Public Policy Responses to Childhood Hunger

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Abstract: Despite more than $100 billion in federal food assistance expenditures in fiscal year 2011, 8.6 million American children lived in households with food insecurity among children, and 845,000 lived in households with very low food security among children. Has federal food assistance reached the limits of its effectiveness or is there more that can be done? This report reviews the research on public policy responses to child food hardships and hunger. It undertakes a conceptual analysis of how food hardships for children might arise and how assistance programs are intended to help. It also describes the major U.S. food assistance programs that benefit children and how these programs operate. The report summarizes research findings and discusses programmatic and research challenges. The report concludes with recommendations for improving both research and policies.

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> *With one important exception, the major determinants of food insecurity are fairly well understood. The exception is the effects of food and nutrition assistance programs.*
>
> Nord and Parker (2010, p. 1179)

Introduction

Although the U.S. is a wealthy country, many of its children face food insecurity and even hunger. In 2011, 8.6 million American children lived in households with low food security among children, meaning that the households "had difficulty at some time during the year providing enough food for (children) due to a lack of resources." Of these children, 845,000 lived in households with very low food security among children, meaning that the "food intake of one or more (child) members was reduced and eating patterns disrupted because of insufficient money and other resources for food" (Coleman-Jensen et al. 2012). Concerns about children's nutritional well-being are at the heart of many public food assistance programs as well as many other social safety net programs. The federal government spent more than $100 billion on domestic food assistance in each of the last two fiscal years, FY 2011 and FY 2012. Through the Healthy, Hunger-Free Kinds Act of 2010, the U.S. is strengthening its child nutrition programs and refocusing its efforts to eliminate child hunger. Nevertheless, large numbers of children continue to suffer hardships.

What are the appropriate public policy responses to child hunger? The fact that food hardships continue to affect substantial numbers of American children suggests that there is room for improvement. However, should these improvements take the form of modest adjustments to existing programs, large-scale expansions of the programs, initiatives targeted at program gaps, or a more sweeping re-engineering of public food and social safety nets? Unfortunately, the research for evaluating these different policy directions is far from settled, with some studies indicating that assistance programs reduce food hardships but others indicating that programs fail to reduce hardships or may even make them worse.

This report reviews the research literature on public policy responses to child food hardships and hunger. It begins with a conceptual analysis of how food hardships for children might arise and how assistance programs are intended to help. It then describes the major U.S. food assistance programs that benefit children and how these programs operate. The report follows with an overview of research findings and discussions of programmatic and research challenges. The report concludes with recommendations for improving both research and policies.

Conceptual analysis

To craft appropriate policy responses to child food hardships and hunger, it is important to first understand why some children face these problems. To help develop that understanding, this report utilizes Barrett's (2002) conceptual model of how household food security is determined.[1] Although highly simplified and stylized, the model shows how resources available to households lead to members' nutritional and general well-being. It also explains why some households might not produce good outcomes, points to ways that public assistance programs might help, and highlights some challenges facing these programs.

Barrett's model extends the household production framework of Becker (1965) and Gronau (1977) and the health production framework of Grossman (1972) to consider household nutrition and food security. In Barrett's model, households rationally choose various actions to further the objective of maximizing their members' physical well-being and general consumption in the present and in the uncertain future. The model assumes that households have valuations of these outcomes that incorporate their members' tastes and preferences. The model also assumes that households subjectively discount outcomes in the future in the sense that they value these outcomes but at a rate that is less than outcomes in the present. Households have full information about circumstances in the present but rely on expectations of circumstances in the future.

In pursuing these objectives, households face several constraints. First, they are restricted in the ways that physical well-being is produced. In particular, physical well-being in any given period depends on the level of well-being from the previous period, is augmented by contributions of nutrition, other goods or services, and activities (e.g., rest, exercise) in the current period, and is subject to shocks from illness or injury. Second, the nutritional inputs to physical well-being are themselves subject to production constraints which depend on contributions of food and non-food items and of members' time (e.g., shopping, preparation, cooking), are conditioned by health shocks, and are also conditioned by the members' skills and knowledge. Third, households are subject to financial constraints in which per-period purchases of food and non-food items (as well as services and other consumption purchases) must not exceed their per-period net incomes, defined as the sum of the members' earnings plus the return on their savings and other assets plus any borrowing and less any savings. The household's ability to borrow or save may be limited. Fourth, the household members have limits on the time available each period to work or participate in other activities. Finally, households must secure minimum amounts of nutrition and other inputs to physical well-being to avoid impairment and permanent changes to well-being.

The model assumes that households choose amounts of food and non-food purchases and allocations of the members' time to maximize their objectives subject to the constraints. Actions by the household lead to levels of food consumption and nutrition that can, in turn, be compared to thresholds of food insecurity and hunger. With the model, we can examine threats to food security in a given period (that is, in a static sense) and across multiple periods (that is, in a dynamic or risk sense).

Barrett identifies six types of static, structural threats to households' food security. First, households are more likely to suffer food insecurity or hunger if their members' have low labor productivity through circumstances such as disability, a lack of education, or very young or old age. Low labor productivity impairs a household's ability to work and acquire resources; it may also limit the household's ability to transform available goods into nutritional and physical well-

[1] Caswell and Yaktine (2013) also provide a comprehensive conceptual model.

being. Second, households face worse nutritional outcomes if they confront adverse terms of trade in the form of either low wages for the work they perform or high prices for the goods they purchase. Again, these circumstances limit households' abilities to acquire goods and services that they need. Third, households' outcomes will be worse if they lack access to markets where they can engage in paid labor or purchase goods. Fourth, low levels of savings and assets reduce households' budgets and may restrict their purchases. Fifth, constraints on the ability to borrow (and possibly on the opportunities to save) limit households' abilities to shift financial resources from prosperous times to lean ones. Sixth, weak social or public support systems may reduce households' abilities to obtain necessary goods in emergencies and periods of financial distress.

