The Timing of SNAP Benefit Receipt and School Disciplinary Incidents

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Abstract

The largest food assistance program in the U.S. and an important part of the U.S. safety net, the Supplemental Nutrition Assistance Program (SNAP) provides cash-like benefits to low-income individuals and families to use only for purchasing food. Understanding how SNAP benefit receipt affects children and families is crucial to both research and policy efforts aimed at supporting the healthy development of low-income children. This paper links the timing of SNAP benefit transfer to school disciplinary incidents in North Carolina (NC). Using administrative data from the NC Departments of Public Instruction and Health and Human Services, we analyze the recency of SNAP benefit transfer and children’s disciplinary incidents for 395,710 SNAP-receiving public school students. Preliminary results indicate an increase in student disciplinary incidents as the SNAP benefit month progresses.
The Timing of SNAP Benefit Receipt and School Disciplinary Incidents

The largest food assistance program in the U.S. and an important part of the U.S. safety net, the Supplemental Nutrition Assistance Program (SNAP) provides cash-like benefits to low-income individuals and families to use only for purchasing food. Benefits are transferred to recipients once a month. In Fiscal Year 2012 (FY2012), an average of 42.1 million individuals received $5.7 billion in benefits each month (Eslami, 2015). Of those individuals receiving SNAP in FY2012, an estimated 12.6 million (30%) were school-aged children. Understanding how SNAP benefit receipt affects children and families is crucial to both research and policy efforts aimed at supporting the healthy development of low-income children.

SNAP constitutes a large percentage of many recipients’ budgets, and conservative estimates suggest that SNAP lifts about 2.1 million children out of poverty annually (Hoynes & Schanzenbach, 2014). Although SNAP provides an important support for low-income families, there is growing evidence that its benefit levels are insufficient for many, leading to different food and nutrition-related outcomes depending on the amount of time within a month that has passed since SNAP benefit transfer. SNAP recipients’ food shopping and food and caloric intake vary throughout the month, with recipients spending more money and consuming more and healthier food right after benefit transfer, compared to at the end of the benefit month (Castner & Henke, 2011; Hastings & Washington, 2011; Wilde & Ranney, 2000).

In this paper, we build on this literature by broadening the outcome of interest to children’s disciplinary incidents in school settings. The variation in food spending and consumption throughout the SNAP benefit month suggests that SNAP-recipient families also likely experience variability in other important outcomes, such as stress and family interactions, which in turn affect children’s behavioral outcomes. Using a matched administrative dataset
from North Carolina with 395,710 SNAP-receiving public school students, we examine the impacts of the SNAP benefit cycle, or the amount of time elapsed since SNAP benefit transfer, on one measure of children’s externalizing behaviors: disciplinary incidents. We hypothesize that the likelihood of a disciplinary incident will increase over the SNAP benefit month, with students at the end of their families’ benefit months more likely to experience a disciplinary incident than students at the beginning of their families’ benefit months.

Background

Most prior research on food stamps or SNAP has focused on the effects of benefit receipt for families’ economic well-being, as well as individuals’ physical health. Although some early studies found that SNAP receipt was associated with negative dietary and health outcomes, these studies relied on comparisons between participants and non-participants and were therefore limited by fundamental differences between these two groups, as SNAP recipients tend to be more disadvantaged than eligible non-recipients (Bitler, 2014). More recent research, taking advantage of variation in timing of implementation at the county-level as a natural experiment, has found that the introduction of the food stamp program improved families’ economic well-being as well as individuals’ physical health (Hoynes & Schanzenbach, 2009). Specifically, the initiation of SNAP in the 1960s decreased low birth weight infants, infant mortality, and serious physical health problems (Almond, Hoynes, & Schanzenbach, 2011). Other recent research on SNAP, relying on the variation in eligibility for immigrants from 1996 to 2003, finds similar positive effects of the program; losing one year of parent eligibility in early childhood is associated with an increase of $90 per child in later health costs (East, 2015). Despite this recent increase in the number of well-designed studies examining outcomes associated with SNAP participation, little research has examined how SNAP impacts other aspects of family well-being.
or examined SNAP’s impacts on children’s outcomes in domains other than physical health (Gassman-Pines & Hill, 2013).

