

**AN ETHICAL EVALUATION OF FOOD INSECURITY AND ITS
EFFECT ON CHILD HEALTH IN URBAN SETTINGS AND A
DISCUSSION ABOUT AN ETHICAL OBLIGATION AS A HEALTH
CARE PROVIDER TO ADDRESS THE ISSUE**

A Thesis
Submitted to
the Temple University Graduate Board

In Partial Fulfillment
of the Requirements for the Degree
MASTER OF ARTS

by
Houston M. Curtis
May 2023

Thesis Approvals:

Dr. Kathleen Reeves, Thesis Advisor, Center for Urban Bioethics

ABSTRACT

Food insecurity affects 1 in 7 households with children and has worsened due to the COVID-19 pandemic. Food insecurity disproportionately impacts marginalized populations including households with children with a single parent (usually the mother), families with low socioeconomic status, and Black and Latinx families. Amartya Sen, an economist and philosopher, was a pioneer in viewing food insecurity as a social phenomenon rather than a natural phenomenon. Furthermore, he highlighted the role that economics, politics, and social norms play in creating and perpetuating the problem. Therefore, to address food insecurity, we must address the root causes, which include poverty, structural racism, and lack of social cohesion among others. Urban bioethics provides a lens to examine food insecurity through agency, solidarity, social justice, community collaboration, and structural competency. In this thesis, I will explore the history of food insecurity in the United States, disparities in who is affected, the impact on children's health, and how government, community, and healthcare programs currently address the issue. Urban bioethics offers more than just a perspective for understanding an issue; it provides guidance on how to address this multifaceted problem in an ethical manner. Therefore, I will also demonstrate that there is an ethical responsibility as a healthcare provider and system to address the issue and explore potential solutions and strategies that align with urban bioethical principles.

DEDICATION

I dedicate this thesis to my future patients.

As children, oftentimes your voices go unheard
and your agency can be limited.

I promise to spend my career empowering you
to realize that your voices matter and you matter;
with special acknowledgement of all my baby cousins.
You deserve to live a healthy, long, and fulfilling life.

ACKNOWLEDGMENTS

I would like to thank the Center for Urban Bioethics for providing me with the education and tools to serve and learn from the communities that I am most passionate to work with: those who are marginalized, underserved, and oftentimes targeted by the same systems that are supposed to care for them. Furthermore, I am grateful for the opportunity to engage in work related to child food insecurity, as it will guide my career as a pediatrician. I would also like to thank my thesis advisor, Dr. Kathleen Reeves. During my interview for Lewis Katz School of Medicine, Dr. Reeves recognized my desire to serve patients within the context of their social determinants of health and to combat systems of oppression, therefore, encouraging me to pursue this degree!

Lastly, I could never forget to thank my parents for modeling how to serve others and stand by my convictions despite the opposition. Thank you for your endless sacrifices and for leading by example.

TABLE OF CONTENTS

	Page
ABSTRACT.....	ii
DEDICATION.....	iii
ACKNOWLEDGMENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER	
1. INTRODUCTION	1
2. FOOD AS A SOCIAL PROBLEM: THE VIEWS OF AMARTYA SEN.....	5
3. FOOD INSECURITY IN AMERICA	7
4. FOOD INSECURITY AND CHILD HEALTH.....	15
5. HOW TO ADDRESS FOOD INSECURITY.....	19
6. ETHICAL EVALUATION	26
7. CONCLUSION.....	30
REFERENCES CITED.....	33

LIST OF TABLES

Table	Page
1. Household food security survey module to detect food insecurity status.....	8
2. Government programs currently in place to address food insecurity.....	19
3. Multi-tiered approach to addressing food insecurity.....	27
4. List of clinic-based programs and community collaborations for physicians.....	29

LIST OF FIGURES

Figure	Page
1. Food insecurity rate for different groups compared to the national average.....	13
2. Maslow’s Hierarchy of Needs applied to food insecurity	31

CHAPTER 1

INTRODUCTION

During my freshman year at Villanova University, I discovered my passion for encouraging nutrition and healthy habits for children. As part of the Let's Move Camp program, inspired by Michelle Obama's Let's Move Campaign against childhood obesity, I was able to lead a service initiative to improve the health of underserved children in inner-city Philadelphia. Every year on Martin Luther King Jr. Day of service, we invited children in grades 3-6 to campus to learn about nutrition and engage in physical activity. While this experience gave me the opportunity to educate children, parents, and teachers about nutrition and provide access to healthy foods and organized physical activity, it was only a one-day event that did not address the root causes of why families in inner-city Philadelphia struggle with nutrition and making healthy choices.