Research on household and child food security confirms many of these predictions. Nord and Parker (2010) reviewed previous studies and examined survey data. They found that low skills, disability, low levels of income, unemployment, single parenthood, large household sizes, minority and non-citizen status, and poor local economic conditions were all associated with childhood hunger. Kimbro et al. (2012) additionally found that disadvantaged neighborhood circumstances were associated with food hardships and hunger.

Over time, other sets of circumstances may leave households vulnerable to food insecurity and hunger. First, households face higher risks of food insecurity and hunger if their circumstances frequently leave them near the thresholds for bad food outcomes. Although such households could be food secure in an immediate sense, their proximity to the thresholds increases the chances that a negative shock might push them below the thresholds. Second, households' susceptibility to negative shocks, perhaps because of marginal health, residence in an area with a volatile economy, or work in a vulnerable industry, increases the chances of suffering bad food outcomes. Third, households that lack private or social insurance face greater risks that negative shocks will result in severe food hardships.

When confronted with adverse circumstances, households adopt a number of coping strategies to avoid hunger and the worst consequences of food shortages. For example, Barrett describes households turning to transfers and loans, disposing of non-productive and productive assets, and possibly even stealing to avoid hunger. Edin et al. (2013) describe how parents sometimes send their children to relatives or neighbors to obtain meals. An implication of these strategies is that households would be at additional risk of hunger if these coping mechanisms are not available.

Barrett's model is framed in terms of household members generally and does not distinguish between adults and children. Despite this limitation, the model does carry some special implications for children. Depending on their ages, children have limited capacities and typically do not contribute much, if at all, to households' labor resources or productivity. At the same time, children's physical well-being may be especially sensitive to food deprivations in the sense that they are more likely to suffer permanent physical impairments if their nutritional needs are not met. Children may also require other inputs of time or goods from household members, limiting the productivity of these members in other activities. Thus, the presence of children increases a household's susceptibility to food hardships, and within households, children themselves are more vulnerable to bad food outcomes.

We gain additional insights by extending Barrett's model to explicitly consider children. Standard economic models (see, e.g., Becker 1983) assume that children are dependent on parents' decisions and that parents have altruistic preferences defined over their own outcomes and their children's outcomes. These assumptions have mixed implications for children's physical and nutritional well-being. On the one hand, parents in this model would react to a

reduction in external resources going to their children by substituting resources of their own, which is consistent with the paradigmatic view that parents are protective of children and take steps to shield them from hunger and other negative outcomes. On the other hand, the model predicts that parents react to an *increase* in external resources going to their children by withdrawing some of their resources and redirecting them towards their own well-being. The compensatory reactions to changes in external resources going toward children are described as a crowding-out response.

Predictions from standard economic models stem from assumptions that parents are informed about their household's present circumstances, are capable of producing good outcomes for themselves and their children given certain resources, and are concerned about their children's well-being. These assumptions seem to describe many, if not most, households. For example, McIntyre et al. (2003) and Edin et al. (2013) provide evidence of parents acting to protect children. Even so, the assumptions may not be accurate in some situations. Worryingly, alternative assumptions have deleterious implications for children's well-being. For example, Fram et al. (2011) have challenged the assumptions that parents are well-informed and protective of their children's nutritional outcomes. Fram et al. separately interviewed children and adults in vulnerable households and found that children's reports of food hardships and coping strategies sometimes differed from their parents' reports. With respect to parental capabilities, McLaughlin et al. (2003) uncovered differences in food preparation capabilities and practices among poor women, and Gundersen and Garasky (2012) found that parents with poor financial management skills were more likely to experience food insecurity. Chilton and Rabinowich (2012) document parenting problems that contribute to childhood hunger.[2]

Beyond identifying conditions that might lead to hunger and poor nutritional outcomes, we can also use the conceptual model to consider ways by which public agencies and private charities can help. Barrett (2002) provides a typology of food assistance strategies in developed countries. The first strategy is to supplement households' general budgets or food budgets. General supplemental strategies are intended to relax households' budget constraints and increase their ability to purchase food. The chief advantage of these strategies is that they give households flexibility in achieving nutritional and well-being outcomes. The disadvantage is that they might not translate into nutritional improvements if, for instance, households use the supplements to substitute for food purchases that they would have made otherwise or if they make poor buying choices. Also, the strategy assumes that household adults are capable of using food resources to produce good outcomes.

A second strategy is for agencies to provide prepared meals, specific food items, or vouchers that can only be used for particular food items. As with general supplements, specific supplements extend households' food resources and allow them to achieve better nutritional outcomes. Depending on the type of support, the supplemental food might be able to be consumed directly, leading to a sure nutritional outcome; this might be especially helpful for households with limited capabilities. Another advantage of this strategy is that it is more difficult to convert food items into alternative forms of consumption. In addition, food items, such as meals, can be provided to particular individuals, ensuring that they are fed.

A third strategy is for agencies to improve households' abilities to produce good nutritional outcomes from a given set of inputs, for instance, by providing nutritional and health

[2] A large body of research indicates that food hardships and childhood hunger contribute to emotional and behavioral problems in children (see, e.g., Kleinman et al. 1998 and Perez- Escamilla and Pinheiro de Toledo Vianna 2012). These problems could compound other parenting problems creating negative feedback effects.

education. An advantage of this strategy is that it can make any given set of resources (or any other type of assistance) more efficacious.

Along with these "direct" strategies to improve households' nutritional well-being, we can also consider indirect strategies. In principle, there could be beneficial impacts from any policy that addresses one or more of the threats, risk factors, coping limitations, or behavioral limitations identified in the conceptual analysis. For example, other public transfers, such as means-tested cash payments or in-kind support for housing, utilities, or health-care, should expand households' budget sets and contribute to better food outcomes. Educational or job training programs that improve people's earnings abilities or job security would also relax households' budget constraints and help with food outcomes. Thus, expansions of anti- poverty programs promote food security, while contractions, as have occurred in the U.S. over the past two decades, erode food security.

Public and charitable food assistance in the U.S.

