

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

on a comparison group of adolescents who did not receive the EXCEL lessons but who received the usual care at WIC or with their physician. Assignment of participants to either the intervention or comparison group was not random, but an attempt was made to match the groups as similarly as possible. The intervention and comparison groups were well matched demographically, although there was some age discrepancy between the two groups (a mean age of 17.0 years for the intervention group, and a mean age of 17.8 for the comparison group). There was a total of 365 intervention participants, of whom 209 were women who were pregnant or less than 9 months postpartum. These women received no education from EXCEL staff and made up the nonrandomized comparison group for this study. A total of 574 adolescents who participated in this project represented approximately 23 percent of all adolescents on Guam who were pregnant during the 3-year term of this project.

Initiation of Breastfeeding

The breastfeeding rates of EXCEL intervention participants were consistently greater than that of the comparison group. Breastfeeding was initiated by 81 percent of EXCEL intervention participants who received breastfeeding education, while 65 percent of the comparison group initiated breastfeeding. Although significantly lower than that for the intervention participants, the incidence rate for the comparison group was surprising and unexplainable—a rate much higher than that estimated for WIC clients of all ages on Guam, which, as mentioned earlier, was estimated to be 12 percent.

Duration of Breastfeeding

Intervention participants who received breastfeeding education had a mean breastfeeding duration of 68.6 days compared with a mean of 39.33 days for the comparison group. Forty-two percent of these intervention clients still breastfed when their babies were 2 months old versus 32.2 percent for the comparison group (fig. 1). In addition, the 6-month duration rate (number breastfeeding at 6 months divided by number initiating) was 23 percent, one-third more than the 6-month duration rate for the comparison group, which was 17 percent. The higher initiation rate and 6-month duration rate of EXCEL mothers suggested to the project staff that additional breastfeeding education and support may overcome some of the barriers to longer breastfeeding duration, especially with the adolescent population.

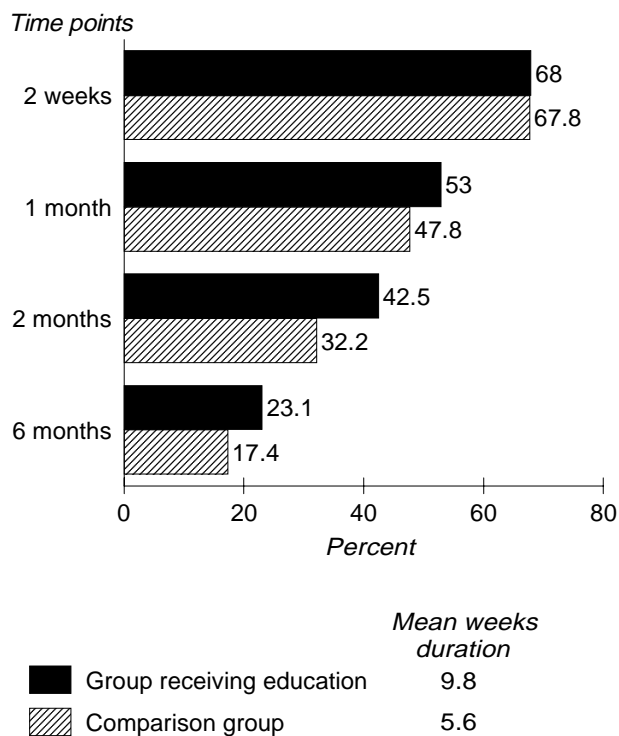
Reasons for Discontinuation of Breastfeeding

Returning to school was the most frequently identified reason for quitting breastfeeding given by adolescent mothers who received the EXCEL breastfeeding education (14 percent). Pain or physical discomfort was the next most frequently mentioned reason for ceasing to breastfeed (13 percent), followed by self-weaning of infant (11 percent). Reasons such as “too demanding” or “didn’t like it” were mentioned by less than 3 percent of the adolescent mothers receiving breastfeeding education.

Iowa

The rate of increase in child poverty in rural Iowa (21.7 percent) in the past decade has been almost twice that of the entire United States (11.9 percent). In addition, the poverty rate for young children in Iowa (ages 0-4) has been over one-third higher than for children

Figure 1
Guam: Share of initiators still breastfeeding at various time points



Source: Compiled by Economic Research Service, USDA, from R. Pobocik, 1996, "Early Experiences and Counseling for Effective Lactation (EXCEL)," unpublished Final Report for ES/WIC Nutrition Education Initiative, University of Guam.