# Household Instability and Child Food Insecurity

by

Yiwen Wang

and

R. Kelly Raley

Population Research Center &
Department of Sociology
University of Texas – Austin

## Abstract

Previous research has linked children's family instability, as measured by mother's marital-cohabiting transitions, to increased risk of poverty, illness, and poorer developmental outcomes. Family theories hypothesize that disruption of household routines and reduction in household resources link family instability to poorer child well-being. Recent research reveals that maternal partnership transitions represent a small fraction of the household instability children experience. These other forms of household instability also affect household resources and routines. The goal of this study is to see whether household instability generally is linked to one aspect of child food insecurity. We plan to extend this preliminary analysis to determine how non-parental household members in children's households are associated with food insecurity using longitudinal data available in the 2008 Survey of Income and Program Participation (SIPP).

**Introduction**

Ensuring food security is important for children as a growing body of research suggest that food insecure status is adversely associated not only with children's current health and well-being, but also with their future development (Coleman-Jensen et al. 2017). Although it's been well established that a large number of socio-demographic risk factors are associated with food insecurity, researchers still find that while the majority of low socioeconomic status households are able to stay food secure, some households above the poverty line can suffer from food insecure (Brewer 2018). This indicates that food insecurity is not merely a income-based story and that other factors also matter to children's food security (Gundersen and Ziliak 2014; McLanahan and Percheski 2008).

Among a large number of studies on family structure characteristics and food insecurity (e.g., Gundersen and Ziliak 2014), recent research finds that family instability in the form of maternal union transitions is associated with household food insecurity among socioeconomically disadvantaged families with young children, and the effect varies by race and ethnicity (Hernandez and Pressler 2012). While research suggests that family instability may impact the likelihood of experiencing food insecurity for children, no study theoretically establishes and empirically assesses whether household instability beyond parental union transitions is consequential for child food security outcomes. Recent research shows that people other than parents contribute much instability in households with children (Perkins 2017; Raley et al 2018). Therefore, focusing only on parental instability may lead to underestimations of overall effects that family instability has on children's outcomes.

Household instability can be linked to child food insecurity through two possible mechanisms: changes in household resources and household routines. Having people move into and out of households may affect household food insecurity by altering household resources. Those resources include not only economic support such as goods, income, and wealth but also non-monetary support such as time, labor, skills, and social support. Household resources can increase or decrease when a household member is gained or lost, which may in turn affect household food security. Another mechanism could be disruptions in household routines caused by people joining and leaving households. Changes in household composition can make it harder to plan ahead for mealtimes, make use of available resources, and maintain a calm atmosphere and a sense of order during the meal (Fiese et al. 2016). Thus, disruptions in the routine functioning at the household level may in turn increase the risk of food insecurity for children in the households.

A closer evaluation of household composition changes can provide insights about the underlying dynamics of household resource and household routine changes as well as their possible influences on child outcomes. Although prior research has established that parental instability has a profound impact on child well-being (e.g., Fomby and Cherlin 2007) , few studies have examined to what extent instability caused by people other than parents matters. It's clear that household instability remains an unaccounted factor in children's developmental contexts (Perkins 2017). Whether all changes in household compositions are equally important or whether certain types of changes are more important to children's well-being than others remain unknown. To address this gap, this study assesses whether household instability is associated with food insecurity among U.S. households with children. Specifically, we take all members in the households into account when measuring household composition changes. We also aim to examine the relationship between food insecurity and 3 types of sources of household composition changes: parents, grandparents, and others in the households. The goal of the current study is to establish whether household instability is an unexplored factor contributing to food insecurity after accounting for household financial and key socio-demographic characteristics. This study intends to push beyond the prior literature by recognizing and testing the influence of household composition changes including, but not limited to parental changes on children's outcomes.

**Study design**

*Data and Method*

This study uses nationally representative data from the 2008 panel of the Survey of Income and Program Participation (SIPP). SIPP interviews respondents every four months for four years. Each interview includes a repeated set of core questions and changing modules of topical questions. Our analysis is based on data from wave 6 (conducted in the summer of 2010) and wave 9 (conducted in the summer of 2011) because household food security information was only collected in Adult Well-Being Topic Module in those two waves. The sample is limited to 14,124 children who were under 17 years old at Wave 9 and observed in Wave 6.

