Assessment and Surveillance of Child Food Insecurity and Hunger

Edward A. Frongillo[1], Eliza M. Fishbein[1], and Maryah S. Fram[2]

[1]Department of Health Promotion, Education, and Behavior
[2]College of Social Work
University of South Carolina

Correspondence
Edward Frongillo, Ph.D.
Department of Health Promotion, Education, and Behavior
800 Sumter Street, Room 216
University of South Carolina
Columbia, SC 29208
Telephone: 1-803-777-4792
Facsimile: 1-803-777-6290
Email: efrongillo@sc.edu

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1. Introduction and Aims

Household food insecurity is associated with poor child physical, psycho-social, and educational development (National Research Council, 2006; Cook et al., 2006; Cook et al., 2013). These associations have been found both in the small proportion of households in which parents report that children do not always have enough to eat and among food-insecure households more generally (Jyoti et al., 2005). The knowledge that we have about these associations, and the attention that has been brought to food insecurity and hunger in the U.S., have been made possible by the availability of assessment instruments and data-collection systems established over the past 20 years. The aim of this paper is to address what we know about the adequacy of the current assessment and surveillance system, in both conceptualization and implementation. The paper specifically addresses:

- Does it capture key dimensions?
- Are we missing important populations?
- Does it adequately describe the experience of all members of a household?
- What should be done to improve it?

In addition, the paper considers how research and program demonstration funds should be invested to enhance and augment the current assessment and surveillance system.

2. Conceptualization of household food security

The definition of food security that has been used in the U.S. since the beginning of the national surveillance effort is "access to enough food for an active, healthy life" (Anderson, 1990). Food security "includes at a minimum ready availability of nutritionally adequate and safe foods and assured ability to acquire acceptable foods in socially acceptable ways". When the national surveillance effort began, food security was conceptualized as being one of the core concepts related to nutritional state (Figure 1).

Qualitative research has established that the experience of household food insecurity in the U.S. involves four domains: quantitative, qualitative, psychological, and social (Radimer et al., 1992; Hamelin et al., 2002; Wolfe et al., 2003). The quantitative domain involves the amount of food accessible by the household, and ranges in severity from food depletion (i.e., low food stocks but adequate energy), to having to eat less food than usual, to one or more days without food (i.e., hunger). The qualitative domain refers to the quality of food accessible by the household, and ranges in severity from having to buy and eat less-preferred foods (not considered food insecurity in the U.S.), to having to eat a nutritionally inadequate diet, to not being able to eat the right food and meals for health. The psychological domain refers to knowledge and perceptions of the food situation and how people feel about it. It has two sub-domains: 1) feelings of worry and anxiety caused by an uncertain food situation and not having the right foods for health, and 2) feelings of deprivation and depression caused by a lack of food choice and the need to make compromises. The social domain refers to the social acceptability of food acquisition and management strategies, and it also has two sub-domains: 1) accessing food in socially unacceptable ways (e.g., food pantry, having to ask others for food or meals, borrowing money for food, and buying food on credit), and 2) socially or culturally less normative patterns of eating.

This qualitative research along with the quantitative research that has been done in the past 15 years has led to a revised conceptualization of household food insecurity as having both nutritional and non-nutritional pathways to well-being (Figure 2). In this conceptualization, food

insecurity refers to uncertain, insufficient, or unacceptable availability, access, or utilization of food (National Research Council, 2006). The experience of household food insecurity includes some closely linked consequences: hunger, distress and adverse family and social interactions, worry and anxiety, and feelings of deprivation and alienation.

Conceptualization and assessment of household food security has been based on a prioritization of mothers' perspectives. Mothers were considered to be the food decision-makers and primary actors in acquiring and managing food, and therefore more knowledgeable about the household food situation. When food insecurity occurs in the household, mothers try to provide sufficient quality and quantity of food and emotional support around eating, managing their children's experiences. Consequently, most of what we think we know about child food insecurity has been based on reports from mothers, including that food security is a household-level issue involving a managed process and that parents sacrifice and try to buffer children against suffering (Radimer et al., 1992; Wehler et al., 1992).

