

an evaluation of EFNEP side effects

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Given the brief history of the Expanded Food and Nutrition Education Program (EFNEP), an unusual amount of attention has been focused on the evaluation of the program and factors related to its success. To date, several conclusions are warranted:

1. EFNEP is increasing knowledge of nutritional principles, although there seems to be some plateau of learning, at least among program assistants.
2. EFNEP is resulting in dietary changes more consistent with current notions of balanced and adequate diets, with some exceptions.
3. The program is more effective when conducted on a face-to-face teaching method than when other methods are used.
4. Only a few characteristics of the clientele seem to make any difference in the effectiveness of the program with the individual or family.
5. Only a few characteristics of the program assistants seem to make any difference in the effectiveness of the program.

The research was designed assuming that the program's major goal, nutrition education, is being achieved and this achievement has been demonstrated. Therefore, the focus was on the program's side effects. Two types of side effects were studied—food-related behavior and community-related behavior. The specifics of these two types are described later.

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General Strategy

The general strategy in the present study was to measure a participant's position of the supposed side effects at a particular point in time and then measure it again one year later. During the interim, the program assistants were to work with the families in the "usual" manner, with decisions on methods being a function of the program rather than research requirements.

The intent was to measure side effects of the program as it was being conducted, not on how it might be conducted under experimental conditions. In all, 100 participants in the program were interviewed. Since many strong influences on attitudes and behavior can occur during such a long interval between the first and second interview, 42 interviews were taken with nonparticipants. Only group matching was done, based on residence and background characteristics. In both groups, mothers with 1 child between the ages of 2 and 14 were interviewed. Every effort was made to conduct the first and second interview during the same week of the year.

The design of EFNEP doesn't place either money or food in the hands of the poor; it's an education program depending on indirect effects.

Several reports evaluating this program don't give statistical findings, only tabular ones. There are two reasons for this: First, in comparing volunteer participants with others, we may be dealing with a highly selective group with a greater tendency to change on the variables we're most interested in. Even a random sample wouldn't change this. Secondly, the attitudes and behaviors that change do so with varying rates and difficulty.



To apply the same statistics to changes that are easy and difficult to bring about would make conclusions nonresponsive to the empirical situation, unless, of course, these different rates were the central focus of the research. Therefore, since we didn't draw a probability sample, but took all cases in certain counties, sampling statistics were inappropriate.

We returned to open-ended interviews we'd taken with all state and district level Extension personnel while designing this study. These interviews were taped and transcribed to decide which side effects should be studied. Implicit in these interviews were value judgments about which direction of change would be desirable. For example, professional Extension personnel didn't say that diets (or alienation or knowledge of community resources) would "change," but rather that they would "improve." The pattern of the findings is consistent with these "expectations of improvement."

Table 1 lists the changes desired by Extension personnel and the corresponding findings.

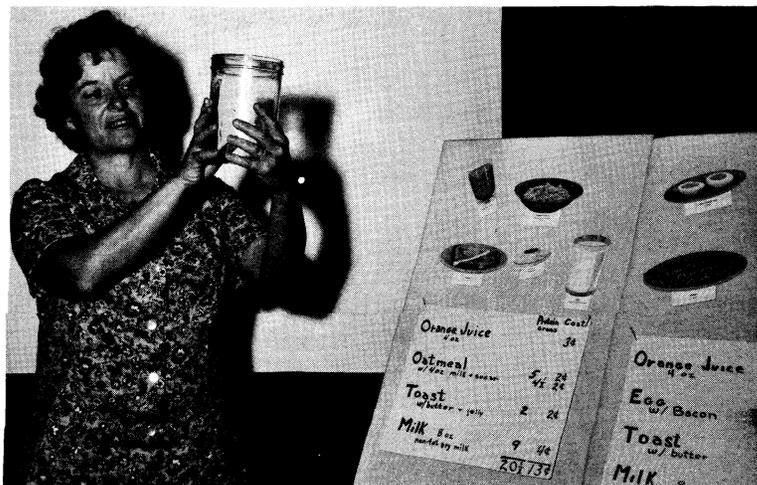
Since the main thrust of factors outside the before-and-after study was firmly in the direction of unfavorable results, and the pattern of findings of our study was clearly in the direction of favorable results, we can conclude that EFNEP may be given a positive evaluation.

Much informal discussion is still going on about whether the structure of the Extension teaching method that involves paraprofessionals should be retained. This discussion usually implies a negative response. Such skepticism isn't unique to

Table 1. Summary of EFNEP evaluation.