As I began medical school at Lewis Katz School of Medicine, I decided to pursue the Master of Urban Bioethics in order to gain a historical, societal, environmental, and political context to the health disparities experienced in underserved urban communities and develop a toolkit to address these disparities through community engagement and solidarity. Food insecurity has been a continual problem in the United States throughout its history, and while there has been progress, 1 in 7 households with children experience food insecurity with the highest rates seen in marginalized communities [11]. The root of food insecurity is multifactorial and includes poverty, unemployment, lack of access to healthy food, housing insecurity, and structural racism among more. Therefore, it has

remained a persistent public health concern that has only worsened throughout the COVID-19 pandemic.

The purpose of this paper is to examine food insecurity through the lens of urban bioethics. It will explore the historical context of food insecurity in the United States, the intentional factors that contribute to disparities in access to nutritious food, the negative impact on child health, and the various methods to address this issue. Urban bioethics offers more than just a perspective for understanding an issue; it provides guidance on how to address this multifaceted problem in an ethical manner. Therefore, this paper will also explore potential solutions and strategies that align with urban bioethical principles to improve food security in urban communities.

Definition of Terms

Food insecurity: “the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” [13]

Food security: “A situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets dietary needs and food preferences for an active and healthy life. Food security is often broken down into three components: availability (in an area), access (by a household) and utilization/consumption (by individuals)” [8]

Hunger: “The discomfort, weakness, illness or pain caused by a lack of food” [10]

Famine: “Extreme social upheaval with complete lack of food access and/or other basic needs where mass starvation, death and displacement are evident.” Famine is declared when Global Acute Malnutrition (GAM) exceeds 30 percent, Crude Death Rate (CDR)

exceeds two and at least 20 percent of a population receives less than 2,100 calories per day. It is the absolute exhaustion or inaccessibility of food in a given zone, for entire populations, possibly causing death in the short term” [8]

Food deserts: “neighborhoods that lack healthy food sources.” [13]

Social determinant of Health: “conditions in which individuals live, work, play, grow, and age” [13]

Poverty: “The minimum amount of income, as determined by the U.S. Government, that a family needs for food, clothing, transportation, shelter and other necessities. The federal poverty level is used to determine eligibility for food and nutrition assistance programs, including the Supplemental Nutrition Assistance Program” [10]

Malnutrition: “Acute malnutrition results in a below-average weight for height score and/or the presence of bilateral oedema and it reflects the current nutritional situation of a child. It is due to nutritional deficiencies (poor intake or absorption)” [8]

Urban: dense, diverse, and disparate

Bioethical Principles: Traditional bioethics focuses on the principles of autonomy, beneficence, non-maleficence, and justice. However, traditional bioethics is too narrow when considering marginalized and underserved populations.

Urban Bioethical Principles: Bioethical principles that value agency, solidarity, and social justice as key components in addition to the traditional principles. In urban areas, where populations are dense, racially diverse, and disparate, the principle of agency prioritizes the capacity to be healthy and make autonomous decisions based on the context in which the individual lives. Social justice focuses on equity rather than equality in the distribution of resources, recognizing that different circumstances means that

everyone begins at a different starting point and needs varying levels of resources and opportunities to reach an equal outcome. Lastly, solidarity is the understanding that the well-being of our community is a shared responsibility of everyone in the community.

CHAPTER 2

FOOD AS A SOCIAL PROBLEM: THE VIEWS OF AMARTYA SEN

As a first-year medical student, I remember learning about Amartya Sen during a talk given by Dr. Kathleen Reeves, who is a pediatrician and the director of the Center for Urban Bioethics department at Temple University. Amartya Sen, an economist and philosopher, is one of the earlier experts who influenced how we view food insecurity today. In his book, "Poverty and Famines: An Essay on Entitlement and Deprivation," Sen argues that food insecurity is not due to lack of food production and availability, but rather due to failure of "entitlements" to access food [18]. As one of the first philosophers to recognize food insecurity as a social phenomenon rather than a natural phenomenon, he highlights the role economics, politics, and social norms play in creating and perpetuating the problem [17]. He views food insecurity as a violation of the right to adequate nutrition and argues that both poverty and inequality contribute [18].

