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Can Food Stamp Policies Encourage Healthy Eating? An Experiment on Food Stamp Restrictions

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Introduction

The goal of the food stamp program seems to continue shifting from a goal of putting food on the table to dictating the healthfulness of what household leaders choose to feed their families due to increasing health concerns about overconsumption. Certain items like junk food (chips, candy and other sugary snacks) and soft drinks seem to be the target of restrictive policy suggestions, while others want to incentivize healthy eating habits by providing additional funds for fruit and vegetable purchases. Some point out that SNAP pays approximately \$2 billion each year for SNAP participants to purchase sugary drinks (Andreyeva et al. 2012; Shenkin and Jacobson 2010; Barnhill 2011). Andreyeva et al. (2012) suggest that “it would be a good time to reconsider the program priorities to align public funds with public health” (p. 411). Others have argued that SNAP benefits should further incentivize the consumption of fruits and vegetables through farmer’s markets with programs like the Double Value Coupon Program (Wholesome Wave 2012). In another recent study, sub-sample of SNAP-participating households were tested in a Healthy Incentives Pilot (HIP) program to test if a 30% incentive for purchases of fruit and vegetables would increase consumption, which they found it to increase by about 20% (Klerman, Bartlett, and Wilde 2014). Despite the significant increase in consumption of fruits and vegetables, this only brings the average up a quarter of the way to an average recommended in the USDA dietary guidelines, thus additional or another method entirely could be used to be more effective.

Could changes to SNAP significantly alter consumption patterns to meet dietary guidelines? There are some conceptual reasons to suggest that soda restrictions may not affect purchases for many SNAP participants. Going back as far as Southworth (1945), it has been recognized that inframarginal households, the 90% of households who spend more on food than the SNAP benefit, should, in theory, treat the additional SNAP funds as an unrestricted transfer of money. For inframarginal households, any change in food expenditures resulting from SNAP arises through an income effect so long as “the marginal propensity to spend out of food stamps is equal to the marginal propensity to spend out of cash” (Beatty and Tuttle 2012). That is, a cash transfer should have the same effect on an inframarginal household as a food stamp transfer of funds.¹ Similarly, so long as SNAP recipients spend more on groceries than their SNAP-benefits, restrictions on soda should have no effect

¹ Empirical research on the Southworth hypothesis is mixed, with some evidence in support (Moffitt 1989; Whitmore 2002) and some against (Senauer and Young 1986; Levedahl 1995; Breunig and Dasgupta 2005; Breunig and Dasgupta 2002). Empirical studies that fail to support the hypothesis tend to find that SNAP participants spend more of the benefit on food than would be predicted by an equivalent cash transfer.

since the budget can simply be reallocated between SNAP and non-SNAP dollars to achieve the same consumption bundle as before the restriction. Despite this conceptual reasoning, a soda restriction might serve as a signaling effect, or discourage consumption, in much the same way that authors have argued that SNAP benefits might increase food purchases beyond what might be expected from an income effect (Beatty and Tuttle 2012). The objective of this research is to construct a relatively simple economic environment in which some of these conjectures can be tested.

This paper addresses the healthfulness of dietary choices made by the poor, and a number of studies have offered conjectures for why poor households often make relatively unhealthy choices. Affordability of healthy options is one factor believed to contribute to overweight and obesity among the poor (Mullally et al. 2008; Eisenmann et al. 2011; Drewnowski and Specter 2004; Drewnowski and Darmon 2005; Drewnowski 2004), (also see evidence that argues against this premise when cost is measured on a per weight basis, e.g., Davis and Carlson (2012)). Others have pointed to accessibility, finding correlations between number of fast food restaurants and obesity (Cummins and Macintyre 2006; Li et al. 2009). Binkley (2010) argues that “poor food choice by low-income individuals is just one instance of a more general pattern” (p. 973), and suggests that lower income households tend to have a higher discount rate and thus place a lower value on the future health. Another study found SNAP participating households had lower diet quality than those who are eligible to participate and choose not to (Leung et al. 2012). Consistent with this observation, (Stewart, Blisard, and Jolliffe 2003) found that if the average low income household was given an additional income of \$1,000, they would not change their fruit and vegetable consumption significantly. However, food activist Michael Pollan pushes fruit and vegetable consumption nonetheless by recommending that, “Food-stamp debit cards should double in value whenever swiped at a farmers’ markets — all of which, by the way, need to be equipped with the Electronic Benefit Transfer card readers that supermarkets already have” (2008). Food movements advocated by figures like Pollan are constantly pushing for change in the food markets by government intervention, but the effects of such changes may not be fully understood. If increasing income via SNAP benefits does not encourage low income households to consume healthier foods and more restrictions results in fewer participants, changing unhealthy habits in this socioeconomic class may require a different method rather than additional restrictions.

Methods and Procedures

A framed field experiment was conducted, in which consumption choices were observed in five treatments.