Recent research shows that mothers are often not fully successful at protecting children, and lack complete information about their children's experiences. Qualitative studies tapping children's experiences of food insecurity reveal that children are aware of food insecurity and that they take responsibility for it (Fram et al., 2011; Bernal et al., 2012). Children can be cognitively, emotionally, and physically aware of household food insecurity, and they take responsibility for food insecurity by participating in parental responses, initiating responses, and generating resources (Table 1). Flowing from these child experiences, protection is attempted in multiple directions: parents to children, parent to parent, children to parents (especially mothers), and children to children (especially from older to younger). Protection is also attempted in different forms, e.g., eating less so that someone else can eat more, pretending not to be hungry so that someone else will not worry, or hiding efforts to save or stretch food so that someone else will believe they are managing resources successfully. One consequence of multi-direction efforts at protection is that no family member has complete information about any other member's experience of food insecurity.

Emerging from this qualitative research is a new conceptualization that considers food insecurity as a dynamic and connected set of distinct experiences within a household. From this conceptualization, it is helpful to understand mother, father, and child narratives about food insecurity as, in part, expressions of idealized roles and myths, i.e., shared beliefs (Frongillo, 2013). Mothers see themselves as the food and household managers, striving to protect children. Fathers see themselves as the household providers, striving to protect their wives and children. Children see themselves as active contributors, striving to protect other children and parents (including protecting the myth that parents are protecting them). Each family member interprets and reports on the household food situation through the lens of their idealized role.

3. Assessment and measurement

To assess means to determine the importance, size, or value of some characteristic of interest. For this paper, the characteristic of interest is food insecurity or some aspects of food insecurity. That is, we would like to determine for groups of households or individuals, or perhaps separate households or individuals, the extent or "size" of food insecurity. We use indicators to demonstrate the characteristic (or identify those with the characteristic). Indicators are important for providing a means to differentiate those with and without a characteristic, leading to estimation of prevalence, for example.

Indicators can either be obtained directly from a tool or instrument or be derived from one

or more measures (Figure 3). An example of the former is the presence or absence of cough, which is an indicator of upper respiratory infection. An example of the latter is the use of body mass index greater than 30 as an indicator of obesity in adults; this indicator is derived by measuring weight and height, calculating body mass index, and then imposing a cut-point of 30.

Measures assign numbers to represent whether a person or thing is higher or lower on a characteristic of interest; measures are obtained through the application of tools or instruments (Frongillo, 1999). When data are collected from a questionnaire, often a scale is developed to be used as a measure. Item response theory is used as a methodological justification (National Research Council, 2006). In item response theory, it is assumed that a scale comprised of multiple items has greater reliability than a single item. If a scale with one dimension is developed (as is often done), it is assumed that there is one underlying construct and that the frequency of affirmation is a function of severity (i.e., severe indications occur infrequently).

Four options are possible for constructing indicators from measures (Frongillo et al., 2004). One is to create a scale and report the average. This option has been used, for example, to track longitudinal changes in household food insecurity over seasons during the implementation of a food-security development project in northern Burkina Faso (Frongillo and Nanama, 2006). The pre-harvest seasons (July) from 2001 to 2003 had higher food insecurity (scale scores of 10.7, 7.5, and 6.2) whereas the post-harvest seasons (January) had lower food insecurity (scale scores of 4.9 and 4.5). A second option is to create a scale and construct ordinal categories by making cut-points on the scale based on the statistical distribution of scale scores. This option results in ordinal categories that are not tied to meaning of items. An example is dividing a food-insecurity scale into quartiles based on scale scores, and labeling the four categories as none, mild, moderate, and severe. In this option it does not matter which items are affirmed, just how many. A third option is to create a scale and construct ordinal categories by making cut-points on the scale based on the specific meaning of items. A fourth option is to construct nominal categories based on the specific meaning of items, not using a scale (i.e., not using item response theory). The prevalence of categories will depend on which option is used. For example, option 4 will generally result in a higher prevalence of severe categories as compared to option 3, as illustrated for northern Burkina Faso in Table 2.

Measures and indicators are valid if they are suitable for providing useful analytical measurement for a given purpose and context. Several purposes are possible for assessment of both *groups* of households or individuals or *separate* households or individuals (Table 3).

