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# **The Impact of SNAP-ED and EFNEP on Program Graduates 6 Months After Graduation**

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**Abstract:** Research was conducted to determine if graduates from either the Supplemental Nutrition Assistance Program-Education or Expanded Food and Nutrition Education Program maintained behavioral changes 6 months after completing the program. Staff asked graduates to complete a 10- or 15-question behavior checklist that was identical to the entry and exit survey completed by clients. Thirteen of the 15 behavior questions were significantly improved from pre to post as well as pre to follow-up (p

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## **Introduction**

In the 1960s, it was recognized that malnutrition and hunger were common problems among families living at or below the poverty line. Most nutrition education programs at that time were not accessible to the lower

income population because of practical constraints such as lack of transportation, lack of childcare, or work schedule. The Expanded Food and Nutrition Education Program (EFNEP) [http://www.csrees.usda.gov/nea/food/efnep/pdf/efnep\\_program.pdf](http://www.csrees.usda.gov/nea/food/efnep/pdf/efnep_program.pdf) was created in 1969 through the United States Department of Agriculture's (USDA) Cooperative Extension Service to address this problem. EFNEP is now offered in all 50 states and several American territories.

EFNEP seeks to improve the health of low income people by offering practical lessons in nutrition, resource management, and food safety. The program targets low income adults, typically the head of the household. Participants learn about basic nutrition, the United States (US) Dietary Guidelines for Americans and MyPyramid, food preparation, shopping for nutritious foods on a budget, and food safety and sanitation. EFNEP is usually administered through a series of lessons conducted over several months (Brink & Sobal, 1994; Cason, Scholl, Kassab, 2002; Dollahite, Olson, & Scott-Pierce, 2003; Dollahite & Scott-Pierce, 2003; Green, Wang, & Ephross, 1974; Greenwell-Arnold & Sobal, 2000; Torisky et al., 1989).

Because EFNEP is such an extensive outreach program and requires federal and state funding, it is essential to document program effectiveness. Previous research noted that EFNEP participants improved their dietary intake and eating behaviors from entry to graduation. In addition, when graduates were surveyed six to 12 months post-graduation, those improvements were maintained or improved (Green et al., 1974; Torisky et al., 1989; Brink & Sobal, 1994; Greenwell-Arnold & Sobal, 2000). Greenwell-Arnold and Sobal (2000) found that participants showed significant improvement in 10 of the 12 behaviors at graduation. Those behaviors included preparing meals from scratch, using processed foods less often, reducing fat, leaving food unrefrigerated, thawing food at room temperature, running out of food before the end of the month, comparing prices, using a grocery list, eating breakfast, and planning ahead. However, there was no improvement in disposing of garbage daily or buying advertised foods. At follow-up, all behaviors either improved or remained stable, with the exception of "susceptibility to advertising," which declined. Other research found there was a statistically significant improvement in all 12 food behaviors between entry and follow-up. The improvement occurred mostly before graduation and was maintained through the follow-up period (Green et al., 1974; Torisky et al., 1989; Brink & Sobal, 1994; Greenwell-Arnold, & Sobal, 2000).

Another large federal/state funded nutrition education program is the Supplemental Nutrition Assistance Program-Education (SNAP-Ed) Project, formerly known as the Food Stamp Nutrition Education Project, which began in Wisconsin in the late 1980's. In 1992, seven state agencies had approved SNAP-Ed plans. As of 2007, there were 52 SNAP-Ed plans approved. The goal of SNAP-Ed is to improve the likelihood that persons receiving SNAP (formerly known as food stamps) benefits will make healthy food choices within a limited budget. SNAP-Ed teaches clients (adult and youth) nutrition information based on the US Dietary Guidelines for Americans and MyPyramid. The federal SNAP-Ed program determined key behavioral objectives for their state partners to emphasize in their teaching of SNAP clients, which include: Eating fruits and vegetables every day; eating whole grains and fat-free or low-fat dairy products every day; being physically active every day as part of a healthy lifestyle; and balancing caloric intake from food and beverages with calories expended. Limited research has been done on looking at behavior change in clients participating in SNAP-Ed.

