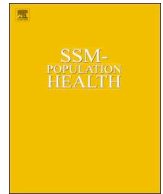




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## Article

# Food and financial coping strategies during the monthly Supplemental Nutrition Assistance Program cycle

Eliza Whiteman Kinsey<sup>a,\*</sup>, Megan Oberle<sup>b,c</sup>, Roxanne Dupuis<sup>d</sup>, Carolyn C. Cannuscio<sup>e</sup>, Amy Hillier<sup>f</sup>

<sup>a</sup> Department of Epidemiology, Columbia University Mailman School of Public Health, New York, NY, USA

<sup>b</sup> Division of Endocrinology and Diabetes, Department of Pediatrics, University of Minnesota Medical School, Minneapolis, MN, USA

<sup>c</sup> Leonard Davis Institute of Health Economics, University of Pennsylvania, Philadelphia, PA, USA

<sup>d</sup> Department of Social and Behavioral Sciences, Harvard T.H. Chan School of Public Health, Boston, MA, USA

<sup>e</sup> Department of Family Medicine and Community Health, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA

<sup>f</sup> School of Social Policy and Practice, University of Pennsylvania, Philadelphia, PA, USA

## A B S T R A C T

One in seven Americans participates in the Supplemental Nutrition Assistance Program (SNAP), making it the largest federally funded food assistance program. SNAP benefits are distributed once per month and both food spending and calorie consumption tend to decrease as time from benefit distribution increases. The monthly SNAP benefit cycle has serious implications for the health and financial stability of low-income families, a growing number of whom rely on SNAP as their sole source of income. Relatively little is known about the specific coping strategies households use to manage the SNAP cycle. The purpose of this study is to provide a critical exploration of the nature and timing of coping strategies for managing the SNAP cycle, including implications these coping mechanisms have for health and financial stability. This paper presents data from a prospective cohort study of mothers ( $n = 12$ ) receiving SNAP benefits in Philadelphia between 2016 and 2017. Both in-depth qualitative and survey methods were used. Participants reported on a variety of coping strategies they used to manage the SNAP cycle, including adjustments to shopping and eating patterns, mental accounting, emotional resilience, and social support. Instrumental social support was particularly vital in the final days of the benefit cycle, as were skipping meals and purchasing less expensive, energy-dense foods. Constant vigilance was required throughout the month to manage financial instability. The coping strategies for managing the SNAP cycle have short-term benefits, such as buffering against hunger and financial instability, however these survival strategies may have negative long-term repercussions for physical and financial health.

## 1. Introduction

From 1996 to 2011, the number of United States households in deep poverty – defined by those living on less than \$2 a day in cash income – grew by 130% (Edin & Shaefer, 2015). Financial inequality has been accompanied by a near doubling in family income instability since 1973, as measured by either short or long-term drops in income (Ziliak, Hardy, & Bollinger, 2011). Income instability can lead to household food insecurity, which affects 15.7% of U.S. households with children. Food security is defined by the U.S. Department of Agriculture (USDA) as “access by all people at all times to enough food for an active, healthy lifestyle”.

For a rising number of U.S. households, Supplemental Nutrition Assistance Program (SNAP) benefits are the sole source of income (Edin & Shaefer, 2015). SNAP is an income-eligible entitlement program intended to mitigate household food insecurity by providing supplemental income—earmarked for food purchases—to low-income families. One in seven U.S. residents participates in SNAP, making it by

far the largest federally funded food assistance program. Spending on SNAP in 2017 was roughly \$68 billion dollars—nearly 2% of the federal budget—and more than four times the funding designated for the cash welfare program, Temporary Assistance for Needy Families (TANF). SNAP's significant share of the U.S. social safety net is a critical reason to address the role federal food assistance programs play in smoothing income volatility and episodic food insecurity (Hacker & Jacobs, 2008).

SNAP benefits are distributed once per month, typically within the first two weeks of the month, depending on the state. This mode of administration has been debated. There is robust evidence demonstrating that both food spending and calorie consumption decrease as time from benefit distribution increases (Hamrick & Andrews, 2016; Hastings & Washington, 2010; Shapiro, 2005; Wilde & Ranney, 2000), in a pattern termed the “SNAP cycle”. National SNAP expenditure data have shown that not only do most families run out of SNAP benefits before their next distribution date, but on average, households are spending more than 75% of their benefits by the end of the second week after receiving them (Castner & Henke, 2011).

\* Corresponding author. Columbia University Mailman School of Public Health, 722 West 168th Street, New York, NY 10032, USA.

E-mail address: [edw2143@columbia.edu](mailto:edw2143@columbia.edu) (E.W. Kinsey).

