Understanding the Impact of Food Assistance Program Usage on Diet among American Indians

Joel Gittelsohn, Muge Qi, Marla Pardilla, Sonali Suratkar
Center for Human Nutrition, Bloomberg School of Public Health, Johns Hopkins University[1]

Background and Methodology

Food Assistance Programs (FAP), including WIC, Food Stamps and the Food Distribution Program on Indian Reservations (FDPIR), aims to assure low-income American Indian (AI) households an adequate, nutritious food supply. Many low-income American Indian households on reservations rely heavily on food assistance to meet their nutritional needs. However, limited accessibility, availability and affordability of healthy foods on AI reservations may constrain food purchasing and consumption patterns of low-income AI households. While FAP participation helps in the promotion of food security and increases food purchasing power of low-income households, its impact on food-related psychosocial factors, food behaviors and diet quality of low-income American Indian households is unclear.

The goals were as follows:

1. Examine the impact of patterns of FAP usage patterns (participation in commodity foods (CF), food stamps (FS) and WIC programs) on other aspects of food acquisition and usage (e.g., type and distance of food source used, frequency of visiting food sources, shopping practices, food choices, etc).

2. Examine the relationship between the FAP usage patterns and dietary quality among AI FAP participants.

3. Develop culturally appropriate nutrition intervention components to incorporate into the Healthy Stores intervention programs that specifically target the patterns of FAP usage.

4. Incorporate traditional ways of cooking into the use of commodity foods and find ways of promoting traditional foods through FAPs.

5. Examine the impact of our program on FAP usage.

Navajo Healthy Stores Program:

In the past year we accomplished three main objectives: 1) completion of all six phases of the first round of the Navajo Healthy Stores program in approximately five store areas (n=~12 participating stores) of the Navajo Nation; 2) initiation of post-intervention data collection; and 3) review of progress and preparation for training for round two of the program in other areas of the Navajo Nation. The round 1 intervention was implemented with moderate reach, low to moderate dose and moderate to high fidelity. Based on interventionist logs, we achieved over 8000 Navajo community member interactive sessions as part of our store visits (Table 1). Implemented almost entirely by eight Navajo Special Diabetes Program nutritionists approximately 1-2 times/month, our activities reached almost as many community members as all other NSDP activities combined. To date, we have completed 125 of the post-

[1] Complete manuscript will be submitted for publication in relevant academic journals. This is an update report on the project submitted in August 2009.

intervention surveys, out of 274 respondents measured at baseline (thus far, a 44% retention rate). The remainder of surveys will be completed over the summer 2009. Additional in-depth interviews were conducted with NHS team members, NSDP directors and staff and others to assess challenges and successes and will be incorporated into the plan for round 2 of NHS. Preliminary analyses on round 1 data are underway and initial results were presented to NSDP directors and staff in June 2009. As part of the collaborative agreement with the NSDP, Dr. Gittelsohn provided a series of capacity building workshops and trainings for NSDP program staff, including workshops on evaluation, data analysis, intervention materials development and grant-writing, with the long term goal to transfer the NHS program to the NSDP. In June 2009, a training seminar for NSDP directors and staff was held to kickoff the round 2 NHS intervention.

Table 1: Results from the NHS round 1 intervention- interventionist logs data.

Month	Visits with inter-active session	Total sessions	Brief visitors	Brief visitors	Long visitors	Long visitors	Total visitors	Total visitors
			Mean	Total #	Mean	Total #	Mean	Total #
Dec-07	1	35	-	13	-	33	-	46
Jan-08	5	16	29.2 (16.3)	146	29.2 (35.4)	146	58.4 (26.1)	292
Feb-08	6	12	44.0 (32.1)	264	36.0 (37.5)	216	80.0 (47.2)	480
Mar-08	7	8	62.3 (79.0)	436	26.3 (28.3)	184	88.6 (105.0)	620
Apr-08	7	8	9.6 (8.8)	67	33.9 (7.5)	237	43.4 (15.6)	304
May-08	12	12	20.3 (17.7)	244	44.9 (21.2)	539	65.3 (33.3)	783
Jun-08	7	8	23.7 (14.0)	166	47.0 (15.5)	329	70.7 (23.9)	495
Jul-08	9	10	27.7 (9.5)	249	42.1 (21.3)	379	69.8 (27.0)	628
Aug-08	10	11	25.6 (16.7)	256	40.4 (17.5)	404	66.0 (31.9)	781
Sep-08	8	11	49.3 (12.5)	364	72.9 (20.5)	445	122.1 (27.9)	809
Oct-08	8	8	49.2 (12.5)	394	72.9 (20.5)	583	122.1 (27.9)	977
Nov-08	10	10	34.6 (16.7)	346	41.3 (22.0)	413	75.9 (37.2)	759
Dec-08	2	3	33.0 (2.8)	66	48.5 (21.9)	97	81.5 (24.7)	163
Jan-09	4	5	47.0 (6.9)	188	42.2 (13.6)	211	89.5 (20.8)	358
Feb-09	0	0	0	0	0	0	0	0
Mar-09	4	6	40.8 (6.9)	163	45.8 (11.5)	183	86.5 (15.5)	346
Apr-09	4	5	39.3 (20.1)	157	42.3 (9.4)	169	81.5 (29.2)	326
TOTAL	104	168		3519		4568		8167

Sustaining the Apache Healthy Stores program

From April 2008 through September 2008 a modified version of the Apache Healthy Stores program was implemented on the San Carlos Apache reservation by San Carlos Diabetes Prevention Program (SCDPP) staff. The program was also implemented in the Cibecue Community of the White Mountain Apache tribe under the guidance of a local tribal government representative from June to December 2008. The program and materials were greatly modified from the original AHS materials. Multiple capacity-building workshops were held to support the activities of the SCDPP directors and staff during

the program period. Detailed process evaluation data were collected during the implementation of both programs and will be the focus of upcoming analyses.

