



HHS Public Access

Author manuscript

J Acad Nutr Diet. Author manuscript; available in PMC 2019 February 01.

Published in final edited form as:

J Acad Nutr Diet. 2018 February ; 118(2): 294–300. doi:10.1016/j.jand.2017.08.010.

Participant satisfaction with a food benefit program with restrictions and incentives

Sarah A Rydell, MPH [Project Coordinator],

Division of Epidemiology & Community Health, School of Public Health, University of Minnesota, 1300 South 2nd St, Suite 300, Minneapolis, MN 55454, 612-625-1017 (w), 612-624-0315 (f), rydel004@umn.edu

Rachael M Turner, BS [Staff],

Division of Epidemiology & Community Health, School of Public Health, University of Minnesota, 1300 South 2nd St, Suite 300, Minneapolis, MN 55454, 612-625-1843 (w), 612-624-0315 (f), turne348@gmail.com

Tessa Lasswell, BA [Research Assistant],

Division of Epidemiology & Community Health, School of Public Health, University of Minnesota, 1300 South 2nd St, Suite 300, Minneapolis, MN 55454, 612-625-1843 (w), 612-624-0315 (f), lassw006@umn.edu

Simone A French, PhD [Professor],

Division of Epidemiology & Community Health, School of Public Health, University of Minnesota, 1300 South 2nd St, Suite 300, Minneapolis, MN 55454, 612-626-8594 (w), 612-624-0315 (f), frenc001@umn.edu

J Michael Oakes, PhD [Professor],

Division of Epidemiology & Community Health, School of Public Health, University of Minnesota, 1300 South 2nd St, Suite 300, Minneapolis, MN 55454, 612-624-6855(w), 612-624-0315 (f), oakes007@umn.edu

Brian Elbel, PhD, MPH, and

Associate Professor; Chief – Section on Health Choice, Policy and Evaluation, Department of Population Health, School of Medicine and Wagner School of Public Service, New York University, 550 1st Avenue, New York, NY 10016, 212-263-4283, 646-501-2706. Brian.elbel@nyumc.org

Lisa J Harnack, DrPH, RD, MPH [Professor]

Division of Epidemiology & Community Health, School of Public Health, University of Minnesota, 1300 South 2nd St, Suite 300, Minneapolis, MN 55454, 612-626-9398(w), 612-624-0315 (f), harna001@umn.edu

Corresponding Author: Sarah Rydell, Division of Epidemiology & Community Health, School of Public Health, University of Minnesota, 1300 South 2nd St, Suite 300, Minneapolis, MN 55454, 612-625-1017.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

CONFLICTS OF INTEREST DISCLOSURE

The authors have no conflicts of interest to disclose.

Abstract

Background—Policy makers are considering changes to the Supplemental Nutrition Assistance Program (SNAP). Proposed changes include financially incentivizing the purchase of healthier foods and prohibiting the use of funds for purchasing foods high in added sugars. SNAP participant perspectives may be useful in understanding the consequences of these proposed changes.

Objective—To determine whether food restrictions and/or incentives are acceptable to food benefit program participants.

Design—Data were collected as part of an experimental trial in which lower income adults were randomized to one of four financial food benefit conditions: 1) Incentive: 30% financial incentive on eligible fruits and vegetables purchased using food benefits; 2) Restriction: not allowed to buy sugar sweetened beverages, sweet baked goods, or candies with food benefits; 3) Incentive plus Restriction; or 4) Control: no incentive/restriction. Participants completed closed- and open-ended questions about their perceptions of the 12-week program upon completion.

Participants/Setting—Adults eligible or nearly-eligible for SNAP were recruited between 2013–2015 through events/fliers in the Minneapolis/St Paul, MN metropolitan area. Of the 279 individuals completing baseline, 265 completed follow-up measures and are included in these analyses.

Statistical Analysis—Chi-square analyses were conducted to assess differences program satisfaction. Responses to open-ended questions were qualitatively analyzed using principles of content analysis.