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End-of-month calorie restriction is evident within the SNAP cycle, as is healthier food purchasing immediately following benefit disbursement (Todd, 2014; Wilde & Ranney, 2000). Other studies have shown diminished diet quality as time from benefit distribution increases, as well as a higher likelihood of skipping meals later in the benefit cycle (Hamrick & Andrews, 2016; Sanjeevi & Freeland-Graves, 2018; Whiteman, Chrisinger, & Hillier, 2018). Among children, increased time since last SNAP benefit distribution has been associated with poorer school performance (Gassman-Pines & Bellows, 2015). Among adults, food insecurity is associated with a number of long-term health outcomes, including increased risk of chronic disease, cognitive and functional impairments, and depression (Frith & Loprinzi, 2018; Heflin, Siefert, & Williams, 2005; Laraia, 2013). Additionally, income instability itself has been associated with poor health and behavioral outcomes including impacts on child cognitive development, lower adolescent engagement in school settings, and increased prevalence of risky behaviors among adolescents (Gennetian, Wolf, Hill, & Morris, 2015; Poonawalla, Kendzor, Owen, & Caughy, 2014; Sandstrom & Huerta, 2013).

To make ends meet, low-income families often work multiple low-paying jobs, rely on social networks for support, and seek resources from the charitable relief sector (Edin & Lein, 1997; Schenck-Fontaine, Gassman-Pines, & Hill, 2017; Seligman & Berkowitz, 2019; Stack, 1975). Specific buffers against food insecurity include relying on alternative food resources (e.g. food pantries, soup kitchens) and skipping or cutting the size of meals (Gorman, McCurdy, Kisler, & Metallinos-Katsaras, 2017; Wiig & Smith, 2009). Food insecure households have also reported purchasing a limited variety of foods, relying on low-cost options, cooking in bulk, sharing food, choosing stores based on sales, cutting coupons and making tradeoffs between buying food and other household expenses (Campbell & Desjardins, 1989; Hoisington, Shultz, & Butkus, 2002; Kempson, Keenan, Sadani, Ridlen, & Rosato, 2002; Wiig & Smith, 2009). While the SNAP cycle has been well documented in the economic literature (Wilde & Ranney, 2000; Shapiro, 2005; Hastings & Washington, 2010; Todd, 2014; Dorfman et al., 2018), to date, there has been less exploration about why households may be spending their benefits up front and limited understanding about the timing or quality of coping strategies households use during the month. The purpose of this study is to provide a critical exploration of the nature and timing of coping strategies for managing the SNAP cycle, including implications these coping mechanisms have for health and financial stability.

## 2. Methods

This paper presents data from a prospective, mixed-methods cohort study of mothers ( $n = 12$ ) receiving SNAP benefits in Philadelphia between 2016 and 2017. We recruited participants through word-of-mouth, with the assistance of several nonprofit agencies in Philadelphia, and in person at Children's Hospital of Philadelphia (CHOP) outpatient clinics. The study was approved by the University of Pennsylvania and CHOP Institutional Review Boards.

Participants were 1) African American female heads of household, 2) the primary food shopper for their household, 3) food insecure (defined by score  $\geq 3$  on the U.S. Household Food Security Module (Department of Agriculture, 2017)), 4) overweight or obese (BMI 25.0–34.9 kg/m<sup>2</sup>), and 5) pre-menopausal. Women were ineligible if they were pregnant, breastfeeding or receiving benefits through the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program. This sample was collected as part of a study of variation in appetite regulating hormones during the SNAP cycle. Because of previously documented differences in appetite regulating hormones by race, age, BMI and hormonal status, we restricted the study sample along these measures—thereby controlling for their effects (Azrad, Gower, Hunter, & Nagy, 2013; Klok, Jakobsdottir, & Drent, 2007). We screened 81 women, of whom 27 were eligible, 24

consented and 12 completed the full study. For all 12 participants who consented, but did not complete the full study, loss to follow-up occurred between screening and the first study visit.

Participation in the study lasted one month and included a screening assessment at recruitment, followed by three clinical visits—one within 2–5 days of receiving SNAP benefits, the second two weeks from SNAP disbursement and the third within the final three days before households received their next SNAP allotment. Screening included an eligibility questionnaire, the U.S. Household Food Security Module and clinical measurement of height and weight. Study visits involved anthropometric and appetite regulating hormone measurements, as well as multiple 24-h diet recalls (Ma et al., 2009), food shopping assessments through collection of household food shopping receipts (Chrisinger, DiSantis, Hillier, & Kumanyika, 2018), and survey questionnaires on household demographics and food shopping preferences, collected using REDCap, a secure online survey and data management tool (Harris et al., 2009). At the final study visit, one of the researchers conducted a semi-structured interview with each participant. Participant interviews covered SNAP cycle experiences and coping strategies and included questions about 1) what coping strategies participants used to get food when SNAP runs out, 2) tradeoffs between food and other expenses, and 3) participant experiences with the SNAP program. (See full interview guide in [supplemental materials](#).) The interviews were 30–60 min in length and were audio recorded and transcribed verbatim. Participants were compensated for their time in the form of a \$100 gift card at the end of the study period. Survey and interview data are presented in this paper; findings from other data collection measures are published elsewhere. (Oberle, Kinsey, Lipman, Cannuscio, Hillier, Stallings; Kinsey, Dupuis, Oberle, Cannuscio, & Hillier, 2019).