4. Current assessment method for food insecurity in U.S.

The U.S. Household Food Security Survey Module (HFSSM) was first deployed in 1995 (Hamilton et al., 1997). For groups of households, it was intended for the purposes of estimating prevalence of food insecurity and monitoring changes in prevalence overall and for different groups. The HFSSM has also been used for other purposes for groups of households: determination of causes and consequences in many research studies and evaluation of the impact of interventions or programs (Frongillo and Wolfe 2010). In addition, this assessment method has been shown to be valid for screening and diagnosis of food insecurity for separate households (Frongillo et al., 1997; Wolfe et al., 1998; Frongillo, 1999; Frongillo and Nanama, 2006).

The current U.S. assessment method focuses on food insecurity as a household-level phenomenon (including adults and children), and it differentiates food insecurity vs. security assuming money as the constraint to food access. The HFSSM contains a mixture of statements and questions, including items referring to the household, adults, and children. Recalling the

foundational understanding that food insecurity has quantitative, qualitative, psychological, and social domains (Radimer et al., 1992; Hamelin et al., 2002; Wolfe et al., 2003), the HFSSM covers some but not all the domains of household food insecurity. There are many quantitative items, few qualitative items, and one psychological item on worry and anxiety. There are no items on deprivation or alienation and no items on social unacceptability of means of acquiring food or socially less normative patterns of eating.

The HFSSM was constructed as a scale that assumes a single underlying construct (i.e., one dimension) and that frequency is a function of severity. From a larger pool of items, the items ultimately included in the scale were those that fit the assumption of a single dimension (Hamilton et al., 1997). Three indicators (of food insecure without hunger, food insecure with moderate hunger, and food insecure with severe hunger) were formed by establishing ordinal categories using cut-points on the scale based on the meaning of items (i.e., option 3 from section 3). After recommendations of the National Research Council (2006), the categories were re-labeled as low food secure and very low food secure, suppressing the meaning of the items.

5. Current assessment system

The HFSSM has been included in several national surveys (Table 4). These surveys typically interview one respondent per household, with the respondent being over the age of 15 with no upper age limit. The surveys exclude military households, institutionalized people (i.e., prisoners, long-term hospital care, or nursing home), and those living abroad. These national surveys using the HFSSM are nationally representative of the population excluding the groups listed above. The National Health Interview Survey oversamples African Americans, Hispanics, and Asians, and the National Health and Examination Survey oversamples persons over 60 years of age, African Americans, and Hispanics. The Current Population Survey Food Security Supplement notes that full-time students are to be treated the same as non-students. The Early Childhood Longitudinal Surveys were nationally representative including children with disabilities and special needs, and oversampled for twins and infants born with low and very low birth weight.

Non-national surveys examining food security have often focused on populations that are excluded or under-sampled from the national surveys, including individuals who are homeless and marginally housed (Dachner et al., 2002; Holland et al., 2011; Whitbeck et al., 2006), have a chronic disease (e.g., HIV, diabetes) (Normen et al.,2005; Seligman et al.,2007; Seligman et al.,2010; Weiser et al., 2009), are full-time students (Chaparro et al., 2009), young mothers (Stevens, 2010), Native Americans (Gundersen, 2008), Pacific Islanders (Derrickson et al.,2000; Furness et al., 2004), and immigrants (Borre et al.,2010; Quandt et al.,2006; Weigel et al.,2007). The nation's largest hunger-relief charity, Feeding America, has taken an interest in child hunger and has conducted a variety of hunger studies to inform decisions made about how food is given to those in need (Feeding America, 2009).

One of the challenges in the current assessment system is that the sample size available in surveys of children experiencing hunger is too small to be able to conduct research on causes and consequences or subgroups, even in the largest surveys. For example, in the December 2011 Current Population Survey Food Security Supplement, out of 53,439 respondents to questions asking about lack of food or money in the last 12 months, 270 respondents affirmed cutting the size of children's meals, 177 affirmed children being ever hungry, and 21 affirmed children not eating for a whole day (U.S. Census Bureau, 2011).