In addition to the general effect of SNAP benefit receipt on families, specific elements of SNAP program design, such as amount of benefit and mode of distribution, may also impact family outcomes. Throughout the U. S., nearly all SNAP recipients receive benefits once a month through electronic benefits transfer (Hoynes & Schanzenbach, 2014). SNAP recipients often exhaust their benefits before the month has ended; in 2009, 95 percent of households with children used at least half of their benefit within the first two weeks after transfer, and 46 percent of households with children used over 90 percent of their benefits within the first two weeks after transfer (Castner & Henke, 2011). Therefore, towards the end of the month, recipients spend less on food (Hastings & Washington, 2010). These patterns can be explained partially by families’ shopping habits: many SNAP-recipient families make one large shopping trip at the beginning of their SNAP month (Wilde & Ranney, 2000; Wiig & Smith, 2009; Damon, King, & Leibtag, 2013). Such shopping trips can be costly in terms of both time and transportation; therefore, spending the majority of benefits quickly after transfer in a large shopping trip is one strategy to maximize benefits and reduce shopping-related costs.

However, for many SNAP recipients, benefits appear to be insufficient to sustain families’ food budgets. Recently, researchers have focused on the implications of the SNAP benefit cycle, particularly on how the recency of SNAP benefit transfer is related not only to families’ spending of SNAP benefits but also families’ nutrition and caloric intake. SNAP recipients take in fewer calories at the end of the month, compared to the beginning of the month (Shapiro, 2005; Todd, 2015). Although one study found little evidence that SNAP recipients’ diet varies over the month (Hastings & Washington, 2010), others have found that SNAP
recipients consume less milk and meat products towards the end of the month (Todd, 2015). This relationship may not be linear: in both the early and late stages of the SNAP benefit cycle, recipients appear to consume higher levels of calories, fat, and protein as opposed to fruit, vegetables, and whole grains (Kharmats et al., 2014). SNAP recipients themselves report buying and eating differently throughout the month. At the beginning of the month, they describe buying and consuming a larger variety of foods, particularly meat and produce; at the end of the month, they report eating more prepackaged foods and cheap carbohydrates (Darko, Eggett, & Richards, 2013; Seefeldt & Castelli, 2009).

Because of the significant instability in SNAP recipients’ nutrition and dietary choices throughout the month, researchers have begun asking whether families also experience within-month variability in other important outcomes. New research suggests that this variability may have important health effects: in the last week of the SNAP benefit month, risk for hospital admission due to hypoglycemia increases by 27 percent amongst the low-income population, with no similar increase among the high-income population (Seligman et al., 2014). Few studies, however, have examined how this variability may impact the outcomes of children in SNAP-recipient families, despite prior research suggesting that both changes in nutrition and variation in levels of stress and family functioning influence child outcomes.

We hypothesize that the SNAP benefit cycle affects children’s behavioral outcomes through varying levels of family stress, especially as it relates to worry over food acquisition or sufficiency. A large body of literature has linked economic strain to increases in family stress (Elder & Caspi, 1988; Conger et al., 2002; Gershoff et al., 2007). Prior research has also shown that families’ economic well-being and material hardship are related to children’s behavioral and cognitive outcomes through family stress and functioning (Gershoff, Aber, Raver, & Lennon,
To our knowledge, no studies have directly examined variation in stress or family interactions over the SNAP benefit month, which may link family’s nutrition and dietary choices with outcomes for children. Parental stress over limited resources may be transmitted to children through poorer interactions. Family interactions may also be worsened if parents are unable to provide children with foods they enjoy toward the end of the month. Alternatively, many children are highly aware of food cost and may associate cheaper foods at the end of the month with decreased resources (Ludvigsen & Scott, 2009).