### 2.1. Analysis of interview transcripts and food shopping surveys

Survey data were analyzed for summary statistics using Stata version 14.2. For interview data, five members of the research team performed a close reading of a subset of transcripts to identify recurrent concepts, which were then condensed and clarified to create a final codebook of six primary codes. The interview transcripts were coded by two members of the research team using NVivo version 11, with 92.5% agreement. Consistent with the COREQ (Consolidated Criteria for Reporting Qualitative Research) guidelines for qualitative research, following coding of the transcripts the research team summarized the findings by code (Giacomini and Cook, 2000a, 2000b; Pope, Ziebland, & Mays, 2007; Pope & Mays, 1999). These summaries were used to guide discussion and iterative interpretation of the data to identify cross-cutting themes that integrated findings across codes.

## 3. Results

Table 1 describes participant characteristics. Mean age was 34.8 and participants had an average BMI of 32.8 kg/m<sup>2</sup>. The majority of participants were single and average household size was 3.8 people. Two thirds of participants reported very low household food security (compared to 39% of food insecure households nationally (U.S. Department of Agriculture, 2017)), meaning that at times during the past year, the eating patterns of one or more household members were disrupted and food consumption declined because they lacked money or other resources to get food (Department of Agriculture, 2017).

Participants reported, both through surveys and interviews, on a variety of coping strategies they used to manage the SNAP cycle. These strategies fell into three main categories: 1) adjustments to shopping and eating patterns, 2) mental accounting and resilience and 3) reliance on social networks for support.

**Table 1**  
Sample characteristics.

	Mean or (%)
Age	34.8
Household Size	3.8
Number of Children Under 5	0.5
Number of Children 5-17	1.8
Marital Status	
Married (%)	16.7
Single (%)	66.7
Divorced/Separated (%)	16.7
Employment	
Part-time (%)	50.0
Full-time (%)	16.7
Unemployed (%)	33.3
Education	
Less than high school (%)	8.3
High school degree (%)	33.3
Some college (%)	33.3
College degree (%)	25.0
Has a drivable motor vehicle (%)	58.3
Monthly Income <sup>a</sup> (\$)	1552.25
Monthly Expenses <sup>b</sup> (\$)	1229.71
Monthly SNAP Benefit (\$)	286.67
Receives welfare (TANF) (%)	16.7
Receives disability or retirement payments (%)	41.7
Child receives breakfast at school (no. days per week)	3.3
Child receives lunch at school (no. days per week)	3.8
Cooks/prepares meal from scratch (no. days per week)	4.2
Visited food pantry in last year (%)	33.3
Large/unusual expense in last month (%)	41.7
Household Food Security Status	
Low food security (%)	33.3
Very low food security (%)	66.7

<sup>a</sup> Self-reported monthly income from wages, tips, unemployment payments, disability payments, social security, retirement payments, cash welfare, child support (court mandated and informal), Subsidized Child Care Program, loans, gifts, and prizes.

<sup>b</sup> Self-reported monthly expenses from rent/mortgage, homeowners/renters insurance, electricity, heating fuels, transportation (car payments, gas, parking tickets, public transit), telephone, cable, internet, child care, adult care, health insurance, medical copays, uninsured medical bills, and student loans.

### 3.1. Adjustments to food shopping and eating

Participants shared numerous, deliberate food shopping and eating strategies for managing the end-of-month period. A key finding from our study is the different types of shopping trips participants made depending on the timing within the SNAP cycle. For example, the first shopping trip after receiving SNAP benefits was typically for stocking up on essential items, such as meats and proteins, fruits, vegetables and grains. For a number of participants, this first trip was the only big shopping trip in a month and often involved buying foods in bulk that could be frozen and stored for eating throughout the month. Several women reported splitting their SNAP between this first trip and another one roughly two weeks later. The subsequent shopping trips were often described as being fill-in or in-between trips to meat markets or corner stores, for items like sauces, condiments, snacks, lunch foods and treats for the children. Overall, participants articulated an approach of buying “needs” first and, if there were sufficient benefits leftover, then purchasing “wants”. On average, participants reported 4.6 shopping trips per month at their primary food store. Half of participants reported spending less than \$50 on a typical shopping trip (not including the first trip).

Techniques for stretching SNAP dollars throughout the month included cooking meals at home, menu planning, shopping from a grocery list, stocking up during sales, and using coupons and store circulars to select purchases. Participants chose where to shop largely based on prices and visited more than one store or alternate stores to take advantage of sales and promotions.

Cooking and eating techniques used explicitly in the final days of the benefit month included making creative meals based on what was left in the pantry or leaving out more expensive ingredients like meat. When food and SNAP ran out, participants frequently skipped meals or ate less in order to make sure their children could eat. These end-of-month adjustments, including skipping meals, were framed as ordinary or regular experiences, even when they resulted in physical side effects such as fatigue and light-headedness.