National surveillance is based primarily on the data from the HFSSM collected in the

Current Population Survey. In 2007, 15.8% of households with children were food-insecure, meaning that either adults or children or both were food insecure at some time during the year (Nord, 2009). Of food-insecure households with children, more than half (8.3%) had children who were food insecure (with either low or very low food security) at some time during the year. That is, in 2007, children were assessed as experiencing food insecurity in more than half of the households with children reporting food insecurity, consistent with recent understanding that children are often not protected from household food insecurity (see sections 2 and 6). Only 0.8% of households with children were assessed as very low food secure; about 4/5 of these households affirmed that a child had been hungry because the household could not afford more food, and the other fifth affirmed that a child had skipped a meal or not eaten for a whole day because there was not enough money for food. Recent results from the Economic Research Service using the Current Population Survey data show that the prevalence of food insecurity among households with children was fairly steady from 1999 to 2004, dropped somewhat in 2004 to 2007, rose sharply in 2008 coincident with the economic recession (Nord, personal communication).

6. Direct assessment of children

The U.S. Department of Agriculture has available a child-report questionnaire that uses selected items adapted from the HFSSM for use with children 12-17 y (Connell et al., 2004; Nord and Hopwood, 2007). This questionnaire assumes that children and adults have the same experiences, and that adaptation of questionnaire items required only the use of different language (Fram et al., 2011). These items reflect adult concerns, problems, and ways of thinking (e.g., conditioning on money).

Poor agreement has been found between adult report of household food insecurity and adolescent reports using this questionnaire in NHANES, with adolescents‘ self-reported food insecurity more common than adult-reported food insecurity (Nord and Hanson, 2013). Similar poor agreement has been found in Ethiopia (Hadley et al., 2008), Venezuela (Bernal, 2011), and South Carolina (Fram et al., in press).

These results are consistent with qualitative research showing that in 16 households with food insecurity, lack of communication and parent-child efforts to protect each other resulted in parents having little knowledge of their children’s experiences (Escobar-Alegría et al., 2012). All 16 sample children had cognitive awareness of food insecurity, but only seven parents knew fully the extent of their children’s awareness, and another four had partial knowledge. For the 15 children with emotional awareness of food insecurity, eight parents were knowledgeable. For two children with physical awareness of food insecurity, no parents were knowledgeable. Of eight children initiating responses to food insecurity and one child generating resources, no parents were knowledgeable.

One of the limitations in interpreting disagreement between adult and child reports of child food insecurity is lack of information about which report is more accurate. This limitation has been addressed by Fram et al. (in press) in a mixed qualitative and quantitative study in which a definitive (i.e., highly accurate) classification of child food insecurity was developed based on in-depth qualitative interviews with each of 87 children. This definitive classification was used as a criterion to assess the accuracy of indicators from child and adult report of child food insecurity. For the sub-domains of cognitive, emotional, and physical awareness and initiation, child reported food insecurity had good-to-excellent accuracy, with areas under the receiver operating characteristic curves from 0.77 to 0.85. For the other two sub-domains, accuracy was poor, with areas of 0.64 and 0.66. For cognitive and physical awareness (i.e., the only two

sub-domains that could be tested), parent-reported food insecurity accuracy was poor, with areas under the curve of 0.61 and 0.65; parents failed to report more than half of the incidents of child physical awareness (i.e., hunger). For physical awareness, an indicator from child report was superior in accuracy to both the HFSSM and the child-referenced subset of items from it.

7. Improving assessment of child food insecurity and hunger

Household food insecurity is a powerful stressor and a marker of other stressors. Children often experience and are affected by household food insecurity through both nutritional and non-nutritional pathways regardless of parental intentions or beliefs otherwise (Frongillo, 2013). It is plausible that the non-nutritional pathways for household food insecurity lead to the most harmful effects on children, but there is no evidence to address this hypothesis because the current method and system do not assess most of the domains of awareness and responsibility that constitute children's experience of food insecurity.

Recent research has shown that children are accurate reporters of their own food-insecurity experiences, and parents are inaccurate reporters of their children's experiences, underestimating the incidence of their children's experiences. Therefore, the current U.S. parent-report system likely underestimates the prevalence of child food insecurity and hunger both because it does not assess most of the domains of child food insecurity and it underestimates the prevalence for the domain (i.e., physical awareness or hunger) that is assessed. Nevertheless, the current system in the U.S. using the HFSSM has proven highly valuable for monitoring prevalence of household food insecurity (i.e., its original intended purpose) and for conducting research that is relevant to policy regarding children.