The U.S. Department of Agriculture is the federal agency that is responsible for domestic food assistance programs in the U.S. Table 1 lists the USDA's food programs that benefit children, along with the federal costs for each program, indicators for how each program fits within Barrett's typology, and the targeted beneficiaries (if any) of each program. Although the table includes many programs, nearly all of the federal food assistance budget is devoted to five very large programs: the Supplemental Nutrition Assistance Program (SNAP, formerly known as the Food Stamp Program), the National School Lunch Program (NSLP), the School Breakfast Program (SBP), the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), and the Child and Adult Care Food Program (CACFP). Each of these is described briefly below.[3]

[Table 1]

SNAP. The Supplemental Nutrition Assistance Program is far and away the largest food assistance program in the U.S., accounting for about three-quarters of the federal domestic food assistance budget. The SNAP is a means-tested, entitlement program that is intended to help needy people obtain more nutritious diets than they could otherwise afford. Households are generally eligible on the basis of having low incomes and assets, although there are other limitations on eligibility involving conditions such as immigrant status. The SNAP provides benefits in the form of an Electronic Benefit Transfer (EBT) card with amounts that can be used to purchase groceries and other food items at authorized stores; thus, the program is a general supplement. The federal government pays the entire cost of benefits under the program as well as a portion of the administrative costs. States administer and operate the program, paying the remaining portion of the administrative costs. Maximum benefits are adjusted each year for inflation and set in accordance with costs under the Thrifty Food Plan (TFP), which varies with household size. After allowances for certain expenses, benefits are reduced with income. In 2012, the maximum benefit for a family of three living in the 48 contiguous states or the District of Columbia was $526 per month, and households received an average of $278 per month. In addition to EBT assistance, the SNAP funds outreach and education efforts by states; so, it also has elements of an efficacy program.

[3] Currie (2003) has provided more detailed descriptions of the major U.S. food programs.

NSLP. The National School Lunch Program, which provided more than 5.2 billion nutritious meals to school children in FY 2012, is a specific supplemental entitlement program that is targeted at particular individuals. Children are eligible for free lunches through the NLSP if they live in households with incomes below 130 percent of the federal poverty guidelines or in households receiving SNAP or some other types of means-tested assistance. Children may receive reduced-price lunches if they live in households with incomes between 130 and 185 percent of the federal poverty guidelines. Children in households with higher incomes may also purchase meals, which are subsidized by the federal government. School food authorities (SFAs, usually school districts) administer and operate the programs and are reimbursed on a per-meal basis by the federal government.

SBP. The School Breakfast Program operates in much the same way as the NLSP but provides breakfasts instead of lunches. The two programs share the same eligibility criteria. The SBP is also administered and operated by SFAs that are reimbursed for meal expenses by the federal government. Participation in the SBP is far lower than in the NLSP. In FY 2012, the SBP served an average of 12.8 million students per month, while the NSLP served an average of 31.6 million students. The composition of participants also differs. Approximately five-sixths of school breakfasts are served to children who are eligible for free or reduced- price meals, while only about two-thirds school lunches are served free or at a reduced price.

WIC. WIC is a special supplemental and efficacy program that provides vouchers redeemable for specific baskets of food items for pregnant women, postpartum and breastfeeding mothers, infants, and children up to five years of age. The efficacy component of WIC provides nutritional education and health care referrals to caregivers receiving the program's food assistance. Eligibility is limited to groups mentioned and further conditioned on either low-income or receipt of other means-tested assistance and on nutritional risk. As with the other major food programs, WIC benefits and services are funded by the federal government, but the programs are run by state and local governments. However, unlike the other major programs, WIC is not an entitlement. Local WIC programs only enroll clients while allocated funds permit; once funding is exhausted, the programs may turn eligible people away (this has not been a significant issue in recent years). The average per-person value of the monthly WIC food packages is modest—about $45 in FY 2012. The packages are intended to supplement recipients' diets, not to serve as their entire diets.

CACFP. The CACFP provides financial and in-kind support to child and adult care facilities. Children qualify for free or reduced-price meals and snacks under guidelines that are similar to those for the school meal programs. Although the CACFP supports some elderly recipients, almost all of the funding goes to pre-school children.

Other programs. The remaining rows of Table 1 list several other USDA-funded food assistance programs that also help children. Two of the programs—the Food Distribution Program on Indian Reservations (FDPIR) and the Nutrition Assistance Block Grants (NABGs)—are alternatives to the SNAP that operate on some Indian reservations and in some U.S. territories. Both programs give governments in these jurisdictions flexibility to tailor assistance to meet local circumstances. Both programs provide assistance to households generally, including households with children, under eligibility rules that are similar to the SNAP. The FDPIR allows tribal governments to provide baskets of food in lieu of SNAP, while the NABGs allow territorial governments to operate food assistance programs.

Two other programs—Food Assistance for Disaster Relief and The Emergency Food Assistance Program (TEFAP)—also help households generally. The first of these programs

offers food items for distribution and temporary EBT benefits following disasters or emergencies. The amount of assistance varies depending on the occurrence of these events. TEFAP provides food and some administrative support that are distributed to community food banks, food pantries, and soup kitchens.

The other programs listed in Table 1 include children as specific beneficiaries. The Commodity Supplemental Food Program (CSFP) distributes food to low-income elderly people, young children, and pregnant, postpartum, and breastfeeding mothers. States must apply to participate in the CSFP, and not all states do. Also, despite the potential coverage of this program, almost all of the benefits go to elderly people.

The WIC Farmers' Market Nutrition Program extends WIC benefits beyond grocery stores to include purchases at farmers' markets and roadside produce markets. As with the CSFP, some states do not participate in this program. The Summer Food Service Program (SFSP) provides free meals and snacks at selected sites in low-income areas and is intended to fill the meal gap that occurs when school is out of session for the summer. Local agencies and groups apply to operate the programs, so coverage varies depending on the initiative and capabilities of potential partners. In 2012 the program operated at 38,800 sites and served a maximum of 2.3 million children daily. Finally, the Special Milk Program provides free and subsidized milk to children in schools, child care facilities, and summer camps that do not participate in other child nutrition programs. The program also provides milk to some half- day and kindergarten children.