While participants expressed a desire to eat healthfully, price and quantity were the primary determinants of food choice. According to the survey, only 50% of participants reported trying to purchase healthy foods, which participants described as including fruits, vegetables, cereals, “foods from every food group”, and specialty foods for dietary restrictions (e.g. gluten- or nut-free alternatives). One participant reflected that with the high cost of healthy food, SNAP benefits were not sufficiently large to purchase foods for a healthful diet: “[...] sometimes you be wanting to eat healthy, but it's very – food is expensive. Period. But it's more expensive when you're trying to eat healthy. Healthy food is high. And you can't eat healthy off of \$169. So it's like you gotta get what you can so you can get enough of it. That's why I feel they should give out more stamps” (*Age 31; Household: 2 children, 2 adults*).

While participants expressed an overall dissatisfaction with their ability to afford healthy food options on a SNAP budget, purchasing inexpensive, less healthy items to “fill you up” was highlighted as an end-of month coping strategy. One woman explained, “The price is the main factor. Trying to get things that are not processed. I try to stay away from the sausages and things like that. But when it gets towards the end of the month and that's the cheapest thing to buy, then we end up buying the ramen noodles and the can goods and things like that” (*Age 39; 4 children, 2 adults in household*). Another woman, when describing her SNAP running out, explained, “[...] you're just gonna go to the corner store and get something that'll just fill you up really, really fast. It'll fill your belly” (*Age 36; 3 children, 1 adult in household*). The end-of-month period was marked by shifts towards the least expensive and often less healthy option, which included “dollar burgers”. There was a keen awareness among the women of the tradeoffs being made between having enough food—especially for their children—and having healthy foods.

While the majority of participants said they would like a more frequent benefit disbursement schedule (i.e. twice a month) to help with budgeting, several noted that even this would not fully address food insecurity at the end of the month: “I guess twice a month, but like I said, it still won't stretch. Even when you get your food stamps, you're not gonna be able to eat two to three meals a day. You're still going to have to eat one meal a day” (*Age 39; 4 children, 2 adults in household*). Several participants felt that having SNAP broken into smaller payments would change their shopping patterns, resulting in healthier food purchases. “[...] I really do believe that they should break the stamps down to bi-weekly for people [...] because realistically, you shop better that way” (*Age 39; 3 children, 1 adult in household*). Four participants said they either preferred receiving SNAP in one disbursement or that the benefit system was “fine” the way it is – either because additional payments would not make a difference, they liked making big shopping trips, or they preferred the freedom of getting all the money at once.

### 3.2. Mental accounting and resilience strategies

Many of the women (58.3%) reported creating a weekly or monthly food budget for their household. With the exception of two women who used an app called “EBT Fresh” to track their SNAP purchases, the budgeting described by participants did not involve a formalized mechanism for tracking income and expenditures. Instead, participants meticulously tabulated their expenses in their heads, using mental accounting. On more than one occasion, a participant recounted in precise detail the cost of every item from a shopping trip or the exact amount of

each utility bill from the prior month. Additionally, only a few women reported setting aside money when possible.

Given participants' limited income, restricting spending to only essential items through diligent self-control was the primary savings mechanism. One woman explained her strategy this way: "I try not to impulse shop. That's the main thing. Because if you do that, then you're definitely not gonna have anything left to feed everybody" (Age 39; 4 children, 2 adults in household). To budget meant to limit impulse purchases, cut luxuries and prioritize needs over wants. Living within the fixed income was a necessity and was sometimes referred to as "being on a budget." As another woman explained, "I can't spend something I don't have" (Age 39; 3 children, 1 adult in household). None of the women reported using credit cards or short-term loans, so their spending was truly limited to the cash resources they had on-hand.

This budgeting also resulted in weighing tradeoffs between different competing needs, such as paying for food, rent or gas. As one woman explained, "[...] they'll say you rob Peter to pay Paul and just like okay, I gotta take this from here and now – I make it work somehow, somehow. But I know my goal is to make sure that we have food and our head is covered" (Age 27; 1 child, 1 adult in household). Participants' top reported priorities were food, rent and household essentials like toilet paper, diapers and feminine products. One participant explained that the bills she pays first are for items that could be repossessed (e.g. car, house), while others said food was the most essential expense.

Other bills were often delayed in this tradeoff negotiation. Utility, cell phone and student loan bills were skipped or paid in the minimum amount necessary. Based on the average monthly self-reported income of \$1552 (Table 1), compared to consistent average monthly expenses of \$1230, participants had very little margin of error in their finances. With barely \$300 in "extra" income, participants' delayed bill-paying was an important technique to free-up money with which to buy food and other necessities, particularly at the end-of-month.

SNAP-specific budgeting was prevalent, with many women reporting they tried to spend only a portion of their benefits on the first shopping trip and save the remainder for either a second big trip or a series of smaller trips later in the month. Based on survey responses however, all participants went shopping for food within the first 3 days after receiving their SNAP benefits and 75% of spent between 50 and 100% of their benefits on that first trip, meaning there was little left-over for subsequent shopping trips. All participants reported running out of SNAP before the month ended, with 83.3% reporting this happened by the end of the second week. Around holidays, several women said they would try to set aside SNAP to cover the cost of special meals (e.g. Thanksgiving, Christmas), however it was unclear what this meant beyond mental calculating.