Other systems that use accurate assessment instruments are needed to assess the ways in which children experience food insecurity, how many children have those experiences, which children have those experiences, and which actions will ameliorate those experiences. The most salient causes of food insecurity in children are lack of money (i.e., a major cause), parental physical and mental health, transportation barriers to accessing food in stores or sources of food assistance, parent work demands and schedule (e.g., not available to cook), and stigma. As discussed above, the most salient domains are awareness (cognitive, emotional, and physical) and responsibility (participation, initiation, and resource generation).

To identify and respond to child food insecurity and hunger--to act to end child hunger in the U.S.--an assessment system is needed that builds on existing systems. For example, schools already respond formally and informally, and in some haphazard ways. Federal school lunch, breakfast, and snack programs provide a primary food source for many low-income children, yet little is known about the effects of these programs on children's diet quality or food security. Supplementing these formal programs, about 53% of teachers in a recent survey reported purchasing extra food to give to students without sufficient food to eat (Share Our Strength, 2012). Some schools also provide holiday food baskets, in-school food pantries, and food backpacks. Again, little is known about the effects of these approaches. Schools are a place where child food insecurity is seen (by teachers, staff, and other children), where children can get food, and where secrecy is important as children struggle to balance their need for food against the threat of stigma (Fram et al., submitted). There is a need to potentiate schools as system for identifying and responding to child food insecurity through education and training of school personnel, systematic attention to children's food-related problems and their coping mechanisms, and meaningful assessment and holistic response (Fram et al., submitted).

A public-health and systems approach is required in which other community systems augment school system responses. Schools only reach school-age children, and schools cannot operate effectively in a vacuum. Furthermore, food augmentation is often not best response, and sometimes can be harmful, potentially disrupting family roles and relationships and facilitating household reliance on low-cost, energy-dense foods that exacerbate risk for overweight and obesity. Holistic community assessment and response would support more nuanced, prevention-focused and sustainable systems to increasing child food security and overall food-related health. Such community-level approaches are shown to work to promote family wellbeing in other domains, as demonstrated by the U.S. Triple P System Population Trial (Prinz et al., 2009). In this trial, 18 counties were randomly assigned receive either the Triple P system or usual practices aimed at reducing child maltreatment. The project provided training for the existing workforce (>600 service providers) and universal media and communication strategies aimed at educating parents about healthy parenting and about child maltreatment. A multi-level response system differentially responded to parents with different levels of risk. The trial found large effects on reducing substantiated child maltreatment, out-of-home placements, and child maltreatment injuries.

Ending child hunger requires systems thinking, a public-health perspective, being realistic about the resources that are available and those that are needed, and regarding children and families holistically. Assessment instruments and systems are needed to directly and accurately identify children experiencing all domains of food insecurity. Such assessment systems should capitalize on observations made by professionals and other caring adults who work with children in schools, medical and social service settings, and throughout the natural helping systems in our communities. This will involve training school personnel, nurses, pediatricians, clergy, and other helping professionals to assess, identify, target, act, and monitor. It also requires the development of new resources for response, so that when a child with food insecurity is identified and his or her needs are assessed, the system can appropriately address what is happening for that particular child in his or her family system in a way that promotes food security and family functioning over the long term.

8. Recommendations

Investment of research and program demonstration funds should focus on how to enhance and augment the current assessment and surveillance system. We recommend that research funds address four priorities:

- Apply new knowledge about direct child assessment to obtain valid estimates of prevalence of child food insecurity across all domains of child food insecurity
- Use the resulting data to determine the causes and consequences of different domains of food insecurity, for different groups of children (e.g., race/ethnic, family structure, household income, household socioeconomic status, and benefit participation) in different resource contexts (e.g., rural vs. non-rural, proximity to different food sources)
- Examine the within-household dynamics related to different child experiences of food insecurity and different child outcomes, and examine which ways of managing food insecurity lead to the best outcomes (e.g., physical and mental health, academic, social and relational)
- Examine which types of responses lead to long-term improvement in well-being, not just reduced tendency to report food insecurity.

We recommend that program demonstration funds address three priorities:

- Develop, demonstrate, and institutionalize systems for identification, response, and monitoring of child food insecurity and hunger within dominant child-serving settings (e.g., schools, pediatrician offices, churches)
- Develop, demonstrate, and institutionalize community-level approaches to improving knowledge and skills for attaining food security using existing resources (e.g., nutrition, shopping, cooking, food production)
- Develop and foster diverse resources that can be used to respond to identified child and family needs, going beyond food augmentation and free-food programs to address underlying causes and the multiple domains of experiences of food insecurity.