Key Findings

Intervention Implementation and Food Assistance: It has been observed that even though most Navajo are eligible for FS or other forms of food assistance, they sometimes do not receive it due to access problems (poor transportation, no transportation, distances, foods availability at local stores, disability, etc.). The poor economy has made things worse. FS recipients may trade FS card for money for gas, diminishing availability of food for family. A lot of people talk about how they feel about food, hunger and access. People do not think in terms of healthy choices, quality foods, easy access etc., because they may not have a job, money, transportation, variety to choose from, food education, while there is illness, and therefore they eat just what they can get. Healthy food may not be their priority sometimes when there is scarcity of food in the household.

The real impact of our intervention was seen most through the grocery store interactive sessions (food demos, taste tests). Community members did not have to put out any money to take part in a food demo., so they were able to (1) they taste something different for free, (2) listen to the healthy foods education, (3) take the information home and have time to think about it. The shoppers liked the hands-on activity and greatly appreciated being invited to taste new or less commonly purchased foods. One man who could not read and write English, asked us to make a healthy foods shopping list for him by the months, he did not have enough money, but he received 1 check a month, and he wanted to spend it on healthier foods.

Lessons learned: We learned to set up the food demos at the Commodity Food day, and use commodity food recipes for demos. In addition to implementation of interactive sessions in food stores, we learned that working closer to the government food sources, like the food stamp offices, WIC offices, senior centers, perhaps, can be more effective. We also learned to teach ways to incorporate healthier cooking techniques/ foods into traditional cooking, examine the traditional foods recipes and make them healthier (e.g., olive oil instead of lard, wheat flour instead of white flour, turkey stew instead of mutton stew etc.). We have noted that there is scope to increase healthy food availability in few big stores that exist on the NN as they are willing to work with NN Health Department, however, the challenge of working with small stores operated by non-rez residents remains as they primarily stock unhealthy foods and are more widely used and easily accessible.

Data collection:
Results of preliminary analyses of baseline Navajo data by food assistance participation: About 77% of the baseline Navajo sample was female with a mean age of 46.6 (17.1) years. About a quarter of the sample was 60 years or older. The mean household size was 4.2 (2.3) and a major proportion (34.1%) were married. Around 38% of them had full-time jobs and only 29% of the respondents had schooling >12 years. A little more than a third of the baseline NHS sample of 274 was on WIC and /or food stamps (11.6% on WIC only; 14.9% on FS only and 11.2% on FS and WIC), while 20.5% received commodity foods, 18.3% ate at the senior center and 8.8% used Food Bank/ Navajo Way. A relatively higher proportion of the food insecure households were participating in either one or more of the food assistance programs (FS, WIC, commodity foods, food bank/ Navajo Way, use of senior center) compared to the food secure counterparts. Of the psychosocial factors only healthy eating self-efficacy

seemed to be significantly (p=0.03) lower in participants of FS and CF programs after controlling for age, sex, SES and other sociodemographic characteristics. Food knowledge scores were also lower in those eating at senior center/ food bank/ Navajo Way, but this was not significant (p=0.07 to 0.08). However, food label reading scores were higher in the CF participants (p=0.06). Healthy and unhealthy food getting frequency did not vary by participation in food assistance programs. However, cooking score was significantly lower in the FS participants (p=0.02). We continue to work on these analyses.

Results of preliminary analyses of post-intervention data by exposure: We looked at the change in psychosocial factors and outcomes of interest from baseline to post-intervention by the level of exposure (Table 2). Exposure to the intervention was calculated using the respondent's response to whether or not they had seen or participated in the various components of the intervention. Interventionist store visits and the exposure score itself were significantly different across some of the quartiles. A somewhat positive trend in change was seen in healthy eating intentions, self-efficacy, label reading and food knowledge scores as well as cooking score, although not significant. Healthy food getting frequency somehow showed a negative change. Change in unhealthy food getting frequency was highest in the low and medium exposure groups.

Table 2: Variables of interest by exposure to intervention, n=121

Exposure categories	**Very low (25%ile) (1)**	**Low (50%ile) (2)**	**Medium (75%ile) (3)**	**High (4)**	**overall p-value for ANOVA**	**p-value for pairwise comparison - Bonferroni (Dunn) t test (p=0.008)**
N	29	31	31	30		
EXPOSURE SCORES RANGE	**0 to 11**	**12 to 33**	**34 to 64**	**64 and above**		
New exposure score	4.86	21.19	51.48	81.13	<0.0001	all pairwise comparisons are significant
Interventionist store visits	3.97	6.35	11.00	11.80	<0.0001	1&3 and 1&4 are significant
Change in food knowledge score	-0.28	0.13	0.55	0.62	0.33	NS
Change in self-efficacy score	2.04	4.59	6.80	4.89	0.35	NS
Change in intentions score	0.11	0.79	3.58	1.17	0.06	NS
Change in label reading score	0.29	0.24	0.37	0.62	0.90	NS
Change in cooking score	0.66	0.78	1.44	1.97	0.39	NS
Change in healthy food getting score	-17.69	-11.55	4.48	-5.69	0.39	NS
Change in unhealthy food getting score	-8.23	-12.29	-13.10	-8.10	0.75	NS

We will complete our post-intervention data collection in the coming months, and anticipate that some of the marginal findings will achieve statistical significance. We then plan to complete the baseline and impact analyses, process evaluation data analyses and submit manuscripts for publication.