

Definition of Food Insecurity

A widely accepted definition of food insecurity is “the lack of consistent access to the foods necessary for an active lifestyle” (Kersten et al. 2018). This official definition of food insecurity was developed in 1995, for the Current Population Survey, in response to the claims that the definition of hunger was not specific enough in meaningful ways. In fact, the creation of a new way to measure food insecurity introduced the idea that people on the margins of hunger also struggle to be healthy (Radimer 2002).

Though the two are often conflated, food insecurity and hunger differ. On one hand, hunger refers to the physiological sensation of not having enough food (Aiga 2015). Food insecurity (F.I.) encompasses more than simply this experience. Without the understanding that food insecurity includes the people who worry for the next meal, the interventions to combat hunger were falling short of addressing some of the key issues. F.I. is a measure developed by the federal government to better understand poverty and to assist those without access to food (Kersten et al 2018). Through the stress that F.I. puts on parents and indirectly their children, food it can lead to its own negative cognitive effects, as well as so-called behavioral effects.

Another important aspect of F.I. is that it is a Social Determinant of Health (Kersten et. al 2018). This means that it is an issue which impacts entire communities (Kersten et. al 2018). It is a systemic issue which has implications for the health of individuals. Therefore, the policy implications of how to address the issue carry particular importance for health outcomes.

There are a few ways that the definition of food insecurity is categorized—some categories speak to the severity and others speak to the type of food insecurity experienced. First of all, in terms of severity, households are considered food secure, marginally secure, insecure, or extremely insecure (Radimer 2002). However, research focused on experience shows that the top category is vastly different from the others (Jackson 2000). Secondly, it is categorized by how it operates in a household. For a household with children, the first phase is concern over having enough food, the second is consuming low quality food, the third is a parent skipping meals and the fourth is a child skipping meals (Jackson 2000).

Scope and Distribution of Food Insecurity in the U.S.

Today, F.I. is measured using intricate survey questionnaires conducted by the USDA. The findings from the most recent year the survey was conducted show that food insecurity is an issue for a notable portion of the American population, and that it is more prevalent among households with children. In 2016, 12.3%, or 15.5 million households in America were food

insecure. 16.5% or 6.3 million households with children were food insecure (Kersten et. al 2018). An important consideration is the lived experiences in the lives of people struggling to gain food security. The distribution of food insecurity shows that this is an issue that particularly affects children. 21.4 % of all children in America were food insecure in 2013 (Gunderson and Ziliak 2016)

Poverty as an Underestimated Risk Factor for Food Insecurity

The USDA measures the risk factors for being food insecure. The top largest risk factors were being in a low income household, which increased the risk factor by 31.60%, being a single woman with children, which increased risk by 31.60, and being in a black non-Hispanic household, which raised the risk factor by 22.50%. The national average food insecurity rate in 2016, when the Current Population Survey Food Security Supplement was taken, was 12.3. (Kersten et al. 2018). This shows that poverty is a predictor of food insecurity. Further, this effect is made larger for single mothers and black households with children (Kersten et. al 2018). This survey did not show the extent to which high levels of poverty among black households, among single mothers, and among black single mothers explain the effect of being in a black household or in the home of a single mother on food insecurity. However, a study of poverty rates in rural areas shows that the children of single mothers and young black children both face poverty rates of 50% (Bean et al 2010). Black children and children of single mothers face poverty at overwhelmingly high rates (Bean et. al 2010). This means that the USDA's findings about the potential risk factors for poverty does not fully capture the extent to which poverty mediates the effect of living in a black headed household or in the home of a single mother. That is, because both groups experience poverty at higher rates than their counterparts, poverty may explain the link between these two risk factors and poverty. Neither the USDA's report nor the survey on rural poverty interact the variables for being in black headed household and a single mother headed household.

Further research would have to be done on the effects of this for food insecurity. However, other research that shows that the interaction of these variables deepens the effect of poverty (Jackson 2000) would suggest that the combination of the two risk factors exacerbates poverty. Therefore, the effect of poverty as a risk factor as described in the report likely does not capture the full effect of poverty as a risk for food insecurity.