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Figure 1. Core concepts related to nutritional state (Anderson, 1990).

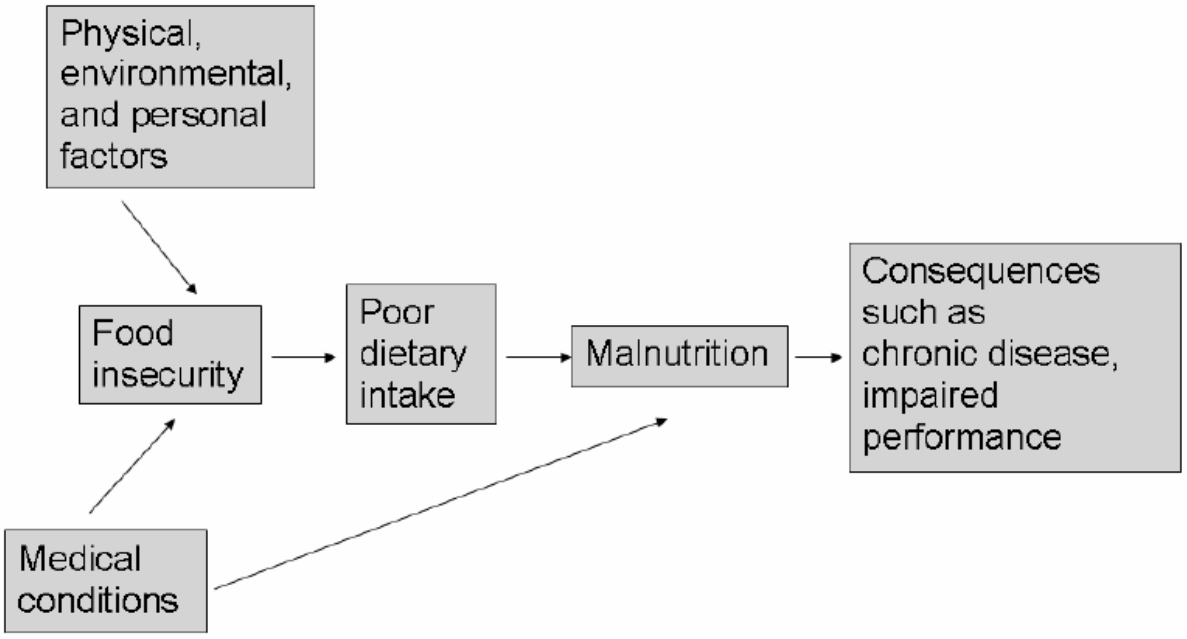

Figure 2. Conceptualization of food insecurity (National Research Council, 2006).