Results—There were no statistically significant or meaningful differences between experimental groups in satisfaction with the program elements evaluated in the study. Most participants in all conditions found the food program helpful in buying nutritious foods (94.1%–98.5%) and in buying the kinds of foods wanted (85.9%–95.6%). Qualitative data suggested that most were supportive of restrictions, although a few were dissatisfied. Participants were uniformly supportive of incentives.

Conclusions—Findings suggest a food benefit program that includes incentives for purchasing fruits and vegetables and/or restrictions on the use of program funds for purchasing foods high in added sugars appear to be acceptable to most participants.

Keywords

SNAP; policy change; food stamp program; public opinion; food restrictions/incentives

INTRODUCTION

The Supplemental Nutrition Assistance Program (SNAP), formerly known as Food Stamps, is a federal program that provides low income families with funds for purchasing food. About 1 in 7 Americans participate in SNAP.¹ While SNAP is successful at reducing food insecurity,² SNAP participants tend to have poorer diet quality^{3,4} and higher rates of obesity in comparison to income eligible non-participants.^{5,6} Consequently, policy makers are

considering changes to SNAP to encourage participants to make more nutritious food purchase decisions. A variety of program changes have been proposed, including incentivizing the purchase of foods like fruits and vegetables and prohibiting the use of program funds for purchasing foods deemed less beneficial for overall health, such as sugar sweetened beverages.⁷⁻¹⁴

SNAP participant perspectives may be useful in understanding the potential consequences of program food purchase incentives and restrictions. Yet, to date the acceptability of these initiatives to SNAP participants has been largely hypothetical, assessed via survey, with one exception of one implementation study.^{15,16} In the USDA Healthy Incentives Pilot (HIP) study, SNAP participants received an incentive of 30 cents for every dollar of SNAP benefits that they spent on targeted fruits and vegetables in participating retailers. Study participants who received the incentive reported a high level of satisfaction with it.¹⁷ While this study provides some insight into the acceptability of incentives, more data is needed. Furthermore, no data exists on the perceptions of restrictions in a real-world setting.

The purpose of this study is to determine whether financial incentives for fruit and vegetable (F&V) purchases made with food benefit program funds and/or restrictions on the purchase of foods high in added sugars with food benefits were acceptable to study participants randomized to one of four food benefit programs that varied with respect to whether an incentive and/or restrictions were included in the program. In addition, analyses were carried out to evaluate whether levels of program satisfaction varied by experimental condition.

METHODS

Data were collected as part of a randomized trial in which lower income adults were randomized to one of four financial food benefit conditions for a 12-week period: 1) Incentive: 30% financial incentive on eligible F&V purchased using food benefits; 2) Restriction: not allowed to buy sugar sweetened beverages, sweet baked goods, or candies with food benefits; 3) Incentive plus Restriction; or 4) Control: no incentive or restriction. The financial incentive of 30% was adopted from the USDA Healthy Incentives Pilot.

Participants in all conditions were given a study-specific debit card where funds for the purchase of food were added every four weeks for a 12-week period. The amount placed on the card was the average benefit amount provided by SNAP to those with the same size household within Hennepin/Ramsey County in the Minneapolis/St. Paul metropolitan area. Table 1 provides food purchase rules for each condition. As part of the study measures, participants were asked to submit all household food receipts on a weekly basis. All receipts were reviewed against the transaction history provided by the debit card vendor to ensure receipt submission of all study card purchases; receipts were monitored for compliance to the study restrictions, if applicable, and any incentive earned by participants was calculated based upon the itemization detail (either by the store or via annotations made by the participant) of receipts submitted for purchases made with the study debit card.