State and local governments. State governments, local governments, and SFAs play a critical role in providing food assistance. Nearly all of the programs listed in Table 1 are organized to have the federal government fund benefits or provide food but to have other governments operate the programs. State and local governments contribute considerable administrative resources to fulfill these responsibilities. Although they operate under broad federal guidelines, state and local governments also have some discretion in how they administer the programs.

State governments, local governments, and SFAs exercise their discretion in a number of ways. First, they may elect to not provide certain programs or optional program features. We have already discussed that several states choose not to participate in the CFSP and the WIC Farmers' Market Nutrition Program. There are other examples involving the SNAP. For instance, the USDA will reimburse state agencies for approximately half their costs of conducting outreach to encourage SNAP participation. Most states take advantage of this optional funding, but several do not. The SNAP also gives states the option of offering transitional benefits to families who have recently left the Temporary Assistance for Needy Families (TANF) program; however, only a few states provide this benefit. SBPs are not offered at some public schools. Also, publicly-funded charter schools in some states are not required to offer meal programs at all. An investigation by the California State Auditor (2010) found that a substantial fraction of California's charter schools did not offer federally-funded meal programs and that several offered no meal services at all. The lack of meal programs at charter schools can present low-income parents with a cruel choice between educational and nutritional opportunities for their children; it may also be a subtle way of discriminating against poor children.

Second, state and local governments have choices in the rules for their programs. For example, states have the discretion to confer categorical eligibility for SNAP to households that receive other types of means-tested assistance. Because income and asset requirements are often less stringent under these programs, the availability of categorical eligibility can make participation easier for many clients. States similarly have discretion in other SNAP rules, such

as the types of income changes that clients must report, the lengths of certification periods, how certain deductions will be calculated, and whether the value of vehicles will be included in asset calculations (USDA Food and Nutrition Service 2012).

Finally, state and local governments choose the amount of administrative services that they offer, the numbers and locations of program offices, hours for those offices, and policies and practices within the offices. The net effect from all of this administrative flexibility is that the operations of food assistance programs can vary markedly across jurisdictions.

Some state and local governments step beyond these administrative roles to fund food assistance programs or program extensions on their own. One popular extension is to provide free breakfasts to all children at schools regardless of the children's financial eligibility. The USDA funds universal free SBPs under some circumstances, but some state governments and SFAs use their own resources. For example, the DC Healthy Schools Act funds universal free breakfasts throughout that city; North Carolina funds universal free SBPs for kindergarten students at schools with high proportions of low-income students; and Illinois, Maryland, and Massachusetts provide funding to schools that operate universal free SBPs. Some states also operate their own commodity support and food distribution programs; New Jersey's State Food Purchase Program is an example. Some states also run programs that fill gaps left by federally-funded programs or that extend benefits to excluded groups. For example, several states supplement the school meal reimbursements that SFAs receive, allowing the SFAs to offer higher quality and more nutritious meals. Washington operates a State Food Assistance Program that provides benefits to immigrants who are legally excluded from the SNAP.

Private assistance. Alongside this public assistance network stands an extensive private network of food banks, food pantries, and soup kitchens that distribute food and meals to needy people. Mabli et al. (2010) surveyed more than 37,000 agencies that were part of the Feeding America network of emergency food providers. Mabli et al. estimated that these providers served approximately 37 million separate people in 2009 and that the providers assisted just over two percent of Americans in an average week. The presentation at this workshop by Alaimo describes community responses to hunger in more detail. My discussion focuses on the inter-relationship of the public and community networks.

The first area of intersection between these networks is the tremendous amount of support that the federal government provides through its food distribution programs. Mabli et al. estimated that 54 percent of pantries, 34 percent of soup kitchens, and 31 percent of overnight shelters were supported through TEFAP and that 33 percent of pantries, 24 percent of soup kitchens, and 22 percent of shelters were supported through the CSFP. A small number of providers on or near reservations were also supported through the FDPIR. Given this extensive support, the community food assistance network is most properly viewed as a public-private partnership, rather than a strictly private endeavor.

A second area of intersection is the reliance of emergency food clients on other food assistance programs. Mabli et al. estimated that two-fifths of clients in the Feeding America network were receiving SNAP, that more than half the clients with young children were receiving WIC, and that nearly two-thirds of the clients with school-age children were receiving school meals.

Third, community organizations leverage additional public assistance resources. Many emergency food providers encourage and assist clients to participate in public programs. The supporting organizations also advocate for better public programs within their communities (see, e.g., Singletary et al. 2012). In addition, the organizations are often applicants for federally-

supported programs, such as SFSP grants.

Fourth, emergency food providers innovate special services to fill the gaps left by the public assistance programs. For example, traditional school meal programs feed students while they are in school but not at other times, such as evenings, weekends, holidays, and summers. The SFSP addresses some of the need during summers; however, Feeding America providers have developed additional programs, including backpack programs that send food items home with children, school-based food pantries that make emergency food relief more accessible to families, and Kids Cafés (Tapper-Gardzina and Cotuga 2003) that serve meals and snacks to low-income students after school hours.

Complexity and geographic variability. We began the discussion of food assistance programs by describing the five major federally-funded programs and how each supported a relatively standard set of food benefits, including common benefit formulas in most states for SNAP and common reimbursement rates for meals for the SBP, NSLP, and CACFP. The subsequent discussion, however, shows that this funding uniformity belies tremendous geography variability in the ways that states, local governments, and SFAs operate the programs, in the availability of other food assistance programs, and in the interplay with and complementarities offered by community organizations. For researchers, this variability represents both an opportunity because it provides numerous contrasts between policy environments and a challenge because of the complexities. From the more important perspective of children's well-being, this uneven landscape raises the possibility that many vulnerable children are under-served, depending on where they live, the choices of local administrators and elected officials, and the gumption of their neighbors.

Effects of food assistance programs in the U.S.