The mental budgeting and self-control participants demonstrated was accompanied by a determination to "make it work." This resolve seemed to be the guiding tenet by which many participants managed their financial instability. Sometimes this manifested as a self-mandate, as in the case of one mother who said she would not allow herself to feel discouraged: "I don't know how I do it, but I just do. I never say, never cry, never shed a tear. I just keep moving. Because crying ain't going to fix it" (Age 39; 3 children, 1 adult in household). In other cases, this resolve was a matter-of-fact acceptance, as in, "Because I make a way. I got two kids. I've got to. I make a way" (Age 35; 2 children, 1 adult in household). Participants noted, however, how challenging it was to maintain this constrained accounting within an inadequate financial context. Just as common as self-implicating statements about restraint and spending your money wisely, were comments such as, "the system don't give you enough," emphasizing the insufficiency of SNAP resources and a sense of injustice about the way the benefits are allotted.

Several women emphasized the impermanence of their present situation and spoke of the future as a source of motivation. As one participant said, "[...] right now, we're just going through a time and we're gonna get through it. It's gonna be good" (Age 29; 1 child, 2 adults in household). Not wanting to depend on others or on SNAP provided

inspiration for change: "I don't even wanna depend on SNAP. I don't think anyone should want to depend on it. You just need the benefits sometimes just to get through a process until you get to that point ..." (Age 36; 3 children, 1 adult in household). For this woman, SNAP provided the resources necessary to change her current circumstance. Participants' other sources of motivation included religious faith, children and family.

### 3.3. Social support strategies

Participants frequently highlighted the importance of social networks in mitigating food and financial insecurity. They referenced a range of assistance, reflecting instrumental, emotional and informational support (Heaney & Israel, 2008). Instrumental support is tangible assistance or services, such as the provision of money, food, or shelter to a person in need. Emotional support involves the giving of love, trust, empathy and care. Informational support is advice or information that can be used by a person for addressing challenges.

All participants spoke of their reliance on instrumental social support, which was most often money, either borrowed or gifted from family at the end of the month when SNAP ran out. As one participant explained, "After we pay all the bills, we probably have \$60 left and that's for whatever the kids need and gas. That's for the whole month. So, it's almost impossible without my dad helping or someone for us to eat the last couple weeks" (Age 39; 4 children, 2 adults in household). Sometimes family members brought participants to the store to buy food. One woman said her father put money into her bank account at the end of the month, despite being stressed about his own finances.

Several women described exchanging SNAP benefits with friends or family members: "I have extra stamps on my card. You want to use it? I'll say yeah, because most of the time I do need to use them" (Age 29; 2 children, 1 adult in household). Participants described sharing SNAP after running out of their own benefits and typically involved either going to the grocery store with a friend or family member who would purchase items for them or borrowing someone's Electronic Benefit Transfer (EBT) card and using it to buy food.

Participants also received instrumental support in the form of groceries and prepared meals from family late in the month. In inter-generational households, food sharing throughout the month was common. Friends played a critical role in providing food resources, as well. One mother described taking her children to McDonald's where her daughter's godmother worked so they could get free meals at the end of the month. Another had a friend who would regularly take her out to lunch and order extra food so that she could take leftovers home to her children. This informal food sharing extended beyond family and friends; several participants said they would trade food back and forth with a neighbor or coworker: "Thankfully, [...] my new neighbor, we kinda go back and forth. If she needs food at a certain time, I'll give it to her. If I need food, she'll give it to me" (Age 39; 4 children, 2 adults in household). Still others said they would eat meals at church after services on Sundays.

Instrumental support went beyond money for food. Participants described receiving help from family for paying unusual expenses, such as car repairs or medical bills. A number of participants also had informal financial arrangements, like a mechanic who would allow payments in installments or a loose rental agreement with a family member. Informal financial arrangements were not always viewed positively; one participant said that while she was supposed to receive money from her daughter's father, he often paid late and rarely provided enough. Still, most participants viewed the resources they received from their social network as essential to their survival.

Based on participants' descriptions, it was clear that instrumental support often played an emotional role and provided not just practical relief, but also psychological relief from the stresses of poverty and food insecurity. A number of participants described with gratitude the experience of spending holidays, such as Thanksgiving and Christmas

together with family – not just because food expenses were split, but also because of the care associated with sharing the planning, cooking and cleaning: “It’s a relief when you have family or even something at work ... a special occasion where you can kinda all get together and somebody else cooks for you. That’s beautiful ... I usually don’t like to reach out for it, but if it happens, it’s like a big load off your shoulders” (Age 36; 3 children, 1 adult in household). One participant lived with a cousin for an extended period of time when her home needed repairs and said of her cousin “she was like my husband,” when reflecting on the task-sharing that happened during that time. Another participant explained how she and her ex-husband continued to look out for each other by sharing responsibilities related to their children and making sure each adult had the time and resources they needed to pursue their individual goals, such as going to school or applying for a new job.