Extension has been pressured to assess and document behavior change in program participants in order to justify the existence of their programs. Stup (2003) addressed that program evaluation is a powerful tool in discussing the value of extension programs to stakeholders. Those who work in Extension have to demonstrate that the public funds used in support of Extension programming do contribute to public value. Several Extension programs are currently designing evaluation templates that can be used not only statewide but nationally as well. This will help state and nationally based programs like EFNEP and Serv Safe to provide documented program impacts to stakeholders on how these programs contribute to the improvement of the behavioral outcomes of target audiences (Boyer et al., 2009; Jayaratne, Harrison, & Bale, 2009;

Jayaratne, Hanula, & Crawley, 2005). This evaluation process is critical in demonstrating the programs value to the public. It also examines medium term outcomes by showing post program evaluation 6 months to 2 years after the program. This is valuable information for stakeholders to show if the behavior change is temporary or if it has been integrated by the participant.

Programs that are focused on behavior change document change in areas such as cognitive, social, psychomotor, and affective/emotional dimensions (Boone & Boone, 2005; Pratt & Bowman, 2009). Extension programs typically target cognitive behaviors, which include knowledge and information (Pratt & Bowman, 2009). Programs need to include and evaluate the behavior changes in social, affective/emotional, and psychomotor dimensions. Examples of Extension programs that have demonstrated that behavior change can occur in these other dimensions are: Strong Women (psychomotor), Censible Nutrition (affective/emotional and social), and WIN the Rockies (all dimensions). The purpose of the project reported here was to examine behavior changes in EFNEP and SNAP-Ed participants who completed a nutrition education program delivered by Extension at entry, exit, and 6-months post-graduation to determine medium-term behavior changes.

## Methods

Research was conducted to determine if adult graduates from the Nutrition Education Program (NEP), which includes SNAP-Ed and EFNEP, maintained their behavioral changes 6 months after completing a minimum of six nutrition and food budgeting lessons. The SNAP-Ed and EFNEP programs are conducted very similarly in Nebraska. Participants were asked to complete a 10- or 15-question behavior checklist survey that was identical to the entry and exit survey completed by the participants when they enrolled and graduated from the program. NEP staff were asked to contact the participant a minimum of three times to collect the follow-up data.

The behavior checklist data was collected one of three ways: mail, phone, or in-person. The behavior checklist was mailed to the participant at 6 months post-graduation along with a postage-paid envelope, with the expectation that the behavior checklist would be filled out and returned. NEP staff could also call the participant and collect the information over the phone. The third option of data collection was an in-person interview. If a participant attended an additional educational session, staff could collect the data by either having the participant fill out the survey on their own or reading it to them for clarification.

Upon graduation, NEP staff were asked to let the participant know that they would be receiving additional information from them in the next 6 months. The participants received a two-page newsletter on basic nutrition, physical activity, and food budgeting every other month for the next 6 months. NEP staff were asked to send out specific newsletters based on a nutrition topic appropriate for the time of year and season to participants at 2 and 4 months post-graduation. An optional third newsletter could be sent at the 6 month point, when the behavior checklist questions were requested for the third and final time. Once the third survey (graduate follow-up) was collected, NEP staff were asked to send a copy of the entry and exit surveys, along with the graduate follow-up survey to the state NEP office. The data was then entered into a Statistical Analysis Software (SAS) based windows program (JMP 7.0.2) and analyzed to determine the effectiveness of SNAP-Ed/EFNEP nutrition education at six months post-graduation using Chi Square analysis.

## Results

Data was collected for the fiscal years 2007-2009 from both EFNEP and SNAP-Ed graduates 6 months after they graduated from NEP. There were 4,400 graduates with 1,100 graduates participating in the graduate follow-up survey, with a response rate of 25%. However, out of the 1,100 graduates who were located to

complete the follow-up survey, 100% agreed to do so. The entry, exit, and follow-up behavior checklist percent responses are shown in Table 1.

The entry, exit, and graduate follow-up behavior checklists were entered into a JMP database. All responses were given on a 5 point scale: 1 = Never; 2 = Seldom; 3 = Sometimes; 4 = Most of the time; and 5 = Almost always.