An immediate question regarding the effectiveness of the domestic food assistance programs is whether they prevent childhood hunger and other food hardships. Regrettably, the answer is "no." The latest annual report on food insecurity in the U.S. (Coleman-Jensen et al. 2012) estimated that in 2011, 11.5 percent of American children lived in households with low food security among children and 1.5 percent lived in households with very low food security among children. The prevalence of these food hardships has fallen slightly since the depths of the Great Recession but remains higher than the prevalence before 2008.

These rates of hardship are not just a matter of the domestic food assistance programs failing to reach people. Coleman-Jensen et al. also reported high rates of food hardships among food assistance recipients. They estimated that in 2011, 23 percent of households receiving SNAP benefits, 17 percent of households receiving NSLP meals, and 14 percent of households receiving WIC vouchers reported having very low food security. Nord (2009) similarly measured high rates of very low food security among children in households that received different types of food assistance benefits.

If the U.S. food assistance programs do not prevent all instances of child hunger and food insecurity, do they at least reduce these problems? Conceptually, the answer should be clear—by expanding households' budget sets and food resources, the programs should reduce food hardships. Surprisingly, however, empirical evidence regarding this common-sense prediction is equivocal. Simple descriptive comparisons of program participants and non-participants by Coleman-Jensen et al. and by other researchers indicate that food problems are *more prevalent* among households that receive food assistance than among other poor or near-poor households.

Numerous empirical studies have investigated these relationships more carefully, including studies with multivariate controls and quasi-experimental designs. Comprehensive reviews have been written by Barrett (2002), Caswell and Yaktine (2013), Colman et al. (2012), Currie (2003), and Fox et al. (2004). Consistent with expectations, studies have typically found that participation in food programs and higher program benefits are associated with greater food expenditures and more food availability. Evidence regarding associations of the programs with food consumption and nutritional outcomes is more equivocal, although there are many examples of studies with positive findings, especially for the WIC program.[4]

As the report's opening quote from Nord and Parker (2010) indicates, evidence regarding associations of the programs with food insecurity is more equivocal still. Researchers have long recognized that selective participation in food assistance programs can lead to counter-intuitive findings, and some studies that have attempted to address biases from selection have found negative associations between food assistance and food hardships. For example, Borjas (2004), who used the natural policy experiment of immigrant assistance exclusions in the 1990s, DePolt et al. (2009), who used longitudinal comparisons, and Yen et al. (2008), who used instrumental variables methods, each found the hypothesized negative associations. However, other sophisticated studies, such as Wilde and Nord (2005), who used longitudinal methods, and Gundersen and Oliveira (2001), who used instrumental variables methods, found insignificant or positive associations.

Programmatic gaps

The evidence that children are experiencing hardships and that hardships occur even among food assistance recipients should lead us to consider features of the domestic programs that could be improved. There are several general features of means-tested assistance programs that can impact their effectiveness. One feature is amount of program benefits, an issue that is especially salient for the SNAP and is currently being studied by the NAS Committee on Examination of the Adequacy of Food Resources and SNAP Allotments (Caswell and Yaktine 2013). As mentioned, maximum SNAP benefits are set each year based on the cost of the USDA Thrifty Food Plan, which is a basket of foods that can be obtained at low cost but still provide a nutritious diet. Given this definition, pegging SNAP benefits to the TFP should lead to adequate food assistance; however, there are some acknowledged limitations. For one thing, SNAP benefits are set annually using a TFP value that is lagged by several months. Inflation over (a) the months between when the TFP is calculated and the benefit maximum is set and (b) the course of the year while benefits are fixed erodes the real value of SNAP benefits, causing them to fall below contemporaneous TFP values. The TFP also relies on strong assumptions about households' capabilities and time availability. For example, the TFP is based on many meals that require substantial amounts of preparation and cooking. The underlying time assumptions may be unrealistic for households with working or disabled parents, and SNAP benefits could be inadequate if these households have to consume more expensive, prepared foods. Third, the TFP, which is the least expensive USDA food plan, leaves little margin for errors or other problems, such as unexpected losses of food from utility disruptions, appliance break-downs, or pest infestations. Finally, SNAP benefits are predicated on an assumption that low-income households will spend roughly one third of their disposable income on food and that households

[4] Besharov and Germanis (2000), however, have criticized the methodologies of many WIC studies and have argued that the evidence of its effectiveness is weak.

will have other resources to take care of their non-food needs. However, there are millions of households for which this is not true. Strayer et al. (2012) estimated that 20 percent of SNAP households (4.2 million) in 2011 had no countable income at all and a further 23 percent (4.7 million) had countable incomes that were less than half of the federal poverty guidelines. Among households with children, 12 percent had no countable income, and 34 percent had incomes that were less than half the federal poverty guidelines.

Another general feature of assistance programs is their coverage. For example, non-citizen immigrants are generally prohibited from receiving federally-funded SNAP benefits and thus are uncovered. Other people, including felons and people with drug convictions, are also excluded. Some people also lose eligibility for SNAP if they fail to meet work or training requirements. The non-entitlement status of WIC means that some households might not be covered even if they are eligible. There are other dimensions of coverage. For example, the NSLP and SBP provide meals on school days but do not "cover" meals on weekends or holidays. WIC vouchers and SNAP EBT amounts can only be used at authorized retail establishments. Because of this, purchases of otherwise eligible food items might not be covered at local stores that are not authorized.