Variation in levels of family stress may impact children’s behavioral well-being, as research has linked family stress from economic strain to problems with children’s externalizing behaviors, such as aggression, delinquency, and hyperactivity (Conger et al., 2002; Yeung, Linver, & Brooks-Gunn, 2002; Conger & Donnellan, 2007). Children’s externalizing behaviors, in turn, are correlated with office referrals for disciplinary incidents within schools (McIntosh et al., 2008). One previous study suggests that economic strain at the end of the SNAP benefit cycle has expected negative implications for students’ behavioral outcomes. Examining grade 5-8 students in Chicago Public Schools, Gennetian et al. (2015) find that disciplinary infractions for SNAP-recipient students increase by 48 percent from the first to the last week of the month. In contrast, disciplinary infractions for students who do not receive SNAP increase by only 39 percent.

Our study improves on Gennetian et al. (2015) through a unique feature of SNAP assignment in North Carolina: while Illinois distributes SNAP at the beginning of the month on a single day, North Carolina randomly assigns SNAP distribution based on the last digit of the head of household’s Social Security Number (SSN) over a 19-day period. Therefore, timing of benefit transfer within the month varies randomly at the household level. We are able to isolate
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recency of SNAP receipt from other confounding variables. For example, parents of children receiving SNAP may be more likely to be paid monthly, on the first, than the parents of children not receiving SNAP, which could exacerbate the effects of the SNAP benefit cycle. Our prior work, on children’s academic achievement, suggests that, when isolated, effects of the SNAP benefit cycle on educational outcomes are small but significant. Using the same unique property of SNAP assignment in North Carolina, we find that SNAP-recipient students score approximately 2 percent of a standard deviation higher on End-of-Grade tests in the third week of the month, as compared with the beginning and end of the month (Gassman-Pines & Bellows, 2015).

Method

Data

Our study draws on a unique dataset constructed from multiple administrative data sources in North Carolina. First, test score and student demographic data are from the North Carolina Education Research Data Center (NCERDC). NCERDC maintains all of the administrative records on North Carolina public school students that are collected by the state Department of Public Instruction and makes them available to researchers. We utilize disciplinary data from the 2011-2012 academic year, which includes the date, type, and consequence of each disciplinary incident. North Carolina Public Schools are required to report certain types of disciplinary incidents, known as “legally reportable offenses,” as well as any incident that results in a serious consequence, including out-of-school suspension and expulsion. We match North Carolina disciplinary data with attendance data, which includes records for every student enrolled in a North Carolina public school, as well as students’ race/ethnicity, sex, grade level, and school.
Data on children receiving SNAP in April, May, and/or June of 2012 were obtained from the Division of Social Services in the North Carolina Department of Health and Human Services. The SNAP data include recipient children’s names, birth dates, and addresses, as well as benefit amounts and date of benefit transfer.

To match children across the two data sources, we used DataMatchEnterprise, a commercial matching software that uses a fuzzy logic algorithm to match names from different sources and that can account for typos and misspellings (e.g., it can match “Karen” to “Caren” and “Smithh” to “Smith”). In our matching process, we matched on children’s first and last names, birth dates and county of residence, requiring exact matches for date of birth and county and using a less stringent cutoff for first and last names. Using these procedures, we were able to match approximately 83 percent of children ages 5 to 18 with NCERDC data for a total of 435,502 students. Our match rate is substantially higher, at 87 percent, for children ages 5 to 16, who more likely to be enrolled in public schools. Nationally, about 4 percent of families earning under $20,000 annually with K-12 students send their children to private school, which may account for a small percentage of the families we were unable to match (U.S. Census Bureau, 2013).

For our primary dependent variable of interest, hazard of first disciplinary incident, we use two specifications: in the first, we include the first disciplinary incident of the 2012 spring semester resulting in any consequence. Although the North Carolina Department of Public Instruction requires only the reporting of certain offenses and more serious consequences, schools often voluntarily report other disciplinary incidents, including incidents resulting in in-school suspensions, bus suspensions, or even time outs. Therefore, for a second specification, we include only the first disciplinary incident of the 2012 spring semester resulting in a serious
consequence, defined as an out-of-school suspension, expulsion, corporal punishment, or placement in an alternative learning program. Although some consequences (particularly in-school suspensions) are frequently reported, our second specification should help account for any bias from differential voluntary reporting of disciplinary incidents across school districts.

