts that participants received in mini-grant clinics was also higher. This may be associated with Agency focus, additional funding, and making *Healthy Habits* a priority.
- ✓ The average duration of a participant's time in the WIC program, across all Agencies, was 4.48 months (± 0.25 months), so that most participants were in WIC long enough to have been exposed to *Healthy Habits* during its six-month implementation period.

4.1.3 Local Agency Project Summaries

The local Agency project summaries reflected the experience of implementing the nutrition education modules from the staff perspective. Results reflected the broad diversity among the WIC Agencies in Washington State. Highlights and recurring themes from the project summaries are listed below.

Agency response to staff training:

- ✓ The majority of involved Agencies felt that the Module Notebooks and materials were easy to use.
- ✓ Messages about the importance of staff in-service training were effectively communicated: 86% of *Healthy Habits* Agencies reported providing some type of staff training.
- ✓ In response to training messages encouraging community partnering during implementation, 38% of Agencies reported partnering with non-WIC groups or community organizations, and 29% reported doing other things in their communities to promote *Healthy Habits* messages.

Barriers to implementation by Agencies:

- ✓ *Language:* The lack of translated materials was a barrier for implementing *Healthy Habits* at their sites for 56% of Agencies. Spanish materials were not available at the beginning of the implementation period; moreover, many WIC participants in Washington State speak languages other than English or Spanish.
- ✓ *Internet access:* Although 30% of Agencies reported that the *Healthy Habits* web site was a useful resource, 50% reported that lack of Internet access was a barrier to implementation.
- ✓ *Time:* 35% of Agencies reported that lack of time was a barrier to full implementation of the modules.
- ✓ *Surveys:* 26% of Agencies reported that participants had trouble completing the questionnaire. Staff did not report having any difficulty with it themselves.

4.2 Impact of the Mini-Grant Program

The impact of the *Healthy Habits* mini-grant program was evaluated on the basis of information given in the Agencies' final reports, and on the evaluations of the three training sessions attended by Agency representatives.

4.2.1 Summary of Final Reports

The following is a summary of outcomes and lessons learned from the 10 Mini-Grant Agencies' final reports:

Participant exposure and outcomes:

- ✓ On average, Agencies involved 29% (\pm 37%) of their total caseload in mini-grant activities.
- ✓ Of those participants who participated in mini-grant activities, an average of 37% (\pm 27%) reported positive behavior change.

General benefits:

- ✓ All 10 Agencies reported that participants appeared to enjoy and appreciate the mini-grant activities.
- ✓ Nine Agencies reported that their mini-grant projects resulted in new community partnerships.
- ✓ Eight Agencies reported that the *Healthy Habits* mini-grant changed perceptions about WIC within their Agency or community.

Staff competencies:

- ✓ All 10 Agencies reported that staff had improved skills in both grant writing and program evaluation.
- ✓ Nine Agencies reported that staff had improved their ability to work with community partners, develop nutrition education and health promotion programs, and foster behavior change in WIC participants.
- ✓ Nine Agencies reported that the three mini-grant training sessions on evaluation, sustainability, and reporting were useful.

Challenges:

- ✓ The greatest barriers to implementing the mini-grants were coordinating the grant with other WIC demands and participant attendance.

Evaluation:

- ✓ Eight Agencies said that paper surveys worked well with their participants, but the majority reported that phone surveys, CIMS reports, or questioning participants at WIC appointments were not useful evaluation techniques.

Grant administration and continuation:

- ✓ All 10 Agencies found the written grant guidance and the progress report requirements clear and easy to follow.
- ✓ All 10 Agencies reported that Agency administrators supported their work, and nine said that administrators would support a similar project in the future.
- ✓ Seven Agencies indicated that they would institutionalize successful parts of their grant projects without additional funding, and that they would continue to work with community partners.

4.2.2 Training Sessions Evaluation

The information below is summarized from the evaluations completed by attendees immediately following the training sessions.

Session 1. Program Design and Evaluation

- ✓ At least 80% of participants felt that following this training, they were able to explain the importance of program evaluation in WIC, list at least five stakeholders for their projects, and develop a logic model to describe the inputs, activities, and expected outcomes of their projects.
- ✓ Participants found the most useful pieces of this training to be sharing experiences with other grantees, learning the logic model concept, and developing their own logic models.