Sen also argues that hunger and food insecurity is a violation of human capabilities. He defines human capabilities as capability of "people to undertake valuable and valued 'doings and beings'. This can extend from such elementary capabilities as the ability to avoid undernourishment...to more sophisticated social capabilities such as taking part in the life of the community and achieving self-respect" [5]. Therefore, food insecurity represents a failure to fulfill the capability to secure adequate nutrition, but more importantly to have a healthy life.

Furthermore, a violation of this capability is a result of policies and societal norms that prioritize economic growth and individualism over well-being and solidarity. In

many parts of the world including the U.S, there is enough food to feed everyone, but the distribution is not equitable, leading to food insecurity and disparities. Therefore, food insecurity is not simply the lack of food, but instead the lack of equitable distribution, which is the lack of social justice through the lens of urban bioethics. This highlights the need to address the root causes of hunger, such as poverty, inequality, and political instability. The capabilities approach also recognizes that hunger has broader social and economic implications, because it affects not only the well-being of individuals but also how we function as a society. It is our collective responsibility to ensure that every individual has the capability to access adequate nutrition and lead a fulfilling life [5].

Pediatric food insecurity in urban spaces is a clear example of how urban bioethics most clearly outlines the specifics for the ethical argument of practitioner involvement of pediatric food equity. Transforming traditional bioethics into urban bioethics requires a shift in focus from individual rights to social justice, from informed consent to community collaboration, and from cultural competency to structural competency and cultural humility. Urban bioethics challenges traditional bioethics by examining value concerns in a heterogeneous setting, addressing questions of equity and disparity, and broadening its focus to include the interests of family, community, and society. Urban bioethics utilizes capability theory, emphasizing the primary moral importance of freedom to achieve well-being and people's real opportunities to do and be what they have reason to value. The approach of urban bioethics involves engagement and social action, with a local and grounded perspective and a focus on narrative ethics, which involves witnessing. Here I will argue how these principles are evident in the argument for food equity in urban communities.

CHAPTER 3

FOOD INSECURITY IN AMERICA

Food insecurity was not acknowledged or measured as a public health issue before the 1690s and it was not until the 1968 documentary "Hunger in America`" that the issue gained public attention [13]. In the 1980s, the economic climate and media coverage brought more focus to the problem, leading President Reagan to establish a task force to study the prevalence of hunger and the effectiveness of national food assistance programs. The resulting 1984 report found that while personalized undernutrition was not widespread in the US, a larger social phenomenon of occasional inability to access adequate food existed. The report emphasized the need for direct, objective measures of hunger rather than the traditional indirect measures of poverty and unemployment rates as substitutes. In 1990, the Life Sciences Research Office of the Federation of American Societies for Experimental Biology created a seminal report where they defined "Food insecurity" and "hunger" and established a framework for future research [13].

The National Nutrition Monitoring and Related Research Act was passed in 1990. This set the stage for the creation of the Federal Food Security Measurement Project in 1992 by a joint effort between federal agencies, academic researchers, and members of private organizations. In 1995, after field testing and revisions, standardized measures of food security were incorporated into the Census Bureau's "Current Population Survey" (CPS) under the "Food Security Supplement" (FSS) section. The CPS gathers data from around 50,000 households every month, reflecting both state and national levels in the US. Within the CPS, the FSS measures three main aspects: (1) the Household Food

Security Survey Module which provides information on the country's food security statistics; (2) household food expenses; and (3) usage of food and nutritional assistance programs by households experiencing food insecurity [13].