Study Sample

Participants who were eligible or nearly-eligible for SNAP were recruited through in-person recruitment events at local food distributions and pantries, the posting of study fliers in community locations in lower-income neighborhoods, and referrals from organizations that serve lower-income households in the Minneapolis/St Paul, MN metropolitan area. Eligibility criteria included 1) not currently participating in SNAP nor planning to enroll during study participation; 2) household income <200% of the federal poverty level; and 3) household member primarily responsible for grocery shopping is able to read and speak in English. Additional criteria to determine SNAP eligibility (e.g. asset test, conviction history) were not applied. Participants were recruited in five waves, from July 2013 through January 2015.

No power calculation was conducted for the secondary data analysis of the participant satisfaction data presented below. The sample size for the main study was determined using a power calculation that would enable a detection of, at minimum, a 4.5% decrease in energy intake over time, one of the study primary outcomes. The initial target sample was 320 households, later revised to 280 households due to budget cuts. More information on the sample size computations can be found elsewhere.¹⁸

Measures

Participants completed both a baseline and follow-up study visit, both of which took place in private conference rooms at the University of Minnesota. At baseline, participants completed a questionnaire to assess demographics and household food security (US Household Food Security Survey Module: 6 Item Short Form¹⁹ modified to ask about past the 30 days). Additionally, participant anthropometrics including height (measured to the nearest 0.1 cm using a stadiometer) and weight (measured to the nearest 0.1 kg on a calibrated digital scale) were collected following standard protocols.²⁰ Body mass index was calculated as weight in kilograms divided by height in meters squared. Measures of program satisfaction and perceptions were collected at the end of the study as part of the final data collection visit via a series of self-administered closed and open-ended questions developed by the investigators and detailed below; household food security was again assessed at this final visit, too. The self-administered method of data collection was used in an effort to minimize social-desirability bias in reporting.

All participants were asked a set of closed-ended questions designed to assess satisfaction with various elements of the program, including how hard or easy it was to purchase foods using the card (via an anchored six-point scale: very easy, easy, somewhat easy, somewhat hard, hard, very hard); whether the program card instructions were clear (yes/no); how helpful the program was in buying enough food for the household; how helpful the program was in buying healthful/nutritious foods for the household; and how helpful the program was in buying the kinds of food desired. Questions regarding helpfulness were assessed using the following response options: *helpful*, *somewhat helpful*, and *not helpful*. In addition, participants were asked specific open-ended questions pertaining to the group to which they were randomized.

Those in the Restriction or Incentive plus Restriction conditions were asked, 1) *You were not allowed to buy some sugary foods such as soft drinks, candies, and cookies with your GAPS Visa card. What did you think of these restrictions?;* and 2) *Do you think not allowing some sugary foods to be purchased with your GAPS Visa card improved the nutritional quality of your diet or your family's diet? If so, how? If not, why not?.*

Those in the Incentive or Incentive plus Restriction conditions were asked, 1) *You were given a bonus for purchasing fruits and vegetables with your GAPS Visa card. What did you think of this bonus?;* 2) *Do you think providing a bonus for purchasing fruits and vegetables with your GAPS Visa card improved the nutritional quality of your diet or your family's diet? Yes – how? No – why not?;* and 3) *Did the bonus make you purchase more fruits and vegetables than you otherwise would have? Yes – how? No – why not?.*

Additional details regarding procedures of the main study can be found elsewhere.¹⁸ Procedures were approved by the University of Minnesota Institutional Review Board and written informed consent was obtained from all participants.

Statistical Analysis

Both quantitative and qualitative analyses were performed. Means and frequencies were calculated to describe the study sample. Chi-square tests were run to determine whether satisfaction with various elements of the program differed between experimental conditions. A p-value of less than 0.05 was considered statistically significant. These quantitative analyses were conducted in 2016 using SAS statistical software (version 9.3, 2011, SAS Institute, Cary, NC).