Respondents made non-hypothetical choices for items to be consumed in a meal to be consumed on site. Menu items displayed in the front of the room varied in terms of price and healthfulness, but across all five menus, the price and menu items are the same. Participants can use their participation fee to purchase menu items (the entire show-up fee does not have to be spent) in addition to coupons or certificates that vary across treatments in a way to mimic the current SNAP program and potential policies that restrict its use. Table 1 lists the five different treatments used in the experiment.

Treatment	Participation fee	Certificate
1	\$10	None (control)
2	\$10	additional \$2 dollars added to show-up fee
3	\$10	\$2 certificate only good for menu items
4	\$10	\$2 certificate only good for menu items; certificate cannot be used to pay for soda
5	\$10	\$2 certificate only good for fruits/vegetables on menu

This means that each menu would have a different wallet or income level, basically. In treatment 2, they would have \$12 cash instead of just \$10 like in treatment 1. The change in choices from treatment 1 to 2 will indicate the income effect from a cash transfer. I would hypothesize that there would be an increase in food consumption with \$12 versus \$10 of ‘income,’ but by less than a \$2 increase, of course. This means that they would save a portion of the additional \$2 or spend it on other goods. In treatment 3, instead of cash, they will have what is effectively comparable to a \$2 coupon that can be used on any menu item. This is comparable to a transfer of funds that is designated for a certain use, like the SNAP funds. If they purchased their lunch, it made their total cost less, and the change due back to them higher in the end. But if they chose not to use the coupon (whether they buy lunch or not), they will have less money at the end. The change in treatment 1 to treatment 2 we hypothesize to also increase food consumption.

The Southworth Hypothesis can then be tested by comparing the difference in choices between treatments 1 to treatments 2 and treatment 1 to treatment 3. First, a participant will be defined as inframarginal if they spend more on food than \$2 in treatment 1, and extramarginal if they only spend \$2 or less on food purchases in treatment 1. For inframarginal consumers, the Southworth hypothesis holds if there is no difference between the change in the treatments for a participant. However, more recent studies have contradicted theory

and suggested that labeling the coupon for food spending only increases such spending more than a cash transfer (Wilde and Ranney 1996). If the average of food spending is higher with a coupon compared to cash, then food stamps does a better job of increasing food spending, which contradicts the Southworth Hypothesis and has been observed recently (Wilde, Troy, and Rogers 2009; Breunig and Dasgupta 2005). Our hypotheses would be that the Southworth Hypothesis will not hold or that more is spend on food with a coupon compared to a cash transfer. For those extramarginal consumers that only purchase as much as their coupon is worth, we should observe their entire food spending of \$2 or less from treatment 1 to be allotted to the coupon instead of their cash. If they did not buy anything in treatment 1, we would suspect participants to utilize the coupon value.

Treatment 4 is still a coupon, but it cannot be used to purchase any soft drink products. Comparing consumption of soft drinks from treatment 1 to treatment 3 and treatment 1 to treatment 4 would provide insight to the effectiveness of a soda restriction. Unless there is some negative influence by not being allowed to purchase soft drinks, such a restriction should not affect consumption with proper mental accounting skills. For instance, if purchasing an entrée, side and soft drink beverage, that coupon can purchase the entrée and soda be purchased with the participants own income. Thus, we hypothesize that there will not be a significant difference in soft drink consumption between the two treatments. There should also not be any difference in total food spending between the two groups either. Extramarginal consumers would only be affected if in treatment 1 they were purchasing a soft drink; in theory, they would be most affected by such a “policy change” and will likely change their consumption.

Finally, treatment 5 is also a coupon, but it further restricts what it can be used on – it can only purchase fruits or vegetables. Comparing outcomes in treatment 1 to treatment 3 to treatment 1 to treatment 5 will indicate the effects of restrictions on fruit and vegetable consumption. We hypothesize that this treatment will result in more fruit and vegetable consumption as well as overall food spending. Inframarginal and extramarginal consumers would have no change only in the event where they were purchasing two sides of fruit or vegetables in treatment 1 already. Otherwise, such a restriction would likely change the lunch items purchased for all individuals. Will participants change more than just their sides, i.e. will their entrée and drink choices change if they take this restriction as their sides being predetermined? For instance, if one was ordering pizza and coke in all the other menus, one might change their mind to something that would go better with two sides of fruit or

vegetables like a sandwich and water. Therefore, total calorie consumption could be lower despite the number of items increasing. In addition, there could also be an increase in the number of participants who choose not to use their coupon or do not use the full amount, which would correspond to a lower enrollment rate in the food stamp program. This could easily be correlated with the stated daily and lunch-specific levels of fruit and vegetable consumption. Those who have lower stated levels of consumption are hypothesized to be more likely to forego the coupon in this treatment.

Results

Recent statistics show that a non-trivial portion of SNAP benefits are used to purchase soda and high sugar fruit juice (Andreyeva et al. 2012). It has been suggested that these beverages be added to the restricted list; however, such suggestions ignore the fungibility of consumers' budgets. This paper aims to provide some insights into the potential effects of this policy proposal.

Data has been collected for 120 participants, and further results will be reported upon finalizing data entry.

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