Questions related to the household in general	<p>1. “We worried whether our food would run out before we got money to buy more.” Was that often, sometimes, or never true for you in the last 12 months?</p> <p>2. “The food that we bought just didn’t last and we didn’t have money to get more.” Was that often, sometimes, or never true for you in the last 12 months?</p> <p>3. “We couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for you in the last 12 months?</p>
Questions designed to determine food insecurity status of adults living within the household	<p>4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn’t enough money for food? (Yes/No)</p> <p>5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?</p> <p>6. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food? (Yes/No)</p> <p>7. In the last 12 months, were you ever hungry, but didn’t eat because there wasn’t enough money for food? (Yes/No)</p> <p>8. In the last 12 months, did you lose weight because there wasn’t enough money for food? (Yes/No)</p> <p>9. In the last 12 months did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)</p> <p>10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months? (Questions 11–18 were asked only if the household included children age 0–17)</p>
Questions designed to determine food insecurity status of children living within the household	<p>11. “We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.” Was that often, sometimes, or never true for you in the last 12 months?</p> <p>12. “We couldn’t feed our children a balanced meal, because we couldn’t afford that.” Was that often, sometimes, or never true for you in the last 12 months?</p> <p>13. “The children were not eating enough because we just couldn’t afford enough food.” Was that often, sometimes, or never true for you in the last 12 months?</p> <p>14. In the last 12 months, did you ever cut the size of any of the children’s meals because there wasn’t enough money for food? (Yes/No)</p> <p>15. In the last 12 months, were the children ever hungry but you just couldn’t afford more food? (Yes/No)</p> <p>16. In the last 12 months, did any of the children ever skip a meal because there wasn’t enough money for food? (Yes/No)</p> <p>17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?</p> <p>18. In the last 12 months, did any of the children ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)</p>

Table 1: Household food security survey module to detect food insecurity status [13]

Disparities and Racism

Further research, published as recently as 2019, showed that food insecurity disproportionately impacts historically marginalized groups including households with children more specifically led by a single parent (usually the mother), families with low socioeconomic status, and Black and Latinx families. In 2017, 35% of households below

185% of the federal poverty level with children were food insecure compared to <6% of households with high socioeconomic status [21]. These households were often families who identified as Black or Latinx.

Although food insecurity is closely tied to poverty, the data shows that racial disparities are still present even when controlling for socioeconomic status [2]. That is to say that even when comparing black communities and white communities with equivalent socioeconomic status, black communities still experience higher rates of food insecurity. Although around 25% of poor households face food insecurity, almost 75% do not [2]. Additionally, despite a lower occurrence of food insecurity in families with higher incomes, 26% of all households with food insecurity are above 185% of the poverty threshold [2]. This further proves that although there is a link between poverty and food insecurity, the two are not synonymous. In a study by Bowen et al, 34% of Latinx households and 29% of black households were food insecure compared to 18% of white households. Furthermore, black households are more likely to be food insecure independent of other factors such as socioeconomic status in comparison to Latinx households [2]. This is due to a history of structural racism that has disenfranchised black bodies since slavery, a history that is not present for Latinx communities. That is not to say that Latinx communities do not experience discrimination but instead to acknowledge the difference that a history of slavery plays in the way that discrimination and racism manifests for black people today. Such a history has impacted laws, the prison system, urban planning, housing, education, employment, health care, and media in a mutually reinforcing manner that continues to discriminate against black people.

Bowen et al argued that racism is a fundamental cause of food insecurity. First, racism itself is a cause of racial disparities in socioeconomic status, which is then linked to food insecurity. Second, racism is connected to food insecurity independent of socioeconomic status. Bowen et al defines racism as the ideology that races are “populations of people whose physical differences are linked to significant cultural and social differences and that these differences can be measured and judged,” and the practice, at multiple levels, “that subordinate those races believed to be inferior” [2]. Racism can occur at individual, institutional and structural levels (as mutually reinforcing systems work together to allocate rewards to specific racial groups). Black and Latinx households earn lower than average incomes, and the racial wealth gap accumulates much faster over time and generations when compared to white households. Over half of the counties where 20% of the population has been impoverished for the last 30 years, are historically considered cotton-producing counties where slavery was most lucrative [2]. This provides historical context to the higher incidence of black people living in areas with high rates of poverty. Bowen et al writes, “spatial and social mobility often go hand-in-hand, the segregation of the minority poor from the nonpoor connotes persistent racial injustice, limited opportunities for upward social mobility, and the reproduction of poverty and inequality from one generation to the next” [2]. These “counties have the highest rates of poverty, unemployment, food insecurity, child mortality, and diet related illnesses” [2]. Not only are black people more likely to live in areas of poverty, but Black and Latinx people are also less likely to be homeowners. The racial disparities within home ownership are due to intentional practices such as redlining, which has led to denial of loans, mortgages, insurance and more. Households with financial and physical assets

are more equipped to buffer themselves against food insecurity. Therefore, the disparity in homeownership among minorities has a ripple effect and contributes to the disparity in food insecurity [2].