Responses to open-ended questions were qualitatively analyzed by two reviewers in 2015 using a directed thematic analysis approach.²¹ Open-ended data were entered into a FileMaker Pro database and given a cursory read to assist in the development of an initial coding scheme. Next, all open-ended data were given a thorough independent review by each reviewer whereby the coding scheme was refined and iteratively updated as any new themes emerged. All relevant concepts were coded as themes, regardless of how many participants mentioned them. For the general questions on what participants thought of the restrictions and/or incentive, summary codes of positive, negative, or neutral were developed. The coding scheme was maintained in a FileMaker Pro database and coding was done electronically by marking the relevant theme(s) discussed in each response (via a 'check all that apply' function). Any responses whereby the two reviewers did not agree to all theme(s) coded were flagged and reviewed in a team meeting until consensus between the two reviewers was reached. Particularly compelling quotes were also flagged in the database.

RESULTS

Between August 2013 and February 2015, 279 participants completed baseline measures and were randomized to one of the four experimental conditions; 265 completed follow-up measures and were included in the analyses reported herein. Participants were mostly female; overweight or obese as per BMI calculations; and living in a household with low or

very low food security (Table 2). Ten percent reported currently participating in the Women, Infant and Children (WIC) program; 37% reported using an emergency source of food in the last month; and about one-half reported participating in SNAP in the past.

Program Satisfaction

Nearly all participants in each of the four experimental conditions found the card easy to use (87.5%–95.6%), and found the food program helpful in purchasing nutritious foods (94.1%–98.5%) and the kinds of foods desired (85.9%–95.6) (Table 3). A majority of the participants (62.1%–77.9%) indicated that the program allowed their household to meet all of their grocery needs. There were no statistically significant or meaningful differences observed in any measured aspect of program satisfaction between experimental conditions.

Qualitative Perspectives on Restrictions

i. General reflections on restrictions—Of the 131 individuals in the Restriction or Incentive plus Restriction conditions who were asked what they thought about the program restrictions, 58% (n=76) endorsed restriction and about 37% (n=49) had a neutral reaction. The two primary reasons given in support of the restrictions focused on how they enabled participants to avoid unhealthy foods and/or served as a reminder to encourage healthy eating habits, e.g. *“[The restrictions] were good because I learned that I really didn’t need the sweets; in addition, this practice allowed me to reduce my sugary intake (male, incentive plus restriction group),”* while another said, *“It was hard because I love cookies but it forced me to make better food choices unless I wanted to pay for it myself (female, restriction group).”* Of the few (n=5) who were dissatisfied with the restrictions, most understood the rationale but wanted the ability to purchase the restricted items, e.g. *“Not good - felt too restricted. I have grandkids that come over and I like to keep little treats for them. I understand it, but I just didn’t agree with it (female, incentive plus restriction group).”*

ii. Impact of restrictions on dietary quality—When asked whether the restrictions had any impact on their diet, nearly all (96%) reported that they had. The primary types of changes related to making healthier food choices when shopping [e.g. *“Yes - it wasn’t an option to buy pop, cookies, etc. so we didn’t even bother going down those aisles. Instead we looked for sweet healthy alternatives like fruit for smoothies if a sweet treat was needed (female, incentive plus restriction group)”*] and decreasing intake of the restricted foods [e.g. *“I think it did a little bit. I usually eat a lot of pastries and cookies and drink a lot of soda. I have barely eaten any of that stuff over the course of this study and don’t really crave it now (male, restriction group)”*]. To a lesser extent, participants reported that the restrictions served to reduce purchase temptations, as *“they are temptations that you don’t need (male, incentive plus restriction group).”* Of those who felt the restrictions did not have any impact on their diet, most reported that they didn’t usually purchase those types of food or that they just used their own money to purchase the restricted foods.