Further proof that poverty is the central predictor of food insecurity is the fact that food insecurity increased during the great recession from 2007-2008 (Gunderson and Zilak 2016). During this time, unemployment, and subsequently, poverty increased. Longitudinal measurements which begin at least a decade before the recession and continue into the present

show that the issue of F.I. increases where poverty increases (Gunderson and Zilak 2016; Coleman-Jensen et. al 2013).

How Poverty Specifically Functions in Terms of F.I.

It is often believed that two of the main driving factors behind food insecurity are access to food and ability to pay for food. In fact, in recent years, much has been made of the presence of food deserts and the contribution that they make to food insecurity (Walker 2010). Several researchers have pointed out that private transportation is a luxury that makes access to fresh food notably easier than it is without private transportation (Coleman 2010; Ma et. al 2008). Additionally, several public transportation proposals revolve around the idea of providing access to fresh foods (Walker 2010). However, further examination into the issue reveals that food insecurity exists at a high density by the household level, not by the community level. (Kersten 2018). This detail is one often overlooked in traditional considerations of F.I. In fact, even food secure communities are communities comprised of several food insecure households. This determination is not made by examining individuals. Further, densely populated urban areas with vast public transportation systems, still have households facing food insecurity. (Kersten et al 2018), even when nutritious food is accessible in terms of location and transportation. The fact that the presence of food does not alleviate food insecurity shows that a lack of accessibility is not what gives food deserts their power. Poverty is what gives food deserts their power. Food deserts do not initiate the issue, instead, they only exacerbate it.

Affordability of nutritious foods

One of the most prominent conversations in current literature over food insecurity is the issue of food deserts (Radimer 2002; Aiga 2015; Kersten 2018). Food deserts, which can occur in rural or urban areas, are places where people do not have reliable access to healthy food (Widener 2018). This phrase describes places where affordable, reliable public transportation is not readily available and stores with fresh foods are not within walking distance to the surrounding residential areas (Widener 2018). This metaphor of a desert is used to explain how food insecurity happens. The intuition is that people in concentrated poverty tend to live in food deserts and that food deserts restrict access to produce. Therefore, people turn to the fast food that is in walking distance, and experience the negative consequences for health of eating a fast food diet.

This framing of F.I. however may place too much emphasis on the idea of accessibility to food. In this view, distance from healthy food would mediate the relationship between poverty and food insecurity. The housing circumstances caused by poverty would lead to a lack of access to

food, and thus, Poverty would cause food insecurity only to the extent that it causes people to live in food deserts. However, this relationship is not fully explained by being located in a food desert (Widener 2018). The poverty could likely have a causal relationship with food insecurity through several mechanisms beyond a lack of transportation or grocery stores (Widener 2018).

Further, this idea ignores the fact that the reach of F.I. goes beyond those who face poverty based on the national poverty line. (Kersten et. al 2018). Because this is an objective measure of poverty, it does not capture the many reasons people may not have reliable access to food (Kersten et. al 2018). Finally, those at the margins are often not included in the problem definition, yet have experiences closer to those on the lower bound than on the upper bound.

The problem of food insecurity, which is motivated primarily by poverty, is mediated by both income and health circumstances. Unsurprisingly, income is a reliable predictor of poverty in the sense that struggles with income are reliably connected to poverty (Radimer 2002) Parental income, which is influenced by employment status is often the most important deciding factor leading to food insecurity in children. For example, unemployment, underemployment, and the lack of a livable wage are all contributors to poverty (Radimer 2002), and therefore, food insecurity.

Additionally, the mental and physical health circumstances of a parent contribute to the food insecurity outcomes for children. Being in poor physical or mental health makes it difficult for parent to consistently attain the food their children need (Coleman-Jensen et. al 2013). Even if the food is available within a close range. Similar to the way in which income mediates the relationship between poverty and food insecurity, parental health mediates the relationship as well. The struggles that parents face with their health when in poverty impede food security, and thus partially help to explain the specific ways in which poverty motivates food insecurity. Finally, one way that health issues influence this problem is through the volume of time money and energy that addressing health issues requires. There is both a higher likelihood for negative physical and mental health circumstances in poverty, and a correlation between parent health status and childhood food insecurity.