Black people are at increased risk of food insecurity when controlling for socioeconomic status due to lack of flexible resources that can be used to avoid or minimize the consequences of food insecurity. Flexible resources include non-occupational prestige and power, social connections, and freedom (as black people experience less freedom due to increased likelihood of being imprisoned, surveilled, and sanctioned). Racism can also impact health outcomes due to the stress of racial discrimination, inequalities in health care, and racial residential segregation and neighborhood inequality [2].

Furthermore, racism influences people's access to food due to the role that redlining played in creating food deserts. "Food retailers have engaged in "retail redlining" or "supermarket redlining" by consciously avoiding Black neighborhoods and targeting them for unfavorable treatment based on racial composition of the customers and/or store operators" writes Bowen et al. This has resulted in very few supermarkets in black neighborhoods and an abundance of supermarkets in white neighborhoods [2]. This increases the reliance on convenience stores, corner stores, and fast-food restaurants, which often have unhealthy food options at higher prices. This therefore limits the access to affordable and nutritious foods unless there is personal, reliable, consistent, and cost-effective transportation, which often there is not.

Research indicates that food insecurity is associated with experiencing adversity during one's life and over generations. Racism increases the likelihood of black people

experiencing adverse events therefore increasing their risk of food insecurity. A study found that significant interruptions in one's life like expulsion from school, job loss, institutionalization for mental health issues, and interaction with the criminal justice system, can significantly increase the risk of food insecurity [2]. This association is particularly noteworthy when these disruptions accumulate over time. Black people are more likely to experience these interruptions due to systemic racism in education, employment, and the criminal justice system. For example, black workers are more likely to lose their jobs during economic decline, and Black and Latino workers had higher rates of unemployment during COVID-19 compared to white workers. Black students are also more likely to be suspended from school than white students, and black people are disproportionately placed in prisons, jails, and detention centers. Prior incarceration furthers difficulty finding employment which exacerbates financial hardship leading to food insecurity [2]. Furthermore, prior incarceration negatively affects eligibility for government assistance programs that help to mitigate food insecurity. These outcomes are the result of institutionalized racism in various areas and the systemic exclusion and punishment of marginalized groups. Research also suggests that trauma and adversity can persist across generations, and food insecurity is linked to intergenerational violence and trauma. Food-insecure mothers often experience food hardship and emotional and physical abuse as children, and individuals who have experienced adverse childhood experiences (ACEs), such as discrimination or having a parent in jail, are more likely to experience food insecurity [2]. Odoms-Young and Bruce found that “a 1-unit increase in the frequency of lifetime racial discrimination was associated with a 5% increase in the

odds of being very low food secure even after adjusting for socioeconomic and demographic confounders” [15]