To create our primary independent variable of interest, number of days elapsed since SNAP benefit transfer, we first construct likely SNAP transfer dates for December 2011 – March 2012 using the modal transfer date in April, May, and June of 2012. We next subtract SNAP transfer date from each day of the spring semester (January 1, 2012 – June 30, 2012) to construct number of days elapsed since SNAP benefit transfer for each SNAP-recipient student for every day of the 2012 spring semester.

Sample

We restricted our sample to students who received SNAP and excluded cases where SNAP transfer in April, May, and June occurred on days not indicated in the North Carolina Monthly Benefit Issuance Schedule. According to the schedule, families should receive SNAP on the 3rd, 5th, 7th, 9th, 11th, 13th, 15th, 17th, 19th, and 21st of each month, according to the last digit of the household head’s SSN. In the SNAP administrative data, however, a substantial portion of families received SNAP transfers on dates not indicated in the schedule in at least one month, although very few families only received benefits on dates not indicated in the schedule over the three month period. We exclude only those families who never receive SNAP on a date indicated by the North Carolina Monthly Benefit Issuance Schedule.

For recipients without a SSN, benefits are transferred on the 3rd of the month. Households in which the recipient lacks a SSN are likely to be systematically different from other SNAP-receiving households. However, individuals whose SSN ends in “1” also receive benefits on the
3rd of the month. Hypothesizing that most recipients without SSNs are likely new Hispanic immigrants, we also excluded children who received SNAP on the 3rd of the month and are Hispanic but include children who otherwise received SNAP on the 3rd of the month. Our final sample, therefore, consists of 395,710 SNAP-recipient students in grades K-12.

Analytic Plan

As described above, in North Carolina, SNAP benefit disbursement is determined by the last digit of the household head’s SSN, as indicated in the North Carolina Monthly Benefit Issuance Schedule. Every day of the spring semester, some children in SNAP-receiving families are in households that have just received benefit payments, whereas other children are in households at the end of their monthly cycle. This structure is depicted in Figure 1: within any given school, student A receives SNAP on the 5th of the month, student B receives SNAP on the 11th of the month, and student C receives SNAP on the 15th of the month. Comparing time to first disciplinary incident for these children provides information about the effect of time elapsed SNAP benefit transfer on student disciplinary incidents. Thus, our study is a quasi-experiment where the treatment is recency of transfer of monthly SNAP payment. The distribution of treatment is essentially random, as it is determined only by the last digit of participants’ SSNs. Differences in time to first disciplinary incident that are found are therefore unlikely to be due to systematic differences between children, because those who are at the beginning of their families’ monthly cycle are likely the same, or highly similar, to those at the end of the cycle.

We use discrete-time event history analysis to model the effect of recency of transfer of monthly SNAP payment on first student disciplinary incident, using the following equation:

\[
\logit h(t_{ij}) = [\alpha_0 + \alpha_1 D_{ij} + \alpha_2 D_{ij}^2 + \alpha_3 D_{ij}^3] + [\beta_1 S_{ij} + \beta_n X_{ij}]
\] (1)
where \( h(t_{ij}) \) is the hazard of a first disciplinary incident for student \( i \) in day \( j \); \( D \) is a continuous variable of the number of days since January 1, 2012; \( D^2 \) is the squared term of the \( D \) variable; \( D^3 \) is the cubed term of the \( D \) variable; \( S \) is days since SNAP receipt for student \( i \) in day \( j \); and \( X \) is a vector of student demographic characteristics (grade, gender, and race/ethnicity), which do not vary over time. We additionally model the effect of recency of transfer of monthly SNAP payment on first student disciplinary incident resulting in a serious consequence (e.g., out-of-school suspension, expulsion, or placement in an alternative learning program), using a similar procedure:

\[
\logit h(c_{ij}) = \left[ \alpha_0 + \alpha_1 D_{ij} + \alpha_2 D_{ij}^2 + \alpha_3 D_{ij}^3 \right] + \left[ \beta_1 S_{ij} + \beta_2 X_i \right]
\]

Here, \( h(c_{ij}) \) is the hazard of a first disciplinary incident resulting in a serious consequence for student \( i \) in day \( j \). Our main variable of interest, \( S \), and our covariates remain the same.