<u>Desired by Extension personnel</u>	<u>Findings in this study</u>
1. Define food more in terms of nutritional value.	1. Slight increase among participants, no change among nonparticipants.
2. Shop for several days supply of groceries at a time.	2. No change in either group.
3. Plan meals for several days at a time.	3. Participants increased, nonparticipants decreased meal planning.
4. Increase nutritional value of diet.	4. Participants increased, nonparticipants decreased.
5. Decrease feelings of powerlessness.	5. Increase among all, but less increase among participants.
6. Increase knowledge of and orientation toward solving problems through organized community resources.	6. Increase among all, but more among participants.
7. Increase participation.	7. Slight increase among those in EFNEP and sizable decrease in comparison group.

Of the seven desired consequences of participation in EFNEP, six were substantiated by this study. The seventh was found favorable among both groups at both the first and second interview.



Extension. Teachers at first were highly negative about including teacher-aides in the schools, and nurses are still critical of paramedics. But to the extent that a negative conclusion is reached about program assistants in Extension teaching, that conclusion clearly contradicts the research on effectiveness.

Food-Related Changes

The side effects thought to be most directly related to this educational program concern attitudes and behavior related to food, since these factors are expected to be relevant subjects of conversation between program assistants and the clientele.

General Attitudes Toward Food

Two questions were asked concerning how the respondents "think about food" and the criteria used in purchasing one food as opposed to another. In virtually every case, the respondents rated such words as nutrition, health, and energy as "extremely important." A slight tendency existed for participants to rate nutrition higher in the generalized definition at the second interview, but the change was very small.

Meal Planning

It's thought that if meals are planned, people will make decisions less on the basis of impulse and momentary appetite and more on the basis of nutritional requirements. The findings indicate increasing meal planning among participants during the year, and a slight decrease among nonparticipants. The decrease among nonparticipants may be due to such factors as the wide publicity given rising food cost and scarcity.

Shopping Patterns

When people buy food on a day-to-day basis, whims are more likely to enter into consumer choice. At both interviews, shopping for several days food supply at a time was characteristic of both participants and nonparticipants. No change in either group was noted.

Dietary Changes

Do diets change as a result of participation in EFNEP? To find out, both participants and nonparticipants were given a diet recall for the 48 hours before the first and the second interview. It was given for both the mother and one child. A nutrition score was developed for each person both times, using the same technique.

A nutrition specialist coded the diet recalls. The coding was also done separately on each of six food groups: meat, bread and cereal, milk products, fruits and vegetables, vitamin C, and vitamin A. One point was scored for adequate intake in any one of these food groups. Thus, a person who had an adequate intake in all 6 food groups on both days would be given a score of 12. By adding the mother's score to the child's, a family score, ranging from 0 to 24, could be assigned.

Possibly due to the "flap" over food scarcity and prices during the time of the second interview (Winter, 1973-74), over 60% of the nonparticipants had lower nutrition scores at the second interview and only about 30% had higher scores. The trend was reversed among participants, however, with slightly more than 50% having higher scores the second time, and 42% having lower scores (see Table 2).

Table 2. Change in diet recall.

	<u>Participants</u>		<u>Nonparticipants</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Diets "improved"	52	52%	12	28.6%
Diets the same	6	6	4	9.5
Diets less adequate	<u>42</u>	<u>42</u>	<u>26</u>	<u>61.9</u>
Total	100	100%	42	100%

While many mothers changed their scores during the year, this was mostly due to changes in the diet of the child. The areas of inadequacy were more often in vitamin A, vitamin C, and fruits and vegetables. When the amount of change rather than the number and percentage of people changing is taken into account, the findings also favor the program. Compared to nonparticipants, twice the proportion of participants increased their scores from the first interview to the second by at least three points (33% compared to 16%). Likewise, twice as many participants as nonparticipants increased their scores by at least four points (24% compared to 12%).