Session 2. Developing Evaluation Tools

This evaluation was done during a telephone conference call and the evaluation data were gathered as verbal responses at the end of the call. This type of evaluation was utilized to demonstrate, as presented in the training, that evaluation does not have to be a paper and pencil procedure.

- ✓ General responses: "Information was good", "Wish I had this information earlier."
- ✓ Question: "Are there things you wished we had covered today?"
Responses: "More specific examples of tools."
- ✓ Question: "What's one thing that you are planning to do differently now?"
Responses: "Think about a wider variety of ways to do evaluation."
- ✓ Question: "What do you think about using teleconferences for training?"
Responses: "OK", "It was hard to stay engaged", "The handout was helpful", "It was easier to schedule."

Session 3. Grant Writing and Sustainability

- ✓ At least 80% of participants felt that following this training, they were able to access and evaluate funding resources for grant sustainability, draft key elements of a grant application, and use the final grant progress report form.
- ✓ Participants found the most useful pieces of this training to be sharing mini-grant experiences and lessons learned, and learning about the process of writing for and using grant monies to sustain projects.

5.0 Lessons Learned and Recommendations

5.1 Lessons Learned from the Development Phase of *Healthy Habits*

In the development of the *Healthy Habits* education modules, the importance of pre-testing and piloting the use of the modules before implementation on a wider scale became clear. Listed here are some issues that required more development following pre- and pilot testing of the education modules. Changes were made to ease the implementation process, increase the response rate and enhance accuracy of results:

- ❖ Simple, highly structured materials with limited word use were determined to be most valuable.
- ❖ Posters, bookmarks, handouts should be visually appealing and colorful, with illustrations of children and families.
- ❖ Questionnaires were kept brief (1 page maximum) and simple.
- ❖ Sensitivity to cultural traditions, including varied definitions of “family” and barriers to lifestyle changes, was essential.
- ❖ Staff training had to be refocused on the essentials: what, why, and how.
- ❖ A brief overview of the project, focused timeline for implementation and description of expectations was provided to staff.
- ❖ The potential role of each staff member in module implementation was outlined.
- ❖ A Module Notebook was provided with a detailed index and map through the materials.
- ❖ Step-by-step outlines for staff to follow when leading the nutrition education groups were provided.

5.2 Lessons Learned from the Implementation Phase of *Healthy Habits*

- ❖ *Clear, specific communication between the State WIC office and local Agency staff is essential.* The mid-term evaluation of the module implementation revealed that communications about *Healthy Habits* from the State office, such as changes in the availability of materials or the ordering process, were often not relayed to staff actually using the materials. Communications should be enhanced with reminders to share the information with everyone involved with *Healthy Habits*.
- ❖ *Colorful materials with simple messages and pictures and translated materials are very effective in WIC.* WIC staff appreciated the ready-to-use, professional quality, colorful materials, key messages, and sample lesson plans provided in the *Healthy Habits* modules.
- ❖ *Staff skills in the following areas were enhanced and developed by implementing the education modules:*
 - Participant-focused nutrition education;
 - Facilitated group discussion;
 - Understanding the role of family meals and physical activity in the health of children and families;
- ❖ *Incentives work!* The mini-grant Agencies used additional funding to alleviate time pressures on staff, and increase participant involvement.
- ❖ *Local WIC Agencies may welcome the opportunity to work with community partners, if given adequate support and opportunity; however, time and resources are often limiting.*
- ❖ *Staff skills in the following areas were enhanced and developed by implementing the mini-grant program:*
 - Public health program planning and management;
 - Program evaluation;
 - Grant writing.

- ❖ *Revitalizing nutrition services in WIC requires the support of policy makers at all levels.* The support of local WIC administrators is key to incorporating new approaches. A survey of WIC staff from Washington that was conducted after the initial implementation of the projects described here found that staff who implemented these projects “a great deal” were more likely to report that they had adequate time, administrative support, adequate staffing and adequate training for the projects.
- ❖ *Staff members work more effectively when they take care of their own mental, physical, and spiritual wellness.* Staff who model healthy behaviors find it easier to work with participants to promote these behaviors. Promoting family meals and physical activity in Washington State WIC led to an increase in these behaviors in staff as well.

