

Promotion Consortium to exchange information and collaborate on breastfeeding promotion activities. USDA recently announced a national campaign by Federal and State WIC programs to promote breastfeeding to WIC mothers and to support all women who choose to breastfeed. The goals of this special effort include encouraging WIC participants to begin and continue breastfeeding, to increase referrals to WIC clinics for breastfeeding support, to increase general public acceptance of and support for breastfeeding, and to provide support and technical assistance to WIC professionals in promoting breastfeeding. Ten pilot States were selected to initiate the campaign and receive technical assistance.

Strategies, then, to increase the initiation and duration of breastfeeding may be an important influence on the health of infants born to low-income women. The success of efforts to improve breastfeeding among low-income women has been inconsistent. Some studies indicate that the initiation of and duration of breastfeeding can be increased through education of pregnant women (for example, Johnson and others, 1984; Kistin and others, 1994; Saunders and Carroll, 1988; Sciacca and others, 1995). Other studies, however, show that educating women can be effective in increasing knowledge, but ineffective by itself in increasing the initiation or duration of breastfeeding (for example, Grossman and others, 1990; Kaplowitz and Olson, 1983; Kelley, 1983). A unique USDA interagency project, the ES/WIC Nutrition Education Initiative, has provided some evidence on what factors may contribute to increased initiation and duration of breastfeeding.

The ES/WIC Nutrition Education Initiative

The Department's WIC program serves as an adjunct to health care. It provides supplemental food, nutrition and health education, and referrals to other health and social services to low-income pregnant, postpartum nonbreastfeeding and breastfeeding women, and infants and children up to age 5 whose family income is at or below established income eligibility standards and who are found to be at nutritional risk. Recognizing the importance of local-level service coordination in meeting nutrition objectives, USDA funded community-based education projects in fiscal year 1993 designed to promote the nutritional health of the neediest WIC Program participants. Under the auspices of the ES/WIC Nutrition Education Initiative, 17 States were competitively awarded funds over a 3-year period for the

development, delivery, and evaluation of innovative nutrition education projects. A total of 18 projects were operated at the State level through the Cooperative Extension System (CES), with funds administered at the Federal level by the Cooperative State Research, Education, and Extension Service (CSREES).^{1,2}

The Economic Research Service (ERS) was asked to assist CSREES in the evaluation of these projects. This report is part of a larger evaluation effort by ERS, which included advice and technical assistance to the projects and Federal-level staff.

The Initiative was conceived as a way to combine the strengths of two nutrition programs aimed at the low-income population—WIC and the Cooperative Extension System's Expanded Food and Nutrition Education Program (EFNEP). Particularly important are WIC's resource of health professionals, access to a large at-risk low-income population, and successful combination of food assistance and nutrition education and EFNEP's intensive educational efforts carried out by paraprofessionals. EFNEP delivers experiential nutrition education to low-income homemakers through paraprofessional aides in a planned curriculum delivered over the course of several months. By emphasizing local flexibility, this Initiative allowed projects to design educational programs tailored to the specific needs of high-risk groups in each of the participating States.

One of the primary objectives of this Initiative was to promote interagency cooperation between WIC and Extension projects because cooperation between the two agencies at the local level was vital to strengthening referral networks and improving program efficiency. All 18 projects had project advisory committees with both WIC and Extension representatives.

A key element of this Initiative was targeting the neediest of WIC participants. The neediest population was defined as those who—as a result of such factors as geographic isolation, age, education, poverty, cultural background, or language—lack the skills, knowledge, and abilities to achieve a nutritious diet and a healthy lifestyle for themselves and their families.

¹One of the States, North Carolina, operated two projects—a breastfeeding promotion project and a pregnant adolescent project.