*Measures*

The food insecurity measure is constructed from an abbreviated 5-item version of the full 18-item food security module used in the Current Population Survey. In this measure, respondents' households were coded as food insecure if they affirmed they had two or more food security problems from the list of five. Household instability is measured by household composition change; it captures any composition change in household membership by comparing the sets of unique identifiers in consecutive waves. Composition change includes situations where a member moves in or out of a household. Additional measures allow us to break composition change into change involving entrances and exits of children, parents, grandparents and other people in households (see Raley et al. 2018). We also measure residential instability by creating an indicator whether an individual's address changed between interviews. We also control for level of education of the child's mother, child's race-ethnicity, household size and household income in models. Mother's education is measured as the education level of the child's mother and this variable can change across waves. Education has four categories: less than high school, high school graduate (including GED), some college, and college degree or more. Child's race-ethnicity is coded as non-Hispanic white, black (including Hispanic and non-Hispanic blacks), (non Hispanic) Asian, Non-Hispanic Other (including multi-racial), and Hispanic. Total household income is divided by the 2011 federal poverty threshold to construct an income-to-poverty ratio.

*Analytical approach*

To begin we describe household instability experienced between Wave 6 and Wave 9 and the proportion of children food insecure by whether they experienced any change in household composition. Next, we estimate logistic regression models that regress food insecurity at Wave 9 on household composition instability and all of the control variables except for household income. This provides a baseline estimate of the association between household instability and risk of food insecurity with basic, fixed, sociodemographic characteristics controlled. A second model adds a control for household income at Wave 9 to see whether this baseline association can be explained by the lower financial resources in unstable households. If part of the reason why household instability matters is the disruption of routine, we expect that it will continue to be significant net of this control. Finally, Models 3 and 4 repeat Models 1 and 2 with a control for Wave 6 food insecurity added. This provides a stronger test of the possibility that household instability *causes* food insecurity by reducing financial resources (Model 3) or disrupting household routine (Model 4).

**Preliminary Results**

In the analytical sample, food insecurity rate among children was 13.7% in Wave 9 and 13.8% in Wave 6. Between Wave 6 and Wave 9, 16.0% children experienced at least one type of household composition change. Among children who experienced any change in household composition, 18.3% reported food insecurity at Wave 9. For children who experienced no change in household composition, the proportion food insecure was 13.1%.

Table 1 presents the results from a logistic regression model predicting food insecurity status at Wave 9. Model 1 shows that when controlling for mother's education, child's race-ethnicity, household size and experiences of address changes, children who experienced any change of household composition between Wave 6 and Wave 9 are more likely to be food insecure. The effects of socio-demographic control variables are consistent with other studies in the literature: mother's higher education is associated with a decrease in the probability of experiencing food insecurity. Also, compared to non Hispanic whites, blacks, non-black Hispanics and others are more likely to report food insecurity. However, residential instability and household size are unrelated to the likelihood of experiencing food insecurity. In Model 2, we add household income to see if it can explain the association between household composition change and food insecurity. Although more household income is strongly associated with a decrease in the probability of reporting household food insecurity, the effect of any household composition change remains statistically significant. This supports our speculation that income is only part of the story and that household instability may also contribute to children's food security for reasons such as disrupting household routines. Finally, in models 3 and 4 we further include food insecurity status at Wave 6 to see if household instability increases the risk of becoming food insecure or reduces the risk of becoming food secure (if food insecure at Wave 6). The result that any household composition change is still significantly associated with food insecurity status at Wave 9 provides additional support that the association between household instability and food insecurity outcomes may be not spurious and there may exist a causal relationship.