Results

We find that approximately 29.5 percent of North Carolina public school students received SNAP in March, April, or May of 2012; considering that we were not able to match all SNAP-receiving children with NCERDC records, an even larger percentage of North Carolina public school students likely receive SNAP. However, as shown in Figure 2, the proportion of North Carolina public school students receiving SNAP varies by county, from approximately 15 to 55 percent. As shown in Figure 3, SNAP-recipient students are much more likely to have a disciplinary incident during the 2011-2012 school year: while fewer than one in six students not receiving SNAP had a disciplinary incident during the 2011-2012 school year, over one in four students receiving SNAP had a disciplinary incident during the course of the school year. Additionally, as shown in Figure 4, conditional on having one incident, SNAP-recipient students experience more disciplinary incidents than students who do not receive SNAP. These findings
may reflect prior work suggesting that students living in poverty are more likely to be removed from school than higher-income students (Petras et al., 2011).

Table 1 displays descriptive statistics for our population of SNAP-recipient students, including sex, race/ethnicity, and grade. As shown, the largest group in our population consists of black students, followed closely by white students. The number of students receiving SNAP is greatest in early grades and declines as students reach middle and high school. The number of students receiving SNAP on each of the days listed in the North Carolina Benefit Issuance schedule is distributed uniformly, as displayed in Table 2, although, after dropping Hispanic students receiving SNAP on the 3rd, we have slightly fewer students receiving SNAP on that date.

Figure 5 illustrates the relationship between day of the spring semester and hazard of a first disciplinary incident. As shown, the hazard appears to peak in mid-February; by April, if a student has not already had at least one disciplinary incident, that student is unlikely to have one. Figure 6, in contrast, graphs the percentage of all incidents by time since SNAP receipt in January, February, March, and April. We also present a lowess curve, to descriptively demonstrate the overall pattern. The relationship between students’ disciplinary incidents and SNAP transfer appears to be linear: the percentage of disciplinary incidents increases with time since SNAP receipt. This increase is small: percent of all incidents by days since SNAP receipt varies by, at most, 0.6 percentage points over the SNAP month.

These initial results align with results from our discrete time to event models, which adjust for student demographics and with the overall hazard of first disciplinary incident over time. As shown in Table 3, consistent with the unadjusted results, the hazard of a first disciplinary incident increases the further a student is from having received SNAP. Again, the
impact is very small: for each day since SNAP receipt, the odds of any first disciplinary incident occurring increases by 0.15 percent and the odds of a serious first disciplinary incident occurring increases by 0.11 percent. Therefore, the odds of any incident are 4.35 percent higher 30 days after SNAP transfer, as compared with the odds on the day of transfer. The odds of a serious disciplinary incident are 3.19 percent higher 30 days after SNAP transfer, as compared with the odds on the day of transfer.

Discussion

This paper adds to the growing evidence that the SNAP benefit cycle has negative implications for household stability. We provide further evidence that the SNAP benefit cycle has impacts on children’s likelihood of having a disciplinary incident, potentially caused by economic strain and resulting family stress towards the end of the SNAP benefit month. This evidence is particularly compelling because the schedule of SNAP distribution in North Carolina is essentially randomly assigned. Although prior literature had indicated a relationship between the end of the SNAP month and increases in student disciplinary incidents, results were only able to compare differences between rates of disciplinary incidents for SNAP-recipient and non-SNAP-recipient students over the course of the month. In contrast, we are able to isolate the effect of the SNAP benefit cycle by comparing SNAP-recipient students at different distances from SNAP receipt, where the differences in distances are determined essentially through random assignment. Therefore, we can eliminate other confounding variables that might affect SNAP-recipient, but not non-SNAP-recipient, students.