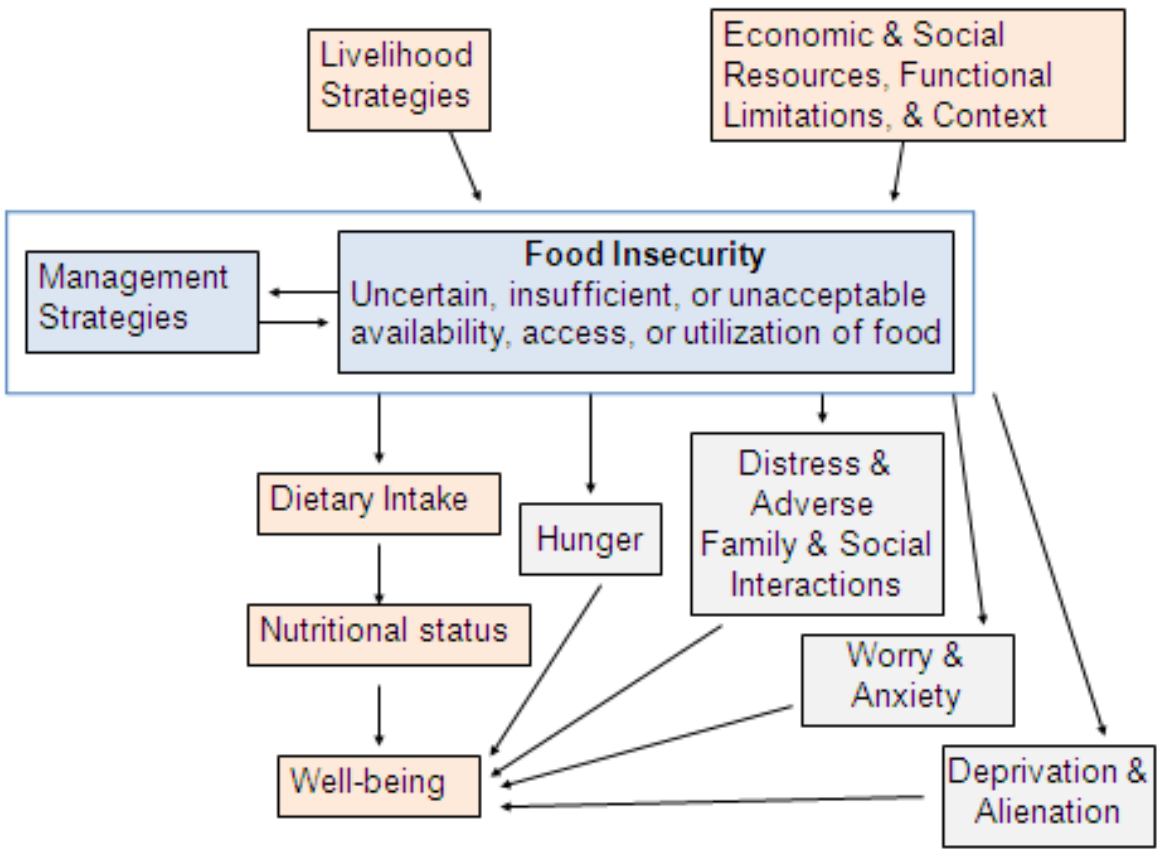

Figure 3. Application of items from a questionnaire to derive indicators for assessment directly and through use of measures.

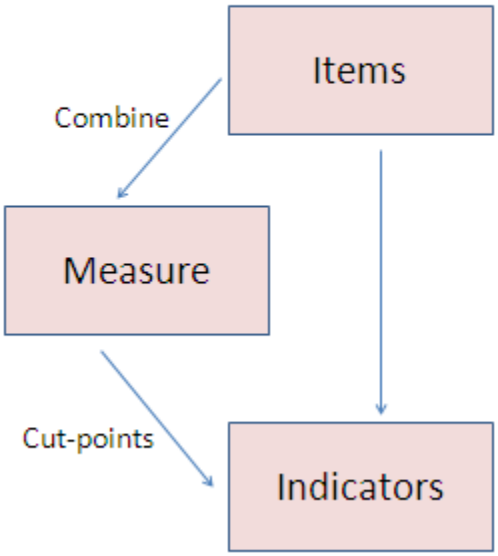

Table 1. Domains and sub-domains of child experiences of food insecurity (Fram et al., 2011; Bernal et al., 2012).

Domain	**Sub-domain**	**Description**
Awareness		
	Cognitive	Knowing about food scarcity and family challenges created by it
	Emotional	Feelings such as worry, sadness, or anger
	Physical	Physical feelings such as hunger, pain, tiredness, and weakness at home
Responsibility		
	Participation	Going along with adult strategies for managing scarce food resources
	Initiative	Initiating strategies to make existing food resources stretch
	Resource generation	Taking action to attain additional food or money for buying food

Table 2. Prevalence (%) of four categories of food security depending on the option used for constructing indicators (Frongillo et al., 2004).

Categories	**# of items**	**Option 3 Scale, specific meaning**	**Option 4 No scale, specific meaning**
Food secure		11	11
Uncertainty and worry about providing adequate food	2	45	33
Reduction of consumption or consumption of undesirable foods	5	40	43
Engagement in actions that compromise dignity or resilience	4	4	13

Table 3. Purposes of measures and indicators for groups and separate households and individuals (Frongillo, 1999).