**Table 1.**

Percent Response of NEP Participants (n=1,100) at Entry, Exit, and Graduate Follow Up

| Question   | Time | Never | Seldom | Sometimes | Most of the Time | Almost Always |
|--|------|-------|--------|-----------|------------------|---------------|
| 1. How often do you plan meals ahead of time?*                                 | Pre  | 8.5   | 9.3    | 30.2      | 30.7             | 21.3          |
|  | Post | 2.2   | 4.6    | 25.9      | 44.3             | 23            |
|  | FU   | 2.5   | 3.5    | 29.7      | 41               | 23.3          |
| 2. How often do you compare prices before you buy food?*                       | Pre  | 7.2   | 7.9    | 17.0      | 27.7             | 40.2          |
|  | Post | 4.12  | 6.13   | 13.7      | 35.0             | 41.0          |
|  | FU   | 3.6   | 4.0    | 14.1      | 37.2             | 41.1          |
| 3. How often do you run out of food before the end of the month? *             | Pre  | 28.2  | 24.1   | 28.1      | 11.0             | 8.6           |
|  | Post | 39.2  | 23.3   | 24.4      | 9.1              | 4.0           |
|  | FU   | 45.5  | 24.5   | 18.4      | 7.1              | 4.5           |
| 4. How often do you shop with a grocery list?*                                 | Pre  | 20.0  | 9.0    | 19.5      | 23.0             | 28.5          |
|  | Post | 13.2  | 5.1    | 17.1      | 33.8             | 30.7          |
|  | FU   | 10.3  | 5.3    | 19.3      | 34.4             | 30.8          |
| 5. How often do you let meat and dairy foods sit out for more than two hours?* | Pre  | 68.2  | 18.5   | 9.1       | 2.0              | 2.2           |
|  | Post | 77.6  | 14.8   | 5.1       | 1.2              | 1.2           |
|  | FU   | 80.1  | 11.6   | 5.0       | 2.0              | 1.3           |
| 6. How often do you thaw frozen foods at room temperature?*                    | Pre  | 22.6  | 17.2   | 25.9      | 18.2             | 16.1          |
|  | Post | 39.8  | 21.2   | 23.4      | 10.7             | 4.9           |
|  | FU   | 44.6  | 19.5   | 22.1      | 9.8              | 4.0           |

|  |      |      |      |      |      |      |
|--|------|------|------|------|------|------|
| 7. When deciding what to feed your family, how often do you think about healthy food choices?* | Pre  | 3.8  | 6.8  | 23.9 | 38.8 | 26.7 |
|  | Post | 2.2  | 4.4  | 15.4 | 51   | 28   |
|  | FU   | 1.9  | 2.3  | 14.6 | 50.6 | 30.6 |
| 8. How often have you prepared foods without adding salt?*                                     | Pre  | 24.3 | 18.3 | 22.3 | 18.0 | 17.1 |
|  | Post | 20.1 | 22.2 | 27.7 | 16.2 | 13.8 |
|  | FU   | 21.5 | 19.3 | 31.5 | 13.0 | 14.7 |
| 9. How often do you use the "Nutrition Facts" on the food label to make food choices?*         | Pre  | 25.4 | 17.2 | 28.8 | 14.9 | 13.8 |
|  | Post | 8.5  | 13.0 | 33.3 | 27.7 | 17.5 |
|  | FU   | 8.0  | 12.1 | 31.9 | 30.3 | 17.7 |
| 10. How often do your children eat something in the morning within two hours of waking up?*    | Pre  | 5.4  | 3.1  | 12.5 | 20.9 | 58.1 |
|  | Post | 2.6  | 1.8  | 7.5  | 26.1 | 62.0 |
|  | FU   | 2.6  | 2.4  | 5.1  | 32.3 | 57.6 |
| 11. How often do you wash your hands before preparing food?                                    | Pre  | 1.1  | 1.1  | 5.8  | 15.5 | 76.5 |
|  | Post | 1.0  | 0.0  | 2.4  | 14.0 | 82.5 |
|  | FU   | 1.0  | 1.0  | 4.1  | 10.8 | 84.1 |
| 12. How often do you use community food resources like a food pantry or soup kitchen?          | Pre  | 58.1 | 19.9 | 15.6 | 3.4  | 3.0  |
|  | Post | 56.6 | 20.2 | 17.7 | 3.7  | 1.8  |
|  | FU   | 63.1 | 20.3 | 11.5 | 3.1  | 2.0  |
| 13. How often do you drink regular pop (pop that is not diet)?*                                | Pre  | 15.6 | 22.5 | 23.9 | 15.0 | 23.0 |
|  | Post | 19.7 | 27.1 | 28.2 | 12.0 | 13.0 |
|  | FU   | 21.5 | 28.2 | 24.3 | 12.0 | 14.0 |
|  | Pre  | 17.5 | 15.8 | 27.9 | 18.7 | 20.1 |