As a whole, these analyses show that food insecurity is neither caused nor sustained by the presence of food deserts. While the concept of food deserts offers insight into how health issues related to food are exacerbated, it is not the singular concept in the discussion of food insecurity. In fact, densely populated provide the perfect counter-narrative. When food is accessible, but not affordable, it is clear that one of the chief issues is affordability. Without the ability to pay for food, the accessibility of the food doesn't matter. This finding is particularly policy relevant because in the last decade, there have been several calls for the financial investment of public

funds into transportation and the introduction of grocery stores into food deserts (Widener 2018). While these solutions do meet an immediate need, they leave the true cause of the problem unresolved.

Income and Employment

With the understanding that the affordability of food is the most important consideration in food insecurity, we can focus on the factors that prohibit people from being able to afford healthy food. In terms of childhood F.I., this begins with the income of the parent. (Kersten et. al 2018). There are several motivators behind low income, but the key ones are unemployment, underemployment, low wages within employment, and mental and physical health struggles (Ma et. al 2008).

Impacts on Children

Two of the main recurring effects of food insecurity from previous literature difficulties focusing in class as well developing interpersonal skills (Cook et. al 2014). Focus was determined through teacher surveys with several questions that covertly measured teachers' perceptions of students' ability to stay on task. It also measured perceptions of student contribution to the classroom environment, that is, whether or not they distracted other students as well. Cross-sectional studies of elementary-school children reveal that children experiencing food insecurity are consistently rated by their teachers having consistent difficulty completing tasks and communicating engagement with the class material (Cook et. al 2004).

Though these results were not localized to study a particular grade, the results were similar across all grades studied. Thus, this leads to the reasonable expectation that any variation in characteristics between the grades didn't have any effect on the outcomes. As a result, even though the individual effects are not given, we can assume that the effect for the whole is representative of part. However, this research does not encompass effects for children ages birth to five. We can glean general trends and learn meaningful information about food insecurity as a whole. However, if there are specific traits particular to that age group, further research is necessary to investigate it.

Additionally, these students were rated as having trouble interacting with other children (Cook et. al 2004). Because hunger is an aspect of food insecurity, this is compatible with the fact that two of the largest physiological effects of hunger are trouble focusing and irritability. Previous research has revealed that the main driving factors behind food insecurity are poverty and poor mental and physical health (Cook et. al 2004). Yet, poor health, poverty and food insecurity all

interact with one another in meaningful ways. For example, F.I. has negative health, which can have adverse effects on employment, thus income, and lead to further poverty—which itself drives food insecurity (Cook et. al 2004).

There are multiple levels of food insecurity and different effects may be felt at different levels. One of these levels is fear over having enough food, followed by lower quality of food, followed by parents not eating enough food and children not eating enough food. This feedback loop of poverty also mediates the relationship between food insecurity and academic outcomes. The poor physical health outcomes caused by hunger can also lead to missing school, which will have meaningful impacts on academic outcomes. The next level before parent's compromise on the food of their children, is typically to compromise on their own food consumption (Kersten et. al 2018). This leads to negative effects for children by decreasing the mental and physical health of parents. Children with parents suffering with mental health struggles are more likely to be insecure than other children, controlling for other effects of poverty. Additionally, employment is a major mechanism leading to food insecurity (Ma et. al 2008). Decreasing the health outcomes of parents jeopardizes their employment, which hinders the food security of the child.

Because the lack of fresh foods is a hindrance to child health, this level of food insecurity has some of the same expressions in terms of effects as hunger does. It, like hunger can cause cognitive struggles, developmental issues, and, perhaps most notably, poor physical health. Too often, nutrient-weak food is used only to keep people from hunger, therefore, it can underrepresent the effects of food insecurity, because on the surface, it shows to mitigate the issue of hunger. Yet, the physical effects are similar to those experienced when someone is hungry (Aiga 2013).

Finally, the highest level of food insecurity described is the fear that parents face that they will not be able to provide food for their children (Kersten et. al 2018). This leads parents to live in a constant state of fear. This fear can easily morph into “toxic fear” which can be passed onto their children (Kersten et. al 2018). This is the type of effect that leads to negative behavioral outcomes, and often poor academic outcomes.