Informational support did not follow a cyclic pattern and mostly involved learning about resources through word-of-mouth. This included learning from friends, family or coworkers about stores having sales, the location and quality of food pantries and also financial programs such as grants for home repairs or school scholarships. When asked how she chose a food pantry, one participant responded, “Some people at work know different food pantries. So we’ll talk about it and we’ll figure out like [what are the good ones to go to]” (Age 29; 2 children, 1 adult in household). Informational support was also intentionally sought, such as by asking social service providers about opportunities for financial assistance.

A number of participants described having strong social support networks, which they attributed to “the way we was raised” and the “closeness” and “loyalty” of their family and friends. Participants also attributed the strength of their social networks to reciprocity and a shared experience of needing help: “We was always together, and [...] it wasn’t always me down, put it that way. I wasn’t always the one needed the help” (Age 35; 2 children, 1 adult in household). The help participants received from their friends and family was often returned in-kind and they viewed this system of sharing resources as essential to the quality and strength of their social networks.

While all participants talked about how critical these forms of social support were for managing the SNAP cycle, a number of women expressed feeling conflicted about asking for or receiving help. For some, there was a desire not to overburden or ask too much of other people with their own financial struggles: “I don’t have no resource other than my dad, but he retired, so I try not to put too much on him” (Age 39; 3 children, 1 adult in household). One participant said she prefers not to “bother people” as she recounted the gentle pushback she received from her brother when asking for a ride: “[...] my brother had told me before, my car don’t run on – my gas tank don’t run on love” (Age 39; 6 children, 2 adults in household). Another participant explained that she preferred not to tell other people about her financial struggles for fear that they would use this information as “ammo”. This woman felt it was better to keep the challenges of poverty to herself than to risk exposing her vulnerabilities by asking her social network for support.

#### 4. Discussion

This study, one of the first to use qualitative methods to explore the dynamic coping strategies of SNAP households throughout the monthly benefit cycle, documents and reinforces the reliance of low-income families on informal strategies to manage food and financial insecurity. The combined survey and qualitative data provide a rich exploration of changes in coping strategies throughout the monthly benefit cycle and offer new evidence of the potentially negative implications these coping strategies can have for health and wellbeing. In their recent review article, Seligman and Berkowitz (Seligman & Berkowitz, 2019) articulated the pathways through which food insecurity and poor health can each be a risk factor for the other. In a SNAP cycle-specific adaptation of their framework, we provide a diagram of the pathways demonstrated by our findings, connecting end-of-month insufficiency to poor

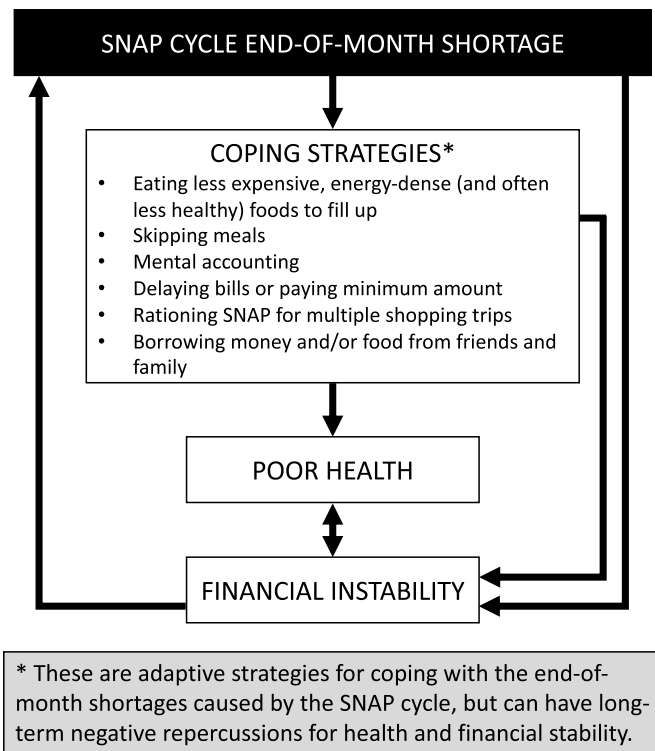


Fig. 1. Pathway connecting the SNAP cycle to poor health and financial instability (adapted from Seligman and Berkowitz (2019)).

health and financial instability (Fig. 1).

##### 4.1. Implications for health: SNAP cycle coping strategies may be maladaptive for health

While prior SNAP cycle literature has demonstrated that spending, calorie consumption, and diet quality decline over the monthly cycle (Hamrick & Andrews, 2016; Whiteman et al., 2018; Wilde & Ranney, 2000), less is understood about what drives these changes. Aligned with existing food insecurity literature, our research found households use a wide variety of strategies to stretch their SNAP dollars, including adjusting store choice based on sales, prioritizing proteins, and traveling farther distances to find acceptable food resources (Cannuscio et al., 2013, 2014; Wiig & Smith, 2009). However, a key finding from our study was the change to food purchasing and consumption that occurred in the final days of the benefit cycle, when participants prioritized calories over healthfulness and also frequently skipped meals. These purchasing and consumption decisions were adaptive survival responses to having insufficient food and financial resources, highlighting that while SNAP cycle coping strategies may provide a buffer against hunger, they do not optimize nutrition. Within a resource constrained environment, where tradeoffs are a necessary requirement for survival, health may be deprioritized.