Community Related Changes

Feelings of Powerlessness

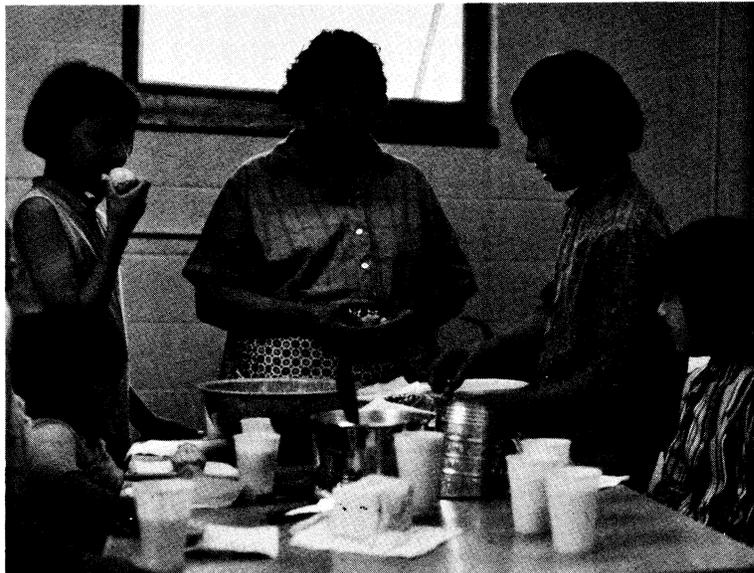
Several factors anticipated in areas less directly related to food were sociological and sociopsychological involvement in the community.

One anticipated community-related side effect was a change in the feeling of powerlessness, sometimes called *alienation*. This is a person's view of his ability to have some control of his destiny. The scale used to measure powerlessness and alienation focuses on situations dealing with the day-to-day ability to control life circumstances.

The scale consists of 13 items involving the circumstance control in the areas of family living, economics, political decision making, church, and school. One point was given for each response that expressed a feeling of powerlessness. For example, in the one item, "We can do quite a bit in keeping prices from going higher," a point was given for a "disagree." In "Decisions about the school are made by a few people at the top, and there is not much the rest of us can do about it," a point was given for agreement.

By the second interview, several social conditions (inflation, the fuel shortage, and Watergate) led to the hypothesis that feelings of powerlessness would increase. However, it was thought that the ability of the program assistant to suggest sources of help in solving problems would lead to decreasing feelings of powerlessness.

The former hypothesis prevails with 42% of the participants and 45% of the nonparticipants experiencing an increase in their feelings of powerlessness during the year. In the other direction, 40% of the participants and 36% of the nonparticipants experienced a decrease in feelings of powerlessness.



Although the data in Table 3 indicate that EFNEP lessened the effect of the general social conditions promoting increasing feelings of alienation and powerlessness, the differences between participants and nonparticipants weren't great. Perhaps these feelings among the poor are so strong and widespread that more time and more direct effort is needed to change these feelings.

In the literature on feelings of powerlessness, it's thought that such feelings stem from the mass society and therefore would be found more among urban than rural groups. Our study supported this (see Table 4).

As in the case of the food-related changes, the pattern here extends the conclusion that participation in EFNEP helps the poor resist factors in society at large that inhibit their reaching middle-class goals.

*Change in
Problem-solving
Method*

A logical outgrowth of changes in feelings of alienation is a change in the method of problem solving. This variable was developed from a series of questions in which problems that might be experienced were mentioned.

The respondents were asked where a person could go for help. Our response classification has to do with the use of formal organizations, formal agencies, governmental programs, etc., that are intended to solve those problems . . . welfare, schools, program assistants. Responses depended in part on knowing these agencies are available and the intent of each agency's program. But, responses also depended on orientation toward thinking of these agencies when presented with the problems. Therefore, a decrease in mentioning formal organizations wouldn't necessarily mean a decrease in knowledge, but a decrease in the inclination to go to such agencies for help.

We found participants were more inclined at the second interview to think of such agencies and organizations in solving their problems than at the first. This was more true of program participants than of nonparticipants. Some increase occurred among the nonparticipants (39% increased their orientation in this direction compared to 51% of the participants), and the decrease likewise was less among the participants than among the nonparticipants. Possibly, this effect was due to the participants generalizing the usefulness of EFNEP to other agencies. Doubtless, information about agencies is passed along

Table 3. Change in orientation toward formal organizations and agencies.

<u>Orientation toward organization:</u>	<u>Participants</u>		<u>Nonparticipants</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Increased	49	51.0%	16	39.0%
Same	26	27.1	12	29.3
Decreased	<u>21</u>	<u>21.9</u>	<u>13</u>	<u>31.7</u>
Total	96	100%	41	100%

Table 4. Rural-Urban comparisons of change in feelings of powerlessness.