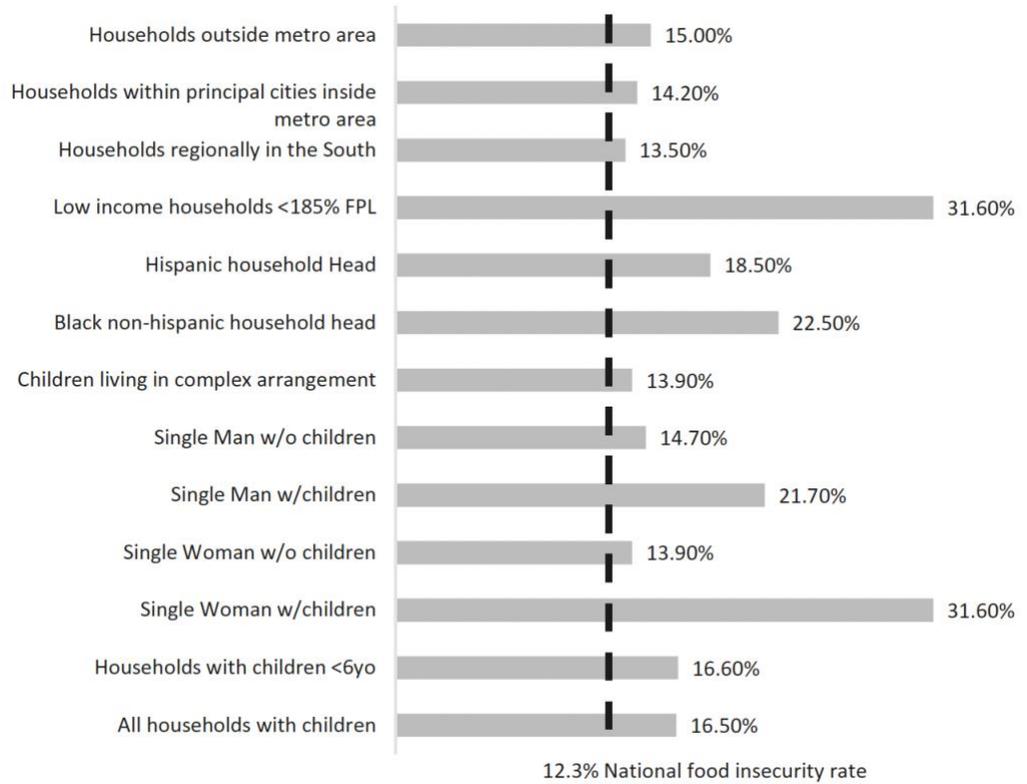


Figure 1: Food insecurity rate for different groups compared to the national average [13]

COVID-19 and Food Insecurity

Throughout history, the issue of food insecurity has been embedded with racial and socioeconomic disparities. However, the COVID-19 pandemic brought these disparities to the forefront, magnifying their impact on vulnerable communities. The pandemic left those already struggling to make ends meet, without work and unable to afford basic needs such as housing and food. Furthermore, the pandemic disproportionately impacted individuals with low socioeconomic status and people of color, further widening the disparities. Prior to the pandemic, the rate of food insecurity approximated 11%-12%, however, as of April 2020 that rate has tripled to 38% [22].

In addition to those with low income and people of color, children also were hit hard by the pandemic with 18 million children living in food insecure households in 2020. Due to government programs that will be discussed later, school cafeterias that served breakfast and lunch at either no or low cost were shut down [1]. As a result, there was an additional burden on parents to feed their children for two meals that they had not been accustomed to prior to the pandemic. Furthermore, intersectionality would lead us to conclude that children of color living in poverty were hit the hardest.

For children <5 years old who are not at the age to attend school, early childcare is important, with almost 60% of children in this age group spending at least one day per week in childcare. Early childcare can include “center-based care, home-based care by unrelated caregivers, and family-based care by relatives.” Prior to the pandemic “childcare deserts”, areas that lacked licensed childcare and home care centers were disproportionately located in communities with mostly people of color and low-income communities due to racism and systemic discrimination. Children who do attend childcare centers often receive up to 2/3 of their daily nutritional needs while in childcare and are able to observe and practice healthy eating behaviors. Therefore, at the peak of COVID-19 when childcare centers closed it placed an increased strain on parents to meet their child’s nutritional needs resulting in more children experiencing food insecurity [8].

CHAPTER 4

FOOD INSECURITY AND CHILD HEALTH

The United States Department of Agriculture reported around 8% of households with children experience severe food insecurity. Sometimes food insecure families are able to spare their children from experiencing food insecurity. However, at times they are unable to fully protect them from being affected with about 6.5 million food insecure children. Furthermore, even if children are not food insecure themselves, they can experience psychosocial stress related to food insecurity within the household, which adds to the overall negative effect on their health [13].