Qualitative Perspectives on Incentives

i. General reflections on Incentives—Of the 135 individuals in the Incentive or Incentive plus Restriction conditions, nearly all (94%) felt positively about it and no one reported a negative perception of this aspect of the program. Participants reported that the

incentive served as a motivation to purchase more F&V and liked receiving additional food dollars. One participant “*thought it was a nice incentive! And those extra dollars helped a lot! Better than coupons (female, incentive plus restriction group).*” Participants also reported how the bonus impacted the types of produce items that were purchased, e.g. “*this was really good at getting me to feel comfortable at paying a little more for the fresh fruits and vegetables (female, incentive group).*”

ii. Impact of incentives on dietary quality—Most participants (84%) reported that the incentive for F&V improved the diet quality of the household. Many reported an increase in the consumption of F&V, summed up succinctly by one participant [e.g. “*We ate more fruits and vegetables (male, incentive plus restriction group)*”], while some others indicated they were eating healthier in general [e.g. “*So besides the fact that fruits and vegetables are good also I was able to get more money to buy more healthy foods (female, incentive plus restriction group)*”]. The small proportion who reported that the incentive did not affect their diet tended to report they already ate well.

Nearly 81% (n=109) of the participants reported that the incentive increased the quantity of F&V purchased. Again, the primary reason given was that the incentive was motivating, e.g. “*enjoyed wider variety of fruits + vegs. The bonus was a fraction of the actual cost but it motivated me to continue to buy + eat more nutritious food (male, incentive group).*” Affordability was the second most cited reason, e.g. “*when I looked at the price, I imagined it at 30% less (female, incentive group).*” Others mentioned that they were able to increase the diversity of their F&V intake, e.g. “*I could purchase a variety, not the basic carrots, onions, celery, or apples...the cheaper items (female, incentive plus restriction group)*” and “*We bought and ate more of them and tried new things (female, incentive group).*”

DISCUSSION

The present results show that lower-income people participating in a food benefit program did not differ in their level of program satisfaction based on whether the program included restrictions on the use of program funds for the purchase of foods high in added sugars or financial incentives for the purchase of fruits and vegetables. These results are consistent with findings from national surveys in which SNAP participants reported their opinions about offering incentives and imposing restrictions for purchasing certain foods with SNAP benefits.^{15,16} Leung et al found that over 90% of SNAP participants in a California sample endorsed the provision of incentives for the purchase of “fruits, vegetables, and other healthful foods,” while three-quarters endorsed a restriction on “sugary drinks.”¹⁶ Similarly, Long et al found that 86% of SNAP participants were supportive of incentives for the purchase of “fruits, vegetables, and other healthful foods,” while just over half endorsed a restriction on “sugary drinks.” Interestingly, nearly half of those initially opposed to the restriction would support it if paired with an incentive. By comparison, this study found no difference in support of restrictions by those in the *restriction only* versus the *incentive plus restriction* group.¹⁵

The results are also consistent with the USDA Healthy Incentives Pilot, in which enrolled SNAP participants were provided a 30% incentive for the purchase of F&V for a one-year

period. In that study, 95% of participants reported that they would like to continue to receive the incentive.¹⁷ Similar to the USDA Healthy Incentives Pilot, study participants were actually subject to incentives (and restrictions, in the case of this study), such that they could base their opinions on their actual experiences.

Study limitations include the representativeness of the sample as participants were not currently SNAP-enrolled (although 50% reported that they had been on SNAP before), and were sampled from a specific geographic area. In addition, participants may have felt the desire to evaluate the program positively due to social desirability, but we found no clear evidence of this. There were also some limitations to the survey instrument itself. The psychometric properties of questions asked to assess program satisfaction have not been determined. We were unable to differentiate the impact of the incentive on the purchases of fruits and vegetables individually (i.e. whether the incentive increased purchases of fruits, vegetables, or both) because of the way we asked questions about the incentive. Finally, the main study was powered to detect change in energy intake, not differences in levels of satisfaction by condition. It is possible that the sample size is too small to detect important differences between groups, though observed differences were modest. Strengths include the randomized study design, the real-life implementation of the program restrictions and/or incentives over the 12-week period, and a high retention rate for measurement.