5.3 Considerations for Future Research

While the successes of *Healthy Habits* led to valuable Lessons Learned, some experiences and observations also raised questions to be considered in future work. The *Healthy Habits* project team found that some local Agencies were able to reach almost all their participants with *Healthy Habits* messages while others were not. Agencies that reached more participants were also more likely to report that the *Healthy Habits* materials were easy to use and understand, that they had participated in the initial *Healthy Habits* training, that they partnered with non-WIC groups or community organizations, and worked in their communities to promote *Healthy Habits* messages. The 10 Agencies that received funding through the mini-grants were able to implement *Healthy Habits* to a greater degree than most of the other Agencies. However, we found no clear association between level of Agency participation in the *Healthy Habits* project and the degree of participant behavior change.

These findings raise important questions to be answered in future research projects within the WIC Program:

- ✓ What are the barriers to implementing nutrition education programs, such as *Healthy Habits*, in WIC Agencies and communities?
- ✓ What makes it possible for an Agency to embrace innovative and effective approaches to health promotion in WIC?

The answers to these questions will provide a roadmap for future projects and innovation in the WIC program as a whole.

In conclusion, although rates of obesity and lifestyle-related diseases continue to increase, WIC can be part of the solution. The experiences of the *Healthy Habits* project in Washington State can help other WIC State agencies in their efforts to promote healthy lifestyles in their communities.

6.0 Resources

6.1 Tools and Forms

The materials required to implement *Healthy Habits* are available either from the *WIC Works* Resource System (<http://www.nal.usda.gov/wicworks/>), or from the Washington State Department of Health Warehouse (see information at <http://depts.washington.edu/vitalwic>), as indicated below.

Tools and forms available for downloading from the *WIC Works* website:

- ✓ *Healthy Habits* Participant and Staff Questionnaire in English and Spanish, for use with the Education Modules. (These questionnaires are also provided in the Module Notebooks purchased from the Warehouse—see below.)
- ✓ *Healthy Habits* Participant Questionnaire, short version, for use with a language interpreter. (This questionnaire is also provided in the Module Notebooks purchased from the Warehouse—see below.)
- ✓ *Healthy Habits* Project Summary Report Form
- ✓ Mini-Grant Quarterly Progress Report Form
- ✓ Mini-Grant Final Report Form

Tools and forms available through Washington State Department of Health Warehouse:

- ✓ *Healthy Habits Materials for Family Meals and Physical Activity Education Modules (Module Notebooks)*
- ✓ *Promotional materials listed in each Module Notebook*

6.2 People to Contact

Sheryl Pickering

Project Co-Director, Washington State Department of Health, WIC Program
PO Box 47886
Olympia, WA 98504-7886

Phone: (360) 236-3655

Email: Sheryl.Pickering@doh.wa.gov

Donna Johnson, RD, PhD

Project Co-Director/Assistant Professor, University of Washington,

Nutritional Sciences

Box 353410

Seattle, WA 98195-3410

Phone: (206) 685-1068

Email: djohn@u.washington.edu

6.3 Other Helpful Resources

1. *Healthy Habits* materials and resources are available on the World Wide Web at <http://depts.washington.edu/vitalwic>. To purchase materials, download the module's materials lists, ordering instruction and order form.
2. *Framework for Program Evaluation in Public Health*. Recommendations and Reports, CDEC, MMWR, Robert L. Milstein and Scott F. Wetterhall, September 17, 1999 / 48(RR11);1-40.
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4811a1.htm> (accessed May 2, 2006).
3. The Social Marketing Institute: <http://www.social-marketing.org/sm.html> (accessed May 2, 2006).
4. Community Tool Box: Supports promotion of community health and development: <http://ctb.ku.edu/> (accessed May 2, 2006)

7.0 Acknowledgements

The Washington State project team would like to acknowledge the individuals listed below for their valuable contributions to the development, implementation or evaluation of *Healthy Habits*.

In addition, special recognition is given to the contribution of Diana Birkett. Ms. Birkett acted as the *Healthy Habits* Project Coordinator while pursuing her Master's degrees at the University of Washington, and played a major role in the preparation of this report.