Further, this hidden curriculum is set in a particular context. It is typically not responsive to differences in cultural backgrounds or socioeconomic status, for example. In this model that glorifies compliance to the behavioral system, deviance is punished whether it displays poor behavior or not. As such, it is difficult to disentangle the presence of behavioral issues from the perception of behavioral issues. This distinction does not matter because the result is largely the

same. Whether there is destructive behavior or simply noncompliance, behavioral issues lead to disciplinary action.

In early childhood education, as early as pre-school suspension is a possible consequence for not adhering to the rules of behavior. This presents a potentially dangerous pattern for those considered deviant. Often these children are removed from the classroom. Especially at a young age, being removed from the classroom disrupts the learning experience, often in irreparable ways. Thus, the toxic fear of this level of food insecurity leads to worse academic outcomes. However, this relationship is mediated behavioral issues

It is widely reported that children of color are disciplined at higher rates, in different ways than white children in school. In fact, black and Latino boys are sent out of the classroom for disciplinary reasons almost twice as often as white boys are disciplined in this way (Notelmeyer 2015). Researchers have attributed this discrepancy to the implicit bias towards Black and Latino children. This is based, partially on ingrained societal beliefs about black and Latino men in America, being portrayed as inherently aggressive. This is upheld by portrayals in the news, and explains one aspect of discrepancies seen in the criminal justice system. This operates in the schooling context by contributing to a disproportionate number of disciplinary actions and expulsions for Black and Latino boys.

Another way that this implicit bias operates is through the privileging of concerted cultivation in parenting over the achievement of natural growth. Researcher Annette Lareu finds that the experiences of children in the middle class often follow the pattern of concerted cultivation, through which parents are actively engaged in the front lines of their children's education (Lareu 2003). This is manifest through working with their kids outside of the classroom on academic endeavors, engaging them in extracurricular activities, and finally, and most notably, advocating on behalf of their children to teachers and school administration. On the other hand, parents in poverty often raise their children in light of the achievement of natural growth. In this method, not only do parents adopt a more hands-off approach to the minutia of their children's educational experience, they inherently leave the teaching role to the teachers.

Cognitive Effects

Poor cognitive functioning makes the processing needed in school more difficult. Poor development from lack of nutrients also contributes to poor academic outcomes for elementary

school aged children (Kersten et. al 2018) These findings for school aged children offer some insight into the impact that food insecurity in children birth to five would have on cognitive outcomes. There is no evidence to suggest that the effects for infants and toddlers function differently. In fact, if anything, the age of children makes these impacts more salient in their lives. This is because early childhood development is foundational to academic success.

Development processes are also exacerbated by hunger. When children do not have the nutrients they need to fully develop, they have a physiological reaction. Finally, the hunger that children in this third step face causes issues for physical health. This leads to a lowered immune system, making them more susceptible to illness and not able to fight these illnesses. This has a feedback effect on hunger. Financial struggles due to medical costs could lead to greater poverty. Poverty motivates people to sacrifice quality food in order to get some food at all. In this way, poverty is a mechanism which motivates food insecurity. Because food insecurity leads to adverse health outcomes, food insecurity is a mechanism for maintaining a seemingly inescapable feedback loop of poverty.

Behavioral Effects

Some of the lasting effects of toxic fear include greater irritability and weakened interpersonal social skills (Aiga 2013). On one hand, this could have tangible effects on children's ability to focus, take in and retain information. On the other hand, this could have the arguably larger effect of changing perceptions of behavior, which can still have difficult academic outcomes.

To put the alleged behavioral effects of toxic fear into context, it's important to understand the socialization of children in schools. Much of early elementary school education revolves around a hidden curriculum. This is a rigid set of rules of behavior, catered to the preferences of the teacher in creating the most ease. In these scenarios, the object of schooling is to encourage compliance. Deviance is punished as a character flaw. Taken together, these behavioral and cognitive affects, unsurprisingly have ramifications for academic success (Kersten et. al 2018).

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