One of the most important strengths of this study relates to the policy implications of this study. We found overwhelming support for financial incentives for fruit and vegetable purchases, and only a handful of participants were opposed to restricting the use of food benefit program funds for purchasing sugar sweetened beverages, sweet baked goods, and candies in an actual SNAP-like program. Satisfaction levels were similar between those in a program that included incentives and/or restrictions and those in a program without incentives or restrictions. Taken together, these findings suggest that SNAP program satisfaction may be unaffected by instituting restrictions on the use of program funds for the purchase of foods high in added sugar and/or offering an incentive for the purchase of fruits and vegetables. This information may be useful to policy makers in considering whether incentives or restrictions have the potential to influence satisfaction and participation in SNAP.

CONCLUSIONS

Findings suggest that a food benefit program that includes incentives for purchasing F&V and/or restrictions on the use of program funds for purchasing foods high in added sugars may be acceptable to most program participants. This information may be useful to policy makers as they consider how proposed changes to SNAP may affect use and satisfaction with the program.

Acknowledgments

FUNDING/SUPPORT DISCLOSURE

This research was completed with funding from the National Institutes of Diabetes and Digestive and Kidney Diseases at the Division of Epidemiology & Community Health, School of Public Health at the University of Minnesota.

References

1. USDA Food and Nutrition Service. [Accessed 04/20/17] SNAP Monthly Data 2017. <https://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap>
2. Mabli, J., Ohls, J., Dragoset, L., Castner, L., Santos, B. Measuring the Effect of Supplemental Nutrition Assistance Program (SNAP) Participation on Food Security. Prepared by Mathematica Policy Research for the U.S. Department of Agriculture, Food and Nutrition Service; Aug. 2013
3. Andreyeva T, Tripp AS, MB S. Dietary Quality of Americans by Supplemental Nutrition Assistance Program Participation Status: A Systematic Review. *Am J Prev Med.* 2015; 49(4):594–604. [PubMed: 26238602]
4. Leung C, Ding E, Catalano P, Villamor E, Rimm E, Willett W. Dietary intake and dietary quality of low-income adults in the Supplemental Nutrition Assistance Program. *Am J Clin Nutr.* 2012; 96(5): 977–988. [PubMed: 23034960]
5. Cole, N., Fox, M. Diet Quality of Americans by Food Stamp Participation Status: Data from the National Health and Nutrition Examination Survey, 1999–2004. Washington D.C.: USDA Food and Nutrition Service; 2008. FSP-08-NH
6. Leung C, Willett W, Ding E. Low-income Supplemental Nutrition Assistance Program participation is related to adiposity and metabolic risk factors. *Am J Clin Nutr.* 2012; 95:17–24. [PubMed: 22170370]
7. General Accounting Office. Food Stamp Program: Options for Delivering Financial Incentives to Participants for Targeted Foods. Washington, D.C.: 2008. GAO-08-415
8. Townsend M. Obesity in low-income communities: Prevalence, effects, a place to being. *J Amer Diet Assoc.* 2006; 106:34–37. [PubMed: 16390664]
9. Alston J, Mullally C, Sumner D, Townsend M, Vosti S. Likely effects on obesity from proposed changes to the US food stamp program. *Food Policy.* 2009; 34:176–184.
10. Guthrie J, Frazao E, Andrews M, Smallwood D. Improving food choices—can Food Stamps do more? *Amber Waves.* 2007; 5(2):22–28.
11. Shenkin J, Jacobson M. Using the food stamp program and other methods to promote healthy diets for low-income consumers. *Am J Pub Health.* 2010; 100(9):1562–1564. [PubMed: 20634439]
12. Barnhill A. Impact and ethics of excluding sweetened beverages from the SNAP program. *Am J Pub Health.* 2011; 101(11):2037–2043. [PubMed: 21566025]
13. Brownell K, Ludwig D. The Supplemental Nutrition Assistance Program, Soda, and USDA Policy. *JAMA.* 2011; 306(24):2670.
14. Sherwood, D. [Accessed 12/30/15] Main proposed ban on junk food purchases with food stamps. Reuters. 2015. <http://www.reuters.com/article/us-maine-welfare-food-junk-idUSKBN0TC2DX20151123#2ledxmoKUOm5IL07.97>
15. Long MW, Leung CW, Cheung LW, Blumenthal SJ, Willett WC. Public support for policies to improve the nutritional impact of the Supplemental Nutrition Assistance Program (SNAP). *Pub Hlth Nutr. Jan;* 2014 17(1):219–224.
16. Leung CW, Ryan-Ibarra S, Linares A, Induni M, Sugerman S, Long MW, Rimm EB, Willett WC. Support for Policies to Improve the Nutritional Impact of the Supplemental Nutrition Assistance Program in California. *Am J Pub Hlth.* Aug; 2015 105(8):1576–1580.
17. Bartlett, S., Kerman, J., Olsho, L., et al. Evaluation of the Healthy Incentives Pilot (HIP): Final Report. Prepared by Abt Associates for the U.S. Department of Agriculture, Food and Nutrition Service; Sep. 2014
18. Harnack L, Oakes JM, Elbel B, Beatty T, Rydell S, French S. Effects of Subsidies and Prohibitions on Nutrition in a Food Benefit Program: A Randomized Clinical Trial. *JAMA Intern Med.* 2016; 176(11):1610–1618. [PubMed: 27653735]
19. USDA Economic Research Service. [Accessed 7/13/17] U.S. Household Food Security Survey Module: Six-Item Short Form. 2012. <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/survey-tools.aspx>
20. Lohman, TG., Roche, AF., Martorell, R. Anthropometric Standardization Reference Manual. Champaign, IL: Human Kinetics Press; 1988.