Several prior studies on the SNAP cycle have posited that increasing SNAP benefit distribution to a semi-monthly issuance schedule could help smooth the cycle of spending and food consumption (Hamrick & Andrews, 2016; Shapiro, 2005; Todd, 2014; Wilde & Ranney, 2000). However diet quality has been shown to be low throughout the SNAP cycle (Whiteman et al., 2018), suggesting that while more frequent disbursement may smooth purchasing, it would be unlikely to significantly improve diet quality unless also accompanied by an increase in the benefit size. Given the higher cost of nutrient-dense, healthier foods (e.g. fruits, vegetables and whole grains) compared to energy-dense foods that contain refined grains, added sugars and added fats, SNAP benefit levels may simply not be adequate to facilitate the regular

purchase and consumption of nutritious foods throughout the month (Darmon & Drewnowski, 2015; Drewnowski, 2004; Rao, Afshin, Singh, & Mozaffarian, 2013).

Other mechanisms that support health and improve food insecurity could potentially be effective means to buffer against the SNAP cycle. These include incentive programs to subsidize the purchase of healthy foods, which have been shown in several experiments, including a pilot study with SNAP recipients, to significantly increase fruit and vegetable consumption (Bartlett et al., 2014; Harnack et al., 2016). Another possible intervention is implementing nutritional guidelines for charitable food programs, which are a frequently used by households later in the month when SNAP has run out. Increasingly food banks and food pantries around the country have begun following nutritional standards (Martin, Wolff, Callahan, & Schwartz, 2018), and early evidence suggests these changes are effective in improving healthy food consumption (Martin, Wu, Wolff, Colantonio, & Grady, 2013). Sustainable sources of funding, however, are significant barriers to both of these possible interventions.

#### 4.2. Implications for SNAP policy: cognitive load

Among the most striking coping strategies to emerge from the interviews was a self-imposed budgeting that largely involved avoiding impulse shopping. The self-control necessary for this form of financial management was palpable. Participants reiterated the need to refrain from purchasing “wants” and focus solely on essential items such as food, rent, utilities and school supplies, but also expressed the difficulty of such restrained budgeting within a context of financial insufficiency.

Financial scarcity imposes numerous burdens on cognitive load, which is the total amount of mental effort being used in the brain's working memory (Deck & Jahedi, 2015). People living in poverty are required to make tradeoffs and juggle many competing demands without the financial cushion held by higher-income individuals, however the brain can only manage a finite number of competing distractions (Mani, Mullainathan, Shafir, & Zhao, 2013). Core mental abilities, such as attention span, cognitive function and executive control, are all compromised when our brains are overloaded (Mani et al., 2013). As Mullainathan and Shafir explain, “scarcity directly reduces bandwidth - not a person's inherent capacity, but how much of that capacity is currently available for use.” (Mullainathan & Shafir, 2013) The constant focus needed to manage poverty consumes mental resources that can in turn affect attention and short-term memory. This can result in decision-making that is both rational and hyper-focused on immediate needs—paying an overdue bill, getting food for dinner—and puts less attention towards the future, which can result in larger financial challenges in the long-term, such as bank fees or negative credit scores (Gennetian & Shafir, 2015; Mullainathan & Shafir, 2013; Shafir, 2017). In the context of food decision-making, additional burdens on cognitive load have been shown to lead to less healthy food choices (Shiv & Fedorikhin, 1999), particularly when combined with unhealthy food advertising (Zimmerman & Shimoga, 2014), which occurs disproportionately in low-income neighborhoods (Powell, Wada, & Kumanyika, 2014).

For SNAP households that are struggling to make ends meet, the constant rationing of benefits is a high-effort activity aimed at avoiding end-of-month food insufficiency. But the vigilant rationing required to stretch SNAP benefits over the monthly benefit cycle is a key example of the cognitive burden imposed by monthly volatility in resources. In articulating the advantages participants in our study saw in receiving multiple smaller SNAP payments throughout the month, they alluded to the challenge of rationing SNAP within a context of reduced bandwidth and suggested that having some of that rationing done for them (via multiple, smaller benefit payments) would provide relief on cognitive load.

Here, more frequent SNAP distribution may be a helpful mechanism through which to reduce tax on bandwidth. There are several barriers to

such a wide-scale policy change, not the least of which is the political will necessary to make a significant adjustment to the program. However, SNAP benefits are already distributed electronically onto EBT cards, thus while there would be an initial administrative cost for switching to a twice-monthly system, the overall costs associated with such a change are unlikely to be substantial in the long-term. A pilot or state-level policy change would be necessary to accurately assess the impact of changing the benefit distribution schedule. Ultimately, the best solution for SNAP households may be to provide an option for semi-monthly disbursement, rather than making it mandatory. Having an option for a different distribution schedule would provide SNAP participants with the greatest agency in determining how best to budget and distribute their resources.