Although effect sizes are small, it is important to note that the SNAP benefit cycle occurs on a monthly basis. Because disciplinary incidents are associated with students’ externalizing behaviors, our results suggest students receiving SNAP may experience behavioral cycles. In
periods furthest from SNAP receipt, they may more likely to display externalizing behaviors. Even if these periods represent only a few days each SNAP benefit cycle, the cumulative effect of these days over the course of the school year may be much larger than our effect sizes suggest. This accumulation over the school year may, in part, explain discipline gaps between low- and high-income children.

Some qualitative research suggests that families, despite their best efforts to budget, have difficulty smoothing consumption on a regular or semi-regular basis, given the small amount of SNAP they receive and the inconsistency of their other income sources (Darko, Eggett, & Richards, 2013; Seefeldt & Castelli, 2009). While our results suggest real differences between children’s behavior during the SNAP benefit month, they are modest in comparison with findings from Gennetian et al. (2015). This difference may reflect additional cyclical variation for SNAP-recipient families around the first of the month; for example, low-income parents may be more likely to be paid at the first of the month than higher-income parents. Similarly, SNAP-recipient families are likely to be eligible for and receive resources from other social safety net programs, which may also transfer benefits around the first of the month. That aggregated cyclical variation may have greater impacts for students than the SNAP benefit cycle alone; to our knowledge, prior studies have not investigated the aggregated impacts of income cycles for families.

Alternatively, our lower estimates may reflect increases in SNAP benefit amounts due to the American Recovery and Reinvestment Act of 2009 (ARRA): recent research suggests that, after the boost in SNAP benefits provided by ARRA, families receiving SNAP were better able to smooth their food consumption throughout the month (Todd, 2015). Because we rely on 2012 data, our results likely underestimate effects, given that SNAP benefits have now decreased to
pre-ARRA levels. Our results may provide further support to findings that current SNAP benefits are inadequate to meet the food consumption needs of many low-income families.
References


Kharmats, A.Y., Jones-Smith, J.C., Cheah, Y.S., Budd, N., Flamm, L., Cuccia, A., … Gittelsohn, J. (2014). Relation between the Supplemental Nutritional Assistance Program cycle and


Figure 1: Model Timeline of SNAP Receipt and Student Disciplinary Incident

Figure 2: Percentage of North Carolina Students Receiving SNAP
Figure 3: Percent of Students with any 2011-2012 Disciplinary Incident

Percent of Students with any 2011-2012 Disciplinary Incident

No SNAP | SNAP
---|---
15.4 | 25.7

Figure 4: Number of 2011-2012 Disciplinary Incidents, Conditional on One Incident