A third feature of assistance programs that impacts effectiveness is the take-up of benefits. Eslami et al. (2012) estimated that 51 million Americans were eligible to participate in the SNAP in FY 2010 but that only 38 million, or 75 percent, had actually joined the program. As previously discussed, participation in the SBP is only about one third the level of participation in the NSLP. Currie (2004) has reviewed research on program take-up and offered three principal explanations for incomplete take-up. First, people may lack information about potential program services or about how to apply. Daponte et al. (1999) found that clients of food pantries were more likely to apply to the SNAP if they were presented with information about the program. Second, the paperwork and procedures associated with applying for, complying with, and remaining on programs may deter participation. Ribar et al. (2008) found that SNAP households with children were several times more likely to leave the program in months when recertification forms and interviews were due than in other months; Ribar and Edelhoch (2008) found that other paperwork requirements also contributed to SNAP exits, and Ribar and Swann (2011) found that problems completing SNAP applications not only hindered the initial take-up of benefits but also predicted that households would experience problems remaining on the program. Third, as Moffitt (1983) has pointed out, the stigma associated with being on a program may act as a cost of participation. One reason that is often given for operating universal free SBPs is that they reduce the stigma for program participants. Crepinsek et al. (2006), Haldeman and Ribar (2011), and other researchers have found supporting evidence that the availability of universal free SBPs not only increases take-up among children who would otherwise have to pay for meals but also boosts participation among free-eligible children.

A fourth general design consideration involves the complexity of individual programs and of the safety net more broadly. The individual food assistance programs have their own eligibility rules, benefit sets, certification periods, and compliance criteria, which can be overwhelming. Categorical eligibility provisions eliminate some of the barriers between programs but not all. More generally, the U.S. social safety net relies on a host of specialized in-kind programs, including the Low-Income Home Energy Assistance Program to help with utilities, Medicaid and the State Children's Health Insurance Program to help with medical expenses, and rental subsidies to help with housing. Taken together, the different programs potentially provide a lot of assistance, but they also require participating households to master

the application, use, and compliance details for each program. The complex web of services can make it difficult for households to take full advantage of the programs. The large number of programs may leave households vulnerable to a loss of benefits; at the same time, possible overlaps in services may lead to ineffective duplication.

There are also elements of household behavior that may affect program outcomes. As we discussed, an implication of economists' standard assumptions regarding parental altruism is that parents may substitute their own resources when government resources for their children are curtailed and may withdraw some of their contributions to children's well-being when government resources are expanded. This compensatory behavior would reduce the association between government assistance and children's outcomes. Also, in households with multiple children, targeted assistance that is provided to one child might either be shared by others or lead to compensatory reallocations among children by parents. Ishdorj et al. (2008), Long (1991), Rose et al. (1998), Ver Ploeg (2009), and Woodward and Ribar (2012) have found evidence of sharing. Sharing might reduce the effects of assistance for the intended beneficiary.

Evidence that some parents may lack some necessary capabilities raises other concerns. The SNAP and WIC rely on parents or caregivers to act as intermediaries who obtain and transform resources from the program and produce health and well-being outcomes for children. There are few fallbacks or work-arounds if parents fail in these roles.

A related issue is that some parents may be overwhelmed by the constellations of problems that they face. Joyce et al. (2012) have documented that food hardships rarely appear as the only problem in households. Instead, food problems often co-occur with hospitalizations and poor health of family members, housing insecurity, and energy insecurity. Households in such circumstances need food assistance but also need help with the other problems in order to produce better child outcomes. Ganapathy et al. (2005) have identified a broader problem of inadequate food systems, which not only include household problems but also problems in communities, such as reduced economic opportunities, neighborhood food resources, and emergency assistance. Qualitative research by Edin et al. (2013) points to additional complexities, including income and expenditure shocks and the availability of help from extended family and neighbors. Little of this complexity is captured in quantitative research.

Methodological challenges

There are many methodological challenges that empirical research on public food programs and children's hunger must overcome. An initial series of challenges involves the available outcome measures describing children's food hardships. First, the low incidence of measured severe hardships—recall that Coleman et al. (2012) estimated that only 1.5 percent of U.S. children live in households with very low food security among children—greatly reduces the statistical power of quantitative analyses. Thus, estimates in these analyses tend to have large sampling variances and are frequently not distinguishable from critical values or other estimates. Problems with statistical power are compounded in multivariate analyses that use many controls and in disaggregated analyses. An additional implication of the low incidence of a binary measure, such as the very low food security among children indicator, is that it raises the risks of sample separation in which there is no variability in the outcome measure for particular values of the conditioning variables.

Second, there are weaknesses in the most widely used instrument for food hardships—the Household Food Security Survey Module (HFSSM). The NAS (2006) has identified several

problems. Most critically for research on child hunger, food security is a household outcome, and the HFSSM measures hardships at a household level. However, hunger is an individual outcome, and the HFSSM lacks individual measures. The HFSSM also does not capture other relevant hardships, such as problems with the supply, safety, or quality of food. The NAS has also recommended using richer models to develop food hardship scales, including separate models for households with and without children. It has also cautioned that surveys, such as the Current Population Survey, are often based on household sampling frames that omit institutionalized and homeless people.[5]

Third, there are some special limitations of the HFSSM for measuring children's hardships. Respondents to the module are usually parents, whose answers might be especially prone to social desirability bias and might therefore under-report problems. Fram et al. (2011) have also questioned the ability of parents to report on their children's behalf. Additionally, the HFSSM uses several screens that prevent some child-focused items from being asked unless other hardships are affirmed. These screens are helpful in keeping some respondents from being asked unnecessary questions and in reducing certain types of reporting errors. However, they can contribute to other types of reporting errors and have the effect of reducing the measured incidence of hardships.

Fourth, researchers rarely utilize all of the information that is contained in the HFSSM. Most studies use a binary indicator for a particular threshold of hardship, such as an indicator for very low food security. Richer sets of responses can be modelled. For example, DePolt et al. (2009) and Wilde and Nord (2005) have estimated behavioral item response models, but these studies are exceptions. An advantage of these alternative specifications is that they are more efficient and have more statistical power than simpler specifications.