Feelings of powerlessness	Participants				Nonparticipants			
	Rural		Urban		Rural		Urban	
	No.	%	No.	%	No.	%	No.	%
Decreased	33	47.8%	7	23.3%	14	45.2%	1	9.1%
Stayed the same	10	14.5	7	23.3	7	22.6	1	9.1
Increased	<u>26</u>	<u>37.7</u>	<u>16</u>	<u>53.3</u>	<u>10</u>	<u>32.3</u>	<u>9</u>	<u>81.8</u>
Total	69	100%	30	100%	31	100%	11	100 %

in the process of conversation between client and program assistant.

Social Participation

If peoples' feelings of powerlessness in the face of agencies and institutional organizations decreased, and their orientation toward the use of formally organized community resources increased, it might logically be expected that the highest step in this orientation would be an increase in the actual participation in organizations. A participation scale in several areas of institutional life was administered at both interviews, but we're limiting our report to participation in civic and service organizations, as reflected in regular attendance at meetings.

The data show that the participants had a much lower participation rate (13%) than did the nonparticipants (33%) at the first interview. The 2% increase in participation among EFNEP participants during the year is a dramatic contrast to the sizable 11.4% decrease of the comparison group. It's possible that the fuel shortage brought about the decrease among those not in EFNEP, but the contrast indicates the ameliorating effect of the program.

**Conclusions:
An Extension
Perspective**

Taken individually, the contrasts between participants and nonparticipants aren't overwhelming. Rather, it's in the consistent build-up of differences between the two groups that an impressive accumulation of comparisons can be found. To appreciate the pattern, it's necessary to lay a groundwork for interpretation. One element of this groundwork is the many factors "outside" the study that seemed to work against the kinds of changes noted. The second element is a part of the research design introduced at the beginning of the study to determine what would be desirable and undesirable changes, independent of our values.

Here are several factors that might prevent desirable changes

1. The variables measured here reflect fundamental cultural patterns and are therefore difficult to change. Food and its associated factors are possibly as funda-

mental to ethnocentrism and cultural beliefs as any single factor in man's behavior. Many sociologists who have gone abroad have said: "You need not learn their language, but you must eat their food." In American culture and society, the voluntary association is also central . . . Americans solve problems this way. Yet, the poor are reluctant either to join these associations or "take their problems to strangers."

2. The design of EFNEP doesn't place either money or food in the hands of the poor; it's an education program depending on indirect effects.
3. The teaching is done only by paraprofessionals, not professional nutritionists.
4. We allowed only one year for change to occur, a long enough time for complete loss of anything like experimental control, but all-too-short for the expectation of significant change in such fundamental culture patterns.
5. In the two main areas of side effects, dramatic changes occurred in the society at large which could



be expected to produce unfavorable results. In the area of food, headlines and news broadcasts were accompanied by parlor discussions of food shortages, "ridiculous" price increases in foods, excessive profits by grocery chains, and even consumer strikes just before and during the time of the second interview. Such changes discriminate against the less flexible budgets of the poor.

6. In the area of community-related change, the headlines were also mainly focused on the fuel shortage, Watergate, and inflation generally, conditions about which the individual might feel helpless.
7. There were also factors specific to these respondents. The first interviews indicated that recruitment was quite suitable to the program goals. The participants were poor and had extremely poor diets. But, often those whose need was greatest are difficult to work with, especially when behavior change is indicated. Those "low" on one factor usually are low on a variety of factors, and to change one requires changing the others. Further, those who are underprivileged develop, through some reality assessment, feeling of resignation or bitterness, which deters change.
8. Many of the respondents received commodity foods, and during the study year cheese was eliminated from this group. This change would, in a mechanical way, work against increasing nutrition scores because points were assigned for intake of milk products.

The combination of all these factors represents a major thrust in the direction of, at best, no change, but probably towards unfavorable changes. But the results of our research consistently favor the program. It's therefore important to add the second element of an Extension perspective: What do we mean by favorable?

EFNEP'S Future

More specifically, EFNEP is receiving less emphasis if you take into account increased costs and the pilot-nature of the program conducted so far. If you consider the general dismantling of the poverty program, we may expect EFNEP to experience further cuts. County government hasn't been inclined to take over the sponsorship of this program (only one county in Minnesota has done so). Decision-making arenas at federal, state, and local levels must rethink the policy of limited scope for EFNEP. Very early, a substantial body of literature supported the relationship between undernourishment and job absenteeism, and more recently the relationship between malnutrition and mental retardation. Limited funds for EFNEP may be a false economy.