Bureaucratic hurdles required for enrollment and recertification in SNAP and other social benefit programs should also be minimized to reduce the cognitive burdens faced by enrollees. U.S. social welfare programs, including SNAP, are difficult systems to navigate and require time, vigilance and attention to detail (Aizer, 2007; Magasi, 2012). As Mullainathan and Shafir argue (Mullainathan & Shafir, 2013), social welfare programs should be designed to be “fault tolerant”, thereby minimizing the chance that depleted bandwidth will result in things like missed deadlines or forgotten forms. As an example of this type of program design, New Jersey recently discovered that an error-prone recertification process was causing some SNAP recipients to mistakenly lose eligibility and stop receiving benefits (Center on Budget and Policy Priorities, 2018). To reduce this reporting problem, the state simplified the forms and automated some of the reporting so that households with no change in circumstances could be recertified without caseworker intervention. In contrast, current federal SNAP policy discussions aimed at reducing SNAP rolls by adding burdensome eligibility and recertification checks will only add to the stress and mental burden of low-income families, and may ultimately lead to poor long-term health and financial outcomes.

#### 4.3. Implications for financial stability: timing and reciprocity

Reliance on social networks was a key SNAP cycle coping strategy articulated in our study, particularly in the final days and weeks of the benefit month. As these supportive behaviors have typically been outlined in the literature, the women in our study received instrumental, emotional and informational support from their friends and family. Building on past studies demonstrating reliance on instrumental support for poverty (Edin & Lein, 1997; Mazelis, 2017; Stack, 1975) and food insecurity (King, 2017; Schenck-Fontaine et al., 2017) management, our study highlights the temporal nature of these support mechanisms. Edin et al.'s USDA study of SNAP recipients found that households with higher food security relied significantly on family networks as a coping strategy, receiving food and money, as well as informational and emotional support (Department of Agricu, 2013). In fact, social support, social capital and social cohesion have all been shown to reduce the risk of food insecurity (Dean & Sharkey, 2011; Interlenghi & Salles-Costa, 2015; King, 2017). Social support is key to sustained economic stability (Harding, Wyse, Dobson, & Morenoff, 2014) and exchange with social networks can also provide a buffer against depression and mental illness, which are associated with higher rates of food insecurity (Kollannoor-Samuel et al., 2011; Martin, Maddocks, Chen, Gilman, & Colman, 2016). Our findings align with one of the only studies to explore social support during the SNAP cycle (Schenck-Fontaine et al., 2017)—which found that SNAP households were more likely to borrow money in the third week after receiving their benefits—and provide new insight about the temporal patterns of social support during the monthly benefit cycle.

Another key theme from our interviews was the reciprocity intrinsic to many of these social support systems. These findings parallel prior poverty literature (Mazelis, 2015; Stack, 1975), showing that while social networks are an essential form of support for low-income

families, and often build the social capital necessary for survival, some find the social norms of reciprocity within these networks burdensome. In this respect, while social support within our sample buffered households against the financial and food insecurity of the SNAP cycle, the shared responsibility and reciprocity of social support systems within resource constrained communities may also be perpetuating financial instability. The takeaway from these findings, however, is not to seek interventions that strengthen social support, which do not address poverty as the root of the problem, but instead to focus on policies that directly target poverty alleviation. Among the many interventions that can advance these findings is protecting SNAP from continued budget cuts, as the program serves a critical role in both income maintenance and food insecurity reduction.

#### 4.4. Limitations

This study has several limitations. First, the sample size was small and relatively homogenous (i.e. all African American women in Philadelphia), which limits generalizability to the broader SNAP population in Philadelphia or nationally (where 25% of SNAP participants are African American (Cronquist & Lauffer, 2019)). Additionally, the survey of income and food shopping behaviors was self-reported and responses may have been subject to social desirability bias. Lastly, because of the eligibility requirements for the broader study, which restricted mothers who were pregnant, one-year post-partum or receiving WIC from participating, it was not possible to evaluate SNAP cycle coping strategies within households with very young children. Future research should explore how these coping strategies differ in quality or timing within other populations (e.g. elderly, single adults, households receiving WIC).

#### 5. Conclusion

The coping strategies households use for managing the SNAP cycle have short-term benefits, such as buffering against hunger. However, these coping strategies include making tradeoffs that often compromise health and may have long-term negative financial repercussions. This research demonstrates the critical importance of a strong social safety net, particularly one that smooths the monthly volatility of SNAP benefits, to ensure that low-income households and communities are not struggling to fill in the gaps.

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The research presented in this article was approved by the University of Pennsylvania and Children's Hospital of Philadelphia Institutional Review Boards.

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#### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssmph.2019.100393>.

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