21. Hsieh H-F, Shannon S. Three approaches to qualitative content analysis. *Qual Hlth Res.* 2005; 15(9):1277–1288.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Description of the four experimental conditions to which participants were randomized in a study of an experimental food benefit program with restrictions and incentives.

Table 1

Food Purchase Rules	Experimental Condition			
	Incentive	Restriction	Incentive plus Restriction	Control
Not allowed to purchase alcoholic beverages, restaurant foods, and dietary supplements with debit card (same exclusion criteria as SNAP)	x	x	x	x
Not allowed to purchase sugar sweetened beverages (water-based beverages with added sugar such as soft drinks, fruit drinks, energy drinks, and sports drinks), candy (all types), and prepared sweet baked goods (e.g. pies, cakes, cookies, donuts) with debit card		x	x	
30% incentive on eligible ^a fruits and vegetables; Incentive amount calculated weekly from food purchase receipts and added to debit card. Text/email sent notifying participant of amount added as incentive.	x		x	

^aFruits and vegetables not eligible for 30% incentive include fruit juices; fruits canned, frozen or dried with sugar/syrup, vegetables canned or frozen with a sauce; pickled vegetables; and white potatoes.

Table 2

Demographic characteristics of 265 participants taking part in an experimental food benefit program with restrictions and incentives, reported both in total and by the experimental conditions^a to which participants were randomized.

Characteristic	% (No.)				
	Total (n=265)	Incentive (n=68)	Restriction (n=64)	Incentive plus Restriction (n=67)	Control (n=66)
Age (years, SD)	44.5 (13.2)	42.2 (12.4)	44.5 (14.6)	46.3 (12.8)	44.9 (12.9)
Sex					
Male	19.3 (51)	19.1 (13)	18.8 (12)	19.4 (13)	19.7 (13)
Female	80.8 (214)	80.9 (55)	81.3 (52)	80.6 (54)	80.3 (53)
Ethnicity					
Hispanic/Latino	10.3 (27)	13.2 (9)	9.4 (6)	9.1 (6)	9.2 (6)
Not Hispanic/Latino	89.7 (236)	86.8 (59)	90.6 (58)	90.9 (60)	90.8 (59)
Race					
White	29.2 (77)	25.0 (17)	21.9 (14)	39.4 (26)	30.3 (20)
Black	52.7 (139)	55.9 (38)	59.4 (38)	45.5 (30)	50.0 (33)
Biracial	13.3(35)	13.2 (9)	10.9 (7)	10.6 (7)	18.2 (12)
Other	4.9 (13)	5.9 (4)	7.8 (5)	4.6 (3)	1.5 (1)
Marital Status					
Single, never married	45.3 (119)	51.5 (35)	53.1 (34)	43.1 (28)	33.3 (22)
Married or partnered	27.8 (73)	19.1 (13)	25.01 (16)	32.3 (21)	34.9 (23)
Separated/divorced/widowed	27.0 (71)	29.4 (20)	21.9 (14)	24.6 (16)	31.8 (21)
Household Size					
One person	24.2 (64)	22.1 (15)	23.4 (15)	31.3 (21)	19.7 (13)
Two people	22.3 (59)	16.2 (11)	26.6 (17)	22.4 (15)	24.2 (16)
Three people	22.6 (60)	25.0 (17)	15.6 (10)	17.9 (12)	31.8 (21)
Four people	14.0 (37)	17.7 (12)	14.1 (9)	13.4 (9)	10.6 (7)
Five or more	17.0 (45)	19.1 (13)	20.3 (13)	14.9 (10)	13.6 (9)