Purpose	**Question**
Groups of households or individuals	
Estimation of prevalence	How many are affected?
Determination of causes and consequences	Why are they affected and what are effects?
Early warning	When is action needed?
Targeting	Who will receive which action?
Monitoring	How is the situation changing?
Impact evaluation	Has the action made a difference?
Separate households or individuals	
Screening	Is the household or individual at risk?
Diagnosis of problem	Does the household or individual have the problem, and what are the salient causes?
Diagnosis of solution	What is the most appropriate action?
Monitoring	How is the situation changing?

Table 4. U.S. national surveys providing information about child food insecurity and hunger.

Name of Survey	Timeline	Population	Assessment Tool	Level	Report Used In	Methods	Link
Current Population Survey Food Security Supplement	Annually since 1995	60,000 households, individuals 15 years and older, one person per household. Non-military, non-institutionalized. No upper age limit, full time students are treated the same as non-students.	CPS-FSS, CPS Children's and 30-day Food Security Data, labor force questionnaire	National, State	Annual Reports on household food insecurity, U.S. Census Bureau	Once yearly after answering the labor force questions, same households are asked the Food Security Supplement.	http://www.census.gov/cps/
Early Childhood Longitudinal Survey, Birth Cohort of 2001	Children born in 2001	14,000 children born in 2001 through kindergarten age, nationally representative sample. Children with disabilities included. Oversampling for twins and	HFSSM, parent surveys, early educational personnel surveys in several waves, ECLS-B	National	National Center for Education Statistics	Food security information collected from children, their families, their child care and early education providers, and their teachers across the U.S. The same children were	http://nces.ed.gov/ecls/birth.asp

		infants born with low and very low birth weight.				followed from birth through kindergarten.	
Early Childhood Longitudinal Survey, Kindergarten Class of 1998-99	1998-1999	22,000 children from kindergarten through 8th grade, nationally representative sample. Children with disabilities included. Oversampling for twins and infants born with low and very low birth weight.	HFSSM, parent interviews, ECLS-K	National	U.S. Department of Education, National Center for Education Statistics	Several waves collected - food security data were collected in the spring, parent interviews when the children were in kindergarten, 3rd grade, 5th grade, and in the fall parent interview when children were in the 8th grade.	http://nces.ed.gov/ecls/kindergarten.asp
National Health Interview Survey	2011-2012	35,000 HH with 87,000 Persons: One person per household. Non-military, non-institutionalized. Over sampling of Black,	HFSSM	National	USDA	Examined both the effects of long-term health problems and disability on food insecurity as well as the	http://www.cdc.gov/nchs/nhis.htm

		Hispanic, and Asian.				effects on more immediate health outcomes.	
Panel Study of Income Dynamics Food Security Files	1968-ongoing	5,000 families, 18,000 individuals: representative US sample, parents & beginning with children 0-12.	HFSSM, Children's Food Security Scale	National	3,000 peer reviewed articles, Institute for Social Research	U.S. individuals and families: main interview conducted on a regular basis 1968-1997 with basic demographic information, child development supplement survey, transition to adulthood survey, DUST, validation study, calendar methods study.	http://simba.isr.umich.edu/data/data.aspx
Survey of Income and Program Participation	1984 -ongoing	14,000-36,700 per national panel to be interviewed	HFSSM	National	U.S. Census Bureau	Data collected: source and amount of	http://www.census.gov/sipp/access.html

		multiple times. interviewed households member must be over 15 - multistage-stratified sample of the U.S. non-institutionalized, non-civilian population.				income, labor force information, program participation and eligibility, demographic information on effectiveness of existing federal, state, and local programs, estimate future costs and coverage for government programs. Food security status was based on responses to five questions from the HFSSM.	
Survey of Program Dynamics	1984-ongoing, food security status files available for 1998, 1999, 2000, 2001, and 2002	Households that had been interviewed in SIPP	HFSSM	National	U.S. Census Bureau	Designed to monitor and assess outcomes of welfare program changes that started in	http://www.census.gov/spd/access.html

						1996.	
National Health And Nutrition Examination Survey	1956- ongoing	Representative U.S. population: oversampling of persons 60 years and older, African Americans, Hispanics. Non-institutionalized civilian population.	HFSSM, Food Security section (FSQ)	National	CDC	Since 1999 - NHANES has assessed household food insecurity using the HFSSM. Individual-level food security items for adults and children were added in 2000, and for adolescents in 2005.	http://www.cdc.gov/nchs/nhanes.htm