|   |      |      |      |      |      |       |
|---|------|------|------|------|------|-------|
| 14. How often do you use a written spending plan or budget?*  | Post | 10.5 | 11.3 | 28.6 | 25.6 | 24.0  |
|   | FU   | 13.6 | 9.7  | 24.6 | 26.6 | 25.5  |
| 15. How often are you physically active for at least 30 minutes on 4 or more days of the week?*         | Pre  | 9.2  | 14.9 | 27.2 | 19.2 | 29.5  |
|   | Post | 3.5  | 9.25 | 25.0 | 25.5 | 36.75 |
|   | FU   | 4.9  | 10.5 | 29.3 | 23.2 | 34.1  |
| *Indicates significant difference in the percent response based on Chi Square Analysis at $p < 0.001$ . |      |      |      |      |      |       |

Overall, Table 1 shows that program graduates improved 13 of their behaviors from entry into the program to exit and maintained those behaviors six months after graduation. In five of the behaviors, the percent response continued to improve in the 6 months after the graduate completed the program.

The results of the study reported here demonstrate that 1,100 (25%) graduates from two Extension-based programs, EFNEP and SNAP-Ed, in one Midwestern state were able to improve and/or maintain their behaviors from when they entered and exited the program, as well as 6 months later. Benavente, Jayaratne, and Jones (2009) noted that it is extremely challenging to reach limited resource participants because they lack transportation, move around a lot, and don't always have a system in place in order to communicate with them like phones or computers. Of those participants who were reached from the list of graduates, 100% of them agreed to do the follow-survey.

This data helps to support that the EFNEP and SNAP-Ed programs are able to help limited resource clients change and maintain their behaviors. The behaviors that improved in the study were nutrition practices (meal planning, making healthy food choices, preparing foods without adding salt, reading the nutrition facts label, having children eat breakfast and drink less soda pop); food resource management (planning meals, comparison shopping, not running out of food by the end of the month, using a grocery list and having a spending plan/budget); and food safety practices (thawing and storing foods properly). In addition, the behavior of being physically active for at least 30 minutes on 4 or more days of the week also improved. Therefore, these nutrition education programs have demonstrated a positive effect on behavior change.

## Conclusions/Implications

It is important for Extension programs to be able to document short-term, medium-term, and long-term impact. This research confirms that medium-term impact from Extension nutrition education programming is realistic. This impact can be used to demonstrate to stakeholders that Extension makes a difference, through focused and targeted Extension programming at a time where limited Extension funding needs to be strategically allocated. This type of research can also have implications in other areas of Extension programming. Methodologies of this sort could be used in any program with clear objectives and a strategic evaluation plan that addresses both knowledge and behavior change.

SNAP-Ed and EFNEP are two examples of programs that document behavior change in the cognitive, social, psychomotor, and affective/emotional dimensions. For possible future research, Hoover, Martin, and Litchfield (2009) noted that EFNEP uses quantitative measures including food and nutrient intake data from 24-hour recalls and food behaviors from self-reported surveys. However, the current reporting system does not capture perceptions and experiences, yet these can affect behavior change. Future research could examine the perceptions and experiences documented by EFNEP and SNAP-Ed to determine further impact on behavior change.

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