Characteristic	% (No.)				
	Total (n=265)	Incentive (n=68)	Restriction (n=64)	Incentive plus Restriction (n=67)	Control (n=66)
Education level					
High school graduate or less	28.0 (74)	26.5 (18)	35.9 (23)	25.8 (17)	24.2 (16)
Some college/assoc. degree	53.4 (141)	61.8 (42)	50.0 (32)	50.0 (33)	51.5 (34)
College graduate or higher	18.6 (49)	11.8 (8)	14.1 (9)	24.2 (16)	24.2 (16)
Food Security					
High or marginal	20.0 (53)	11.8 (8)	18.8 (12)	22.4 (15)	27.3 (18)
Low	34.0 (90)	44.1 (30)	34.4 (22)	29.9 (20)	27.3 (18)
Very Low	46.0 (122)	44.1 (30)	46.9 (30)	47.8 (32)	45.5 (30)
Body weight ^b					
Normal weight	18.5 (47)	17.7(12)	16.1 (10)	21.5 (14)	19.1 (12)
Overweight	24.1 (62)	20.6 (14)	29.0 (18)	26.2 (17)	20.7 (13)
Obese	57.1 (145)	61.8 (42)	54.8 (34)	52.3 (34)	60.3 (38)

^aA description of the four conditions is as follows: 1) Incentive: 30% financial incentive on eligible fruits and vegetables purchased using food benefits; 2) Restriction: not allowed to buy sugar sweetened beverages, sweet baked goods, or candies with food benefits; 3) Incentive plus Restriction; or 4) Control: no incentive/restriction.

^bbody mass index < 25 classified as normal weight; 25–29.9 classified as overweight; and ≥ 30 classified as obese

Level of satisfaction with various program elements by each of the four experimental conditions^a in a study of an experimental food benefit program with restrictions and incentives (n=265).

Table 3

	% (No.)				χ^2 p-value
	Incentive (n=68)	Restriction (n=64)	Incentive plus Restriction (n=67)	Control (n=66)	
Program debit card 'very easy' or 'easy' to use	95.6 (65)	87.5 (56)	95.5(64)	95.5(63)	0.16
Program 'helpful' in buying healthful/nutritious foods	94.1 (64)	96.9 (62)	92.5 (62)	98.5 (65)	0.35
Program 'helpful' in buying kinds of food wanted	95.6 (65)	85.9 (55)	94.0 (63)	95.5 (63)	0.25
Program allowed household to meet all grocery needs	77.9 (53)	71.9 (46)	71.6 (48)	62.1 (41)	0.41

^a A description of the four conditions is as follows: 1) Incentive: 30% financial incentive on eligible fruits and vegetables purchased using food benefits; 2) Restriction: not allowed to buy sugar sweetened beverages, sweet baked goods, or candies with food benefits; 3) Incentive plus Restriction; or 4) Control: no incentive/restriction.