In addition to the problems with the food hardship outcome measures, quantitative analyses also face problems with the food assistance receipt measures. As with the hardship measures, statistical power is a vexing issue. Food program participants are a fraction of the population, and the number of eligible but non-participating comparison households is also fractional. Thus, studies using general population data, such as the Current Population Survey, quickly are down to very modest sample sizes. Effective sample sizes become even smaller in studies that (appropriately) attempt to account for multiple program use and for interactions among programs. Another difficulty in these studies is that program status is frequently misreported either because of stigma and social desirability issues or because of recall errors and misunderstood questions. The measures of program use are often crude (e.g., binary measures of current program receipt) and not carefully aligned with the reporting window for hardships (e.g., comparisons of current program use with hardships over the previous year). Standard measures of program participation seldom consider other important dimensions, such as the amount and duration of benefits, the provision of education and other non-food benefits, and threatened and actual disruptions in benefit receipt. The qualitative research by Edin et al. (2013) indicates that benefit disruptions may be especially consequential. Finally, studies rarely consider which household members are receiving benefits, overlooking issues associated with targeting and disqualified individuals.

Another huge methodological challenge is households' self-selection into program participation. Food program participation is not randomly assigned; take-up requires several active and possibly time-consuming steps. Some households are more likely to take these steps

[5] Wehler et al. (2004) found that homeless children face an especially high risk of hardships and have unique vulnerabilities.

and to successfully enroll in programs than others. For example, households with greater food needs have stronger incentives to apply for assistance than other households. Households with more education or more bureaucratic savvy are more likely to be successful in their applications. Families in stable living arrangements have an easier time complying with program rules and receiving program information than families in unstable situations. The challenge in quantitative analyses is that these conditions and circumstances (along with myriad others) are also likely to contribute to children's food insecurity and hunger. Multivariate analyses include explanatory variables in an attempt to control for the influence of these characteristics. However, any relevant characteristics that are omitted, incompletely measured, or unmeasureable could lead to spurious statistical associations between the food hardship variables and the program assistance variables.

There are statistical techniques that address different elements of the selection problem in observational data, and studies of food hardships are applying these techniques more frequently. Unfortunately, all of the techniques have limitations, and none is fool-proof. Some techniques, such as instrumental variables methods, require special data with particular properties. Others, such as fixed effects methods and propensity score matching, address some sources of bias but not others. Estimates of the associations between food program participation and food hardships differ markedly depending on the technique and data that are used. In addition, most of the techniques lead to estimates that are less precise than simpler models. The wide range of estimates and their high sampling variability leaves policymakers with little useful evidence regarding the effectiveness of the programs.

Random assignment experiments can also be used to overcome the issues associated with selection. Experiments have been conducted on a number of programs and program elements, including the provision of information to potential program clients (Daponte et al. 1999), universal free SBPs (Crepinsek et al. 2006), and cash rather than restricted benefits (Fraker et al. 1995). While experiments convincingly address selection, they do have other weaknesses. For example, it can be difficult to generalize the results to other settings or circumstances or to determine the general equilibrium effects. The experiments often occur in environments where subjects can get alternative services from existing programs. Also, there are ethical concerns about withdrawing potentially valuable services. So, most experiments marginally add or modify services and do not test the effects of a program as a whole. Finally, social experiments tend to be costly, limiting the number that can be performed.

One additional challenge that compounds all the others is participation in multiple assistance programs. Multiple program use is very common, particularly among households with children. Newman et al. (2011) estimated that about three-quarters of very poor children and about two-fifths of poor and near poor children participated in multiple programs. Families also often combine food program assistance with community food assistance (Mabli et al. 2010). Many families also make use of other types of cash and non-food, in-kind benefits. Despite these empirical realities, many quantitative analyses only consider programs in isolation, leaving the other programs as omitted but potentially confounding characteristics. Research by economists is especially bad in this regard. A desire to avoid the problems of multiple program use—reduced precision, more complicated measurement, and multiple sources of selection—is understandable. However, ignoring the programs leads to misspecification and omitted variables problems. More complete descriptions of households' resources are needed in quantitative research.

Recommendations

Developing better measures and using measures better. Measures of food hunger and hardships are the foundation of quantitative research on the effectiveness of food assistance programs. The HFSSM has supported an enormous volume of research, but its weaknesses in assessing hunger will hinder studies going forward. The USDA and the Census Bureau should continue investigating ways to improve and extend the HFSSM. One strategy for studying improvements would be to follow the example of some previous years of the CPS-FSS and use a "split-ballot" design in which most of the CPS-FSS respondents are asked the standard items from the HFSSM, while a minority are asked a version that includes most of the items (to allow examinations of comparability) but that also includes modified or alternative items.[6] This approach should be used on an on-going basis. Initial research could test hunger-related items from the Community Childhood Hunger Identification Project measure (see, e.g., Wehler et al. 2004) and questions developed from food pantry checklists (Bryant and Stevens 2006), which are less prone to social desirability bias. The HFSSM should also experiment with alternative reference time periods besides the 12-month recall window.[7] To encourage analyses of these data, the USDA should considering funding both a small grants program for researchers to use the experimental data in public-use files and at least one larger grant per year for researchers to work with restricted versions of the data at either the Census Bureau or one of the Research Data Centers.

In addition to better measures of hardships, better measures of program use are needed. Surveys should not only ask whether households participated in programs but also ask more detailed questions about who received the benefits, the duration of benefit receipt, and the specific forms of the benefits. Surveys should also ask about benefit disruptions. Where possible, survey information should be supplemented with administrative records.

Researchers also need to make more complete use of the existing measures, especially the food hardship items. Ordered categorical specifications of the number of affirmed items in the HFSSM and behavioral item response models of the joint set of HFSSM items, such as the behavioral Rasch model (Wilde and Nord 2005) and the multiple indicator multiple cause model (DePolt et al. 2009), use more of the available data and are more efficient than binary outcome models, while maintaining the assumption that food insecurity can be represented by a single underlying index. The increase in efficiency is necessary for testing hypotheses related to child hunger and for establishing the magnitudes of associations for policy analysis. As the studies by Wilde and Nord and by DePolt et al. also show, it is possible to extend these techniques to incorporate controls for selection bias.