²The Initiative was originally administered by the Extension Service (ES), which has been reorganized into CSREES; thus, the Initiative was originally designated as the ES/WIC Initiative and retains that designation. A multiagency team, known as the ES/WIC Implementation Team, provided advice and support to the Initiative and was composed of members from CSREES, the Food and Nutrition Service (FNS), and the Economic Research Service (ERS).

The target audiences, objectives, and educational strategies of the 18 competitively funded projects were considerably diverse, a natural outgrowth of the CSREES commitment to tailoring community nutrition programs to meet local needs. For example, a number of projects focused on the rural poor because they often have less access to information and services. Other projects focused on specific ethnic groups (for example, Native Americans, immigrants from Central America, Haiti, Vietnam, and Thailand) because dietary habits vary widely by subculture and nutrition education messages must be tailored accordingly. A number of projects focused on improving the diets of participating women and collecting data on changes in nutrition knowledge and diet-related behavior. Other projects emphasized the importance of traditional EFNEP subjects, including meal planning, food shopping, and meal preparation. Four projects focused primarily on promoting breastfeeding and reporting results on breastfeeding initiation and/or duration. These projects were carried out in Guam, Iowa, Michigan, and North Carolina.

Guam

Specific circumstances on Guam that negatively impact infant feeding might be alleviated by increased rates of breastfeeding. Public health nutritionists and hospital records indicate that diarrhea and dehydration from improper infant feeding practices are common. Frequent power outages, which interrupt refrigeration, and the common practice of leaving food, including an infant's bottle, at room temperature, coupled with Guam's tropical climate, increase the incidence of food spoilage. Guam's project leaders thought that breastfeeding could help ameliorate these environmental and behavioral risks to the safety of infant food. Information available before the start of the project suggested that most young women on Guam did not initiate breastfeeding and, if they did, the duration of breastfeeding was brief. Very little data on breastfeeding initiation and duration had been collected before the start of this project, but WIC data indicated that the initiation rate for its clients might be as low as 12 percent. Therefore, education on breastfeeding was identified as especially important for this project's target population, pregnant adolescents. Thus, the objectives of this project were to increase the initiation and duration of breastfeeding on Guam, especially among adolescents.

Design Overview

The educational intervention component of Guam's project was referred to as Early Experiences and Counseling for Effective Lactation (EXCEL). It was designed to increase adolescent WIC clients' knowledge and skills that would contribute to improving their diets and lifestyles. The other component of EXCEL involved consistent ongoing breastfeeding education in high schools or at WIC clinics. High school students received twice monthly contacts; the group size was usually between 5 and 15 students. The lessons were designed to fit the 45- to 50-minute school class periods. Participants at WIC clinics were seen individually at monthly intervals. In the breastfeeding education portion of the EXCEL curriculum, there was a pre-training phase that allowed staff to learn the beliefs of the participants about breastfeeding and their expectations (for example, anticipated painful or pleasant experience; parents' reactions or support, etc.). Individualized home visits or telephone encounters were also available after birth to provide support for continuing breastfeeding.

Material Use and Development

The design of the EXCEL project included a commitment to produce educational materials that were culturally appropriate and met the needs of learners for whom English is a second language. The population of Guam is primarily Asian or Pacific Islander; 43 percent of the population is native Chamorro, 28 percent is Filipino, and 4 percent are from other jurisdictions of Micronesia. Because of the multicultural nature of Guam's population, 63 percent of all island households speak a language other than English. The EXCEL curriculum consisted of eight lessons, three of which addressed changes in breastfeeding behavior objectives. The breastfeeding topics were (1) The Benefits of Breastfeeding; (2) Getting Started with Breastfeeding; and (3) Succeeding at Breastfeeding. A video developed specifically for this project, *Breastfeeding, the Natural Beginning*, supported the three breastfeeding lessons. The cast of this video represented a cross-section of the ethnicities found on Guam, and most of those in the video were high school or WIC participants.

Evaluation Design and Project Results

To assess the effects of the EXCEL curriculum on participants, the project also gathered breastfeeding data