Parents often believe that their older children are not affected by food insecurity; however, studies that have directly asked children questions related to food access and availability at home suggest that parents are unaware of the full impact [13]. One child stated that although there had been times when they had almost run out of food, they “always had hot dogs or french fries or something.” Even as young as middle school, children were aware of using cheap foods and repetitively eating the same food as a method to avoid running out of food. Another child said, “I guess chicken is like the easiest affordable thing to (my mother) . . . all she buys is chicken” [7] These children, often teenagers but can be younger, are aware of their household's food insecurity and frequently notice and/or use strategies to reduce or change their food intake to protect their younger siblings or parents, often without their parents' knowledge. They report a range of coping mechanisms, such as asking for less food during mealtimes, avoiding certain types of food at the grocery store, trying to make their meals last longer, seeking

assistance from their social network, selling items to generate money, and even resorting to criminal activities [13]. One teenager stated, “We might all get together and cut the grass or something. We’ll find some way people will be putting money up on fights and stuff, too. And they might do dog fights every now and to get money” [7].

Teenagers are not the only group at higher risk of food insecurity; children from immigrant families are also at higher risk, with 40% of children who experience the most severe levels of food insecurity belonging to this group. One study found that children living in households with a mother who immigrated were three times more likely to experience severe food insecurity than those with native-born mothers. As a result, these children are also more likely to report poor health outcomes [13].

Physical Health

Children who experience food insecurity are at a higher risk of falling ill frequently, recovering slowly, and requiring ED visits and hospitalization more often. Additionally, they have higher risk of micronutrient deficiencies such as anemia [13] which under the age of 2 can cause problems with cognitive development [19]. Furthermore, there is a higher risk of chronic diseases, like asthma [13]. The stress related to food insecurity can also contribute to a depressed immune system, potentially resulting in more frequent colds and abdominal complaints. In food insecure children or children from food insecure households, many of these acute and chronic health concerns can worsen or be prolonged due to a tendency to delay seeking medical care due to cost [21]. When considering Maslow's hierarchy of needs, physiological needs such as food are the most basic needs before being able to address the second tier of safety needs, which includes health. Therefore, applying this concept, parents/guardians cannot be held

responsible when society is to blame for failing to meet their basic needs of living; this means that delayed medical care is a consequence of food insecurity.

While the evidence regarding the relationship between food insecurity and childhood obesity is mixed, some researchers suggest that food insecurity may contribute to childhood obesity via multiple mechanisms such as overconsumption of nutrient-poor/energy-dense foods (often found at the convenience and corner stores), cycles of overeating and then food shortage, less organized opportunities for physical activity, and increased stress levels and hormonal imbalances [13]. Therefore, food insecurity can lead to unhealthy eating habits, reduced fruit and vegetable intake and excess consumption of sugary beverages. Although causation has not been proven, there is a correlation between food insecurity and childhood obesity potentially due to the prevalence of both within disadvantaged communities. Piere et al found that rates of food insecurity, accelerated weight gain, and childhood obesity increased during the pandemic [20]. This finding was most likely multifactorial as children were also less active during the pandemic due to most people staying at home, however, this finding still supports a connection between food insecurity and weight gain potentially leading to obesity. Furthermore, data supported racial disparities in childhood obesity widening throughout the pandemic [20].

Psychosocial/Mental Health

Children who experience food insecurity are at a higher risk of experiencing adverse emotional symptoms, including feeling low, irritable, and nervous, and reporting greater life dissatisfaction [13]. However, even when the child is shielded from personal food insecurity, the parental stress leading to parental mental health hardship can still impact the child's mental and emotional health including their development depending on

the age of the child [21]. Food insecure students are more likely to engage in or be victims of bullying and engage in high-risk behaviors such as smoking and drinking alcohol. Furthermore, a longitudinal study of food insecure elementary school students found negative effects on interpersonal relations, self-control, approaches to learning, and externalizing behaviors. Even if food insecurity is resolved by the third grade, these negative effects may persist through the fifth grade [13]. Pai & Bahadur explain that at the age of three, food insecure children often exhibit aggressive behavior, inattention, irritability, and hyperactivity. As they progress into preschool and school-age, they also begin to experience negative internalizing behavior. Once they reach teenage years, they become four times more susceptible to dysthymia or persistent depressive disorder and depression and five times more likely to attempt suicide. Consequently, they seek out mental health services and specialized counseling more frequently [16]. The strong association between food insecurity and depression/ suicidal ideation and the stepwise fashion as children age, highlights the importance of preventing food insecurity early in life to support lifelong mental health.