Number of 2011-2012 Disciplinary Incidents

Conditional on 1 Incident

No SNAP | SNAP
---|---
0 | 0
5 | 5
10 | 10
15 | 15
20 | 20
20+ | 20+


### Table 1: Descriptive Statistics

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<thead>
<tr>
<th>Gender</th>
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<tr>
<td>Female</td>
<td>195,674</td>
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<td>Male</td>
<td>200,036</td>
<td>50.60%</td>
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<tr>
<th>Race/Ethnicity</th>
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<tr>
<td>Asian-American</td>
<td>5,596</td>
<td>1.40%</td>
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<tr>
<td>Black</td>
<td>187,377</td>
<td>47.40%</td>
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<tr>
<td>Hispanic</td>
<td>37,699</td>
<td>9.50%</td>
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<tr>
<td>Native American</td>
<td>9,256</td>
<td>2.30%</td>
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<tr>
<td>Multiracial</td>
<td>18,121</td>
<td>4.60%</td>
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<tr>
<td>White</td>
<td>137,661</td>
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<th>Grade</th>
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<tr>
<td>Kindergarten</td>
<td>40,121</td>
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<tr>
<td>1st</td>
<td>37,441</td>
<td>9.50%</td>
</tr>
<tr>
<td>2nd</td>
<td>32,873</td>
<td>8.30%</td>
</tr>
<tr>
<td>3rd</td>
<td>34,774</td>
<td>8.80%</td>
</tr>
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<td>4th</td>
<td>33,982</td>
<td>8.60%</td>
</tr>
<tr>
<td>5th</td>
<td>33,390</td>
<td>8.40%</td>
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<td>6th</td>
<td>32,174</td>
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<tr>
<td>7th</td>
<td>30,552</td>
<td>7.70%</td>
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<tr>
<td>8th</td>
<td>28,540</td>
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<td>9th</td>
<td>31,377</td>
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<tr>
<td>10th</td>
<td>24,337</td>
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</tr>
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<td>11th</td>
<td>19,010</td>
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<tr>
<td>12th</td>
<td>17,139</td>
<td>4.30%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>395,710</strong></td>
<td><strong>100.00%</strong></td>
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### Table 2: Day of SNAP Receipt

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<thead>
<tr>
<th>Day of Month</th>
<th>N</th>
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<tbody>
<tr>
<td>3rd</td>
<td>36,931</td>
<td>9.30%</td>
</tr>
<tr>
<td>5th</td>
<td>40,715</td>
<td>10.30%</td>
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<tr>
<td>7th</td>
<td>40,424</td>
<td>10.20%</td>
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<tr>
<td>9th</td>
<td>40,118</td>
<td>10.10%</td>
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<tr>
<td>11th</td>
<td>40,637</td>
<td>10.30%</td>
</tr>
<tr>
<td>13th</td>
<td>39,716</td>
<td>10.00%</td>
</tr>
<tr>
<td>15th</td>
<td>39,933</td>
<td>10.10%</td>
</tr>
<tr>
<td>17th</td>
<td>39,048</td>
<td>9.90%</td>
</tr>
<tr>
<td>19th</td>
<td>39,029</td>
<td>9.90%</td>
</tr>
<tr>
<td>21st</td>
<td>39,159</td>
<td>9.90%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>395,710</strong></td>
<td><strong>100.00%</strong></td>
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Figure 5: Hazard of First Disciplinary Incident for SNAP-Recipient Students

[Graph showing the hazard function for SNAP students across the 2012 Spring Semester, with a peak around mid-March and a decline towards the end of the semester.]

Figure 6: Percentage of Disciplinary Incidents by Recency of SNAP Receipt

[Graph showing the percentage of incidents by the difference between the day of the incident and the day of SNAP receipt, with a peak around SNAP receipt in January and February and a decline as the recency increases.]
### Table 3: Preliminary Results

<table>
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<th>Variables</th>
<th>(1) All Incidents</th>
<th>(2) Serious Incidents</th>
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<tbody>
<tr>
<td>Days Since 1/1/2012</td>
<td>0.9888***</td>
<td>0.9909***</td>
</tr>
<tr>
<td></td>
<td>(0.0006)</td>
<td>(0.0009)</td>
</tr>
<tr>
<td>Days Since 1/1/2012 Squared</td>
<td>1.0002***</td>
<td>1.0002***</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Days Since 1/1/2012 Cubed</td>
<td>1.0000***</td>
<td>1.0000***</td>
</tr>
<tr>
<td></td>
<td>(0.0000)</td>
<td>(0.0000)</td>
</tr>
<tr>
<td>Days Since SNAP Receipt (0-30)</td>
<td>1.0015***</td>
<td>1.0011**</td>
</tr>
<tr>
<td></td>
<td>(0.0004)</td>
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<td>(0.0058)</td>
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<td>0.7293***</td>
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<td>(0.0133)</td>
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<td>(0.0154)</td>
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<td>0.7903***</td>
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<td>(0.0153)</td>
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<td>(0.0139)</td>
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*** p<0.01, ** p<0.05, * p<0.1