Washington State Department of Health

Cathy Franklin

Kyle Unland

Jacqueline Beard

Sue Babl

Heidi Feston

Margaret Dosland

Rebecca Manolopoulos

Vairakkumar Vairaperumal

University of Washington

Diana Birkett

Maxine Smith

Menrit Francis

Angela Simmons

Carina Evens

Sadeem Aljammaz

Jennifer Edwards

Local WIC Agency Staff and Participants

Appendix A: Results of the Evaluation of the *Healthy Habits* Education Modules

Table 1 shows demographic information for survey respondents, English and Spanish combined.

Table 1 Demographic Information from Staff and Participant Respondents, English and Spanish Combined

	Pre-implementation n=11,289	Post-implementation: Physical Activity n=5523	Post-implementation: Family Meals n=4301
WIC participants	97.3% (10,985)	96.4% (5323)	97.0% (4173)
WIC staff	2.7% (304)	3.6% (200)	3.0% (128)
Average # children in household ±S.D.	2.2±1.4	2.2±1.4	2.2±1.4
High school graduates	67.9%	67.4%	72.3%
On WIC more than 6 months	76.3%	80.0%	78.9%
White	61.9%	51.5%	69.2%
Hispanic	23.4%	34.4%	16.6%
Black/African American	6.1%	5.4%	3.5%
American Indian/Alaska Native	5.8%	4.6%	7.4%
Asian	3.9%	4.5%	2.1%
Native Hawaiian/ Pacific Islander	1.9%	1.9%	1.9%

Table 2 shows outcomes as reported in the English and Spanish questionnaires completed by WIC participants before and after implementation of *Healthy Habits* education modules.

Table 2 Results from WIC Participants Only, English and Spanish Combined

	Pre-implementation	Post-implementation: Physical Activity	Post-implementation: Family Meals
Mealtime behavior			
Mean # meals/week with others in household (\pm S.D.)	5.8 \pm 1.8	5.6 \pm 2.0	5.9 \pm 0.7
Never/not usually watch TV with meals	64.0%	68.3%	68.1%
Always/usually enjoy eating with children	98.1%	97.2%	99.0%
Always/usually sit with children while they eat	96.1%	96.6%	97.3%
Always/usually plan ahead for meals	83.2%	84.1%	81.9%
Physical activity behavior: Stages of Change*			
Pre-contemplation or Contemplation	4.4%	4.9%	3.1%
Preparation	8.1%	6.2%	5.6%
Action	4.8%	3.7%	3.8%
Maintenance	63.2%	65.7%	68.1%
Television behavior			
Children watch less than 3 hours of TV on the average day	64.3%	70.0%	67.3%

* These results refer to the participant and staff level of change with regard to participating in regular physical activity. Regular physical activity defined as following the recommendation of WCPPA to be physically active at least 5 days a week, at least 10 minutes at a time, for a total of 30 minutes each day. Physical activity itself is defined as any type of activity, including running, walking, biking, gardening, and playing with your children.

Table 3 shows the results from the short questionnaires completed by non-English, non-Spanish speaking participants with the help of an interpreter. A total of 314 short questionnaires were completed before implementation and 296 after six months of implementation.

Table 3 Results from Non-English, Non-Spanish Speaking WIC Participants

	Pre-implementation	Post-implementation: Physical Activity	Post-implementation: Family Meals
Mealtime behavior			
Mean # meals/week with other members of household (\pm S.D.)	5.9 \pm 1.9	5.6 \pm 2.1	6.1 \pm 1.4
Have tried eating meals together in the last month	94%	89%	96%
Physical activity behavior			
Mean # days/week physically active (\pm S.D.)	4.5 \pm 2.4	4.1 \pm 2.2	5.5 \pm 1.7
Tried being more physically active in the last month	70%	69%	90%

Table 4 shows selected results from the pre- and post-implementation survey of WIC staff.

Table 4 Physical Activity Results From WIC Staff

	Pre-implementation n=304	Post-implementation: Physical Activity n=200	Post-implementation: Family Meals n=128
Physical activity behavior - <i>Stages of Change</i>			
Pre-contemplation or Contemplation	5.6%	4.0%	3.9%
Preparation	13.8%	11.0%	10.2%
Action	4.6%	2.0%	2.5%
Maintenance	55.6%	61.5%	64.8%