It's a long way from Washington to children's stomachs. Research on policy responses to food hardships has frequently treated the SNAP and the other major food assistance programs as monolithic, federal entities that somehow contribute to household outcomes. Many studies of policy responses have overlooked the important roles that state governments, local governments, SFAs, and community organizations play in operating and shaping the programs and the important roles that parents and other household members play in transforming assistance into well-being outcomes for children. These are missed opportunities in several

[6] For instance, in 1998 and 1998 the CPS-FSS used a split-ballot approach to ask one-eighth of the sample alternative food security questions about particular (focal) adults and children instead all adults and children.

[7] The HFSSM asks about hardships in the last 30 days, but these are conditioned on responses to questions about the previous year.

respects.

With respect to the different levels of government, there is considerable jurisdictional variation in program services, rules, and availability that could form the basis for direct study or for instruments in endogenous variable models. Jurisdictional variation in program administration contributes to differences in coverage through its effects on participation and benefit disruptions. Jurisdictional differences might also reduce the comparability of programs. Also, because state governments, local governments, and school systems provide other services, they represent a source of confounding variation (e.g., state governments that are efficient or generous in operating food programs may have the same qualities in operating other programs).

Research on policy responses also needs to consider the processes that families use to care for and feed children. Problems with food skills, household and financial management, parenting practices, household information, and physical and psychological abilities have all been implicated as contributing to children's food hardships. Other "rational" household practices, such as parents' compensatory behavior, may also affect the relationship between food assistance and children's well-being. Research should look more closely at the processes that households use to produce children's nutritional outcomes and the threats and challenges to those processes. Also, because most food hardships are likely to be brief and episodic, these processes should be investigated longitudinally.

Complexity. Research needs to account better for the complexities in food assistance programs, the broader social safety net, and household circumstances. Food assistance, especially for families with children, involves several different public programs as well as public-private community providers. Although multiple program use is common, researchers often examine programs in isolation. Studies that do consider multiple program use rarely consider interactions among programs.

Researchers and policymakers need to be mindful that the food assistance programs are part of a broader safety net. The SNAP and other major programs have assumed a larger safety net role as other assistance programs, especially cash assistance programs, have been slashed. Many researchers have examined the relationship between TANF and food hardships; however, there have been fewer studies of the other in-kind programs. Also, the impacts of cash assistance cutbacks on the effectiveness of the food assistance programs (i.e., program interactions) need more study.

The effects of food assistance programs must also be considered in the context of numerous problems for low-income families that co-occur with food hardships (Edin et al. 2013, Ganapathy et al. 2005, Joyce et al. 2012; Kimbro et al. 2012). Families that are experiencing health crises and housing instability or living in neighborhoods without authorized SNAP or WIC retailers may not be use food assistance effectively, if they are able to participate at all.

Incorporating program and household complexity into quantitative analyses will make causal inference much harder. However, the complexity is there whether researchers include it or not.

Qualitative research. Qualitative methods trade depth for breadth. They are especially useful for peering into the "black box" of family processes, characterizing complex and hard-to-measure circumstances, and capturing unusual events. The studies by Fram et al. (2011) on household members' separate information sets and perceptions, Chilton and Rabinowitz (2012) on toxic stress, and Edin et al. (2013) on SNAP families' coping experiences all shed light on issues that would have been difficult to examine quantitatively. Much like the pairing of qualitative process analyses with quantitative impact analyses in demonstration studies, in-depth

qualitative interviews should be paired with quantitative survey questionnaires and administrative data in observational research.

Some policy alternatives. Recent changes in the social safety net have emphasized in-kind assistance and de-emphasized cash assistance. In-kind assistance has the potential to address particular needs and particular hardships, but it results in a complex set of programs (at least if assistance is going to be means-tested) that increase the burden for low-income families, increase administrative costs, and seem to increase the chances of some needs, including children's nutritional well-being, going unmet. There are at least three ways that we might be able to make things better.

A first approach would be to provide families with high-quality caseworker resources to help them navigate the complex program environment and more generally to help them manage complex adverse circumstances. The caseworker services would be individualized to each family's needs and circumstances. This approach could be especially useful for households that face multiple problems. Although the approach might be relatively expensive, it represents a best-case test of whether in-kind programs can be effective.

A second approach would be to recognize that some families, regardless of the assistance that is offered, are not going to be able to meet their children's food needs. Programs that expand services going directly to children, such as a substantial expansion of Kids Café model to cover evening meals and non-school-day meals, or that empower children to produce good nutritional outcomes on their own, such as training children to shop, prepare, and cook meals themselves, would directly address child hunger.

A third approach would be to reverse the overall policy direction and provide more generous cash assistance. Limited cash-out experiments have been run to test the effectiveness of SNAP benefits. An expanded experiment would provide cash assistance in lieu of multiple in-kind benefits—food, energy, and housing. This type of program would be simpler to administer and use; it would also provide families with more flexibility to address their own needs.

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Table 1. Federal Food Assistance Programs Helping Children, Expenditures, Type of Assistance, and Primary Beneficiaries

Program	Federal FY 2012 cost	General food resources	Specific foods	Increase HH efficacy	Targeted beneficiaries
Major food assistance programs helping children					
Supplemental Nutrition Assistance Program (SNAP)	$78.3 billion	✓		✓	no
National School Lunch Program	$11.6 billion		✓		school-age children
School Breakfast Program	$3.3 billion		✓		school-age children
Special Supplemental Nutrition Program for Women, Infants and Children (WIC)	$6.9 billion		✓	✓	mothers, children 0-5
Child and Adult Care Food Program	$2.8 billion		✓		pre-school- age children
Other food assistance programs helping children					
Commodity Supplemental Food Program	$208 million		✓		children, elderly
Food Assistance for Disaster Relief	$4 million	✓	✓		no
Food Distribution Program on Indian Reservations	$97 million		✓		no
WIC Farmers' Market Nutrition Program	$21 million		✓		mothers, children 0-5
Nutrition Assistance Block Grants	$2.1 billion	✓		✓	no
Summer Food Service Program	$398 million		✓		children
Special Milk Program	$12 million		✓		school-age children
The Emergency Food Assistance Program	$444 million		✓		no