**Table 1 Odds ratio of reporting food insecure at Wave 9**

| VARIABLES | Model 1 Food insecurity | Model 2 Food insecurity | Model 3 Food insecurity | Model 4 Food insecurity |
|---|---|---|---|---|
| anychange69 | 1.265*** | 1.188** | 1.239** | 1.178* |
| | (0.081) | (0.077) | (0.083) | (0.079) |
| anyaddrchange69 | 0.938 | 0.858* | 0.814** | 0.758*** |
| | 1.265*** | 1.188** | 1.239** | 1.178* |
| Mom's education (<HS excluded) | | | | |
| HS | 0.783*** | 0.894 | 0.830* | 0.928 |
| | (0.058) | (0.066) | (0.065) | (0.073) |
| <College | 0.600*** | 0.803** | 0.657*** | 0.832* |
| | (0.043) | (0.060) | (0.050) | (0.065) |
| College | 0.235*** | 0.513*** | 0.292*** | 0.584*** |
| | (0.022) | (0.052) | (0.029) | (0.061) |
| Race (NHWhite excluded) | | | | |
| Black | 2.049*** | 1.583*** | 1.843*** | 1.492*** |
| | (0.144) | (0.116) | (0.136) | (0.113) |
| NBHispanic | 1.805*** | 1.525*** | 1.644*** | 1.418*** |
| | (0.116) | (0.099) | (0.110) | (0.096) |
| Asian | 0.886 | 0.849 | 0.880 | 0.831 |
| | (0.147) | (0.142) | (0.149) | (0.142) |
| Other | 2.377*** | 2.105*** | 2.199*** | 1.989*** |
| | (0.244) | (0.221) | (0.229) | (0.210) |
| Household size | 0.986 | 0.974 | 0.986 | 0.976 |
| | (0.016) | (0.015) | (0.017) | (0.016) |
| Household income | | 0.015*** | | 0.025*** |
| | | (0.005) | | (0.008) |
| Food insecurity at wave 6 | | | 4.376*** | 3.889*** |
| | | | (0.260) | (0.236) |
| Constant | 0.208*** | 0.391*** | 0.148*** | 0.264*** |
| | (0.023) | (0.047) | (0.017) | (0.034) |

4

| | | | | |
|---|---|---|---|---|
| Observations | 14,124 | 14,124 | 14,124 | 14,124 |
| R-squared | 0.064 | 0.098 | 0.118 | 0.143 |

<center>Robust standard errors in parentheses<br>*** p<0.001, ** p<0.01, * p<0.05</center>

**Next steps**

These preliminary results suggest that household instability plays a role in children's exposure to food insecurity and may provide support for the household resource change and/or household routine disruption mechanisms. In subsequent analyses, we separate household instability due to a parent entering from that involving other household members to see if the estimated effect of household instability varies by type. These analyses will continue to link transitions to the two theoretical mechanisms we proposed above. In addition, we will investigate variation in the association between household instability and food insecurity by race and ethnic groups. This will allow us to understand whether the meaning of household instability on children's food insecurity differs by race and ethnic origins. Minority children more often live with grandparents and other relatives and the coming and going of these "other" family members may be more consequential to their well being than is the case for non-Hispanic whites.

References

Alisha Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory, and Anita Singh. 2017. Household Food Security in the United States in 2016, ERR-237, U.S. Department of Agriculture, Economic Research Service.

Fiese, Barbara H., Craig Gundersen, Brenda Koester, and Blake Jones. 2016. Economics and Human Biology Family Chaos and Lack of Mealtime Planning Is Associated with Food Insecurity in Low Income Households. Economics and Human Biology 21:147–55.

Fomby, Paula and Andrew J. Cherlin. 2007. Family Instability and Child Well-Being. American Sociological Review 72(2):181–204.

Gundersen, Craig, and James P. Ziliak. 2014. Childhood food insecurity in the US: Trends, causes, and policy options. The Future of Children: 1-19.

Hernandez, Daphne C., and Emily Pressler. 2013. Maternal union transitions and household food insecurity: Differences by race and ethnicity. Journal of Family Issues 34(3): 373-393.

Mackenzie Brewer. 2018. Household Debt and Children's Risk of Food Insecurity. Paper presented at Population Association of American 2018 Annual Meeting April 25-28, Denver, CO.

McLanahan, Sara, and Christine Percheski. 2008. Family structure and the reproduction of inequalities. Annual. Review of Sociology 34: 257-276.

Perkins, Kristin L. 2017. Household Complexity and Change among Children in the United States, 1984 to 2010. Sociological Science 4: 701-724.

R. Kelly Raley, Inbar Weiss, Robert Reynolds and Shannon E. 2018. Cavanagh. Estimating Children's Household Instability between Birth and Age 16 Using Longitudinal Household Roster Data (SIPP). Paper presented at Population Association of American 2018 Annual Meeting April 25-28, Denver, CO. available on socarxiv: https://osf.io/eyd7n/analytics