Academic and Developmental Health

Studies using data from the National Health and Nutrition Examination Survey III found that children between ages 6 and 11 who were food insecure had significantly lower arithmetic scores and lower test scores in general. Furthermore, experiencing food insecurity in kindergarten was linked to reduced academic achievement in both math and reading throughout the following four years [13]. Lastly, food insecure children were more likely to have repeated a grade, been absent or late to school, or have been suspended [16].

CHAPTER 5

HOW TO ADDRESS FOOD INSECURITY

Understanding the history of food insecurity, the root causes, who is most affected, and its effects on health and well-being is all essential, however, solely understanding is not enough. In accordance with Amartya Sen, collective action to address food insecurity must take place using the understanding as guidance for change. There are many different methods that are currently in place to combat food insecurity including government programs, school programs, community programs, and programs within the healthcare system. This chapter will explore each of them.

Name	Population served	Description
Supplemental Nutrition Assistance Program (SNAP)	Individuals and families that meet state income eligibility requirements (generally at or below 130% of the federal poverty level for gross monthly income)	Supplements food budgets of individuals and families through monthly benefits that can be redeemed for food at retailers
Supplemental Nutrition Program for Women, Infants and Children (WIC)	Pregnant, postpartum, and breastfeeding women, infants, and children up to age 5 years who meet state income eligibility requirements (between 100 and 185% of the federal poverty level) and are deemed to be nutritionally at-risk	Provides access to nutritionally important food items including infant and toddler formula, milk, and other food products through monthly cash value benefits, as well as nutrition education, breastfeeding support, and referrals to healthcare
Child and Adult Care Food Program (CACFP)	Children and adults served by child or adult care centers, family and group care homes, and emergency shelters that meet income eligibility requirements based on poverty status of the area or income of enrolled children	Reimburses child and adult care providers, family and group care homes, and emergency shelters for paid, reduced-price, and free meals and snacks that meet federal nutrition requirements
National School Lunch Program (NSLP)	Children in schools and residential child care institutions whose households meet income eligibility requirements (130% and 185% of the federal poverty line for free and reduced meals, respectively)	Reimburses schools and school districts for free and reduced-price lunches during the school year that meet federal meal pattern requirements
School Breakfast Program (SBP)	Children in schools and residential child care institutions whose households meet income eligibility requirements (130 and 185% of the federal poverty line for free and reduced meals, respectively)	Reimburses schools and school districts for free or reduced-price breakfasts during the school year that meet federal meal-pattern requirements
Summer Food Service Program (SFSF)	Children up to age 18 who either live in an area where at least 50% of residing children qualify for free and reduced-price meals, or are enrolled in an organized program in which at least 50% of enrolled children qualify for free and reduced-price meals	Reimburses sponsors (including schools, government agencies, and nonprofit organizations) for free, supervised meals that meet federal nutrition requirements served at approved sites during the summer when school is not in session

Table 2: Government programs currently in place to address food insecurity [9]

Government Programs

SNAP is a government run program that helps low-income families by providing monthly benefits that can be used to buy food. It provides more support than any other

food assistance program and over 25% of U.S households participate. Enrollment in SNAP is supported by research and has numerous benefits. It provides \$1.35 per person per meal and helps spare millions of children from experiencing food insecurity each year. Studies have shown that it also improves the health and academic performance of children while boosting local economies. The program is federally funded and operates in all states. Studies have demonstrated that WIC, another government run program described in the figure above, promotes healthier eating habits, supports child development, contributes to long term academic success, and decreases household food insecurity [13].

In recent years, snap and other social assistance programs have become more punitive and localized, further exacerbating racial inequalities. Reflecting the link between racist imagery and racist structures, political elites justify this punitive turn by conflating poverty with a Black underclass and depicting poor Black people as dysfunctional, pathological, and dangerous. These racist structures and ideologies, in turn, influence people's access to public assistance and their experience using it [2].

Elliott and Bowen found that poor mothers' participation in social service programs like WIC means exposing their feeding practices and their children's bodies to ongoing monitoring (ex. weigh-ins) and scrutiny, and that Black mothers perceive the stakes of conforming to institutional standards as especially high. Studies of welfare programs find that Black and Latina women are at a greater risk of being sanctioned than white women, and experimental research finds that welfare caseworkers are more likely to sanction Black than white welfare recipients for the same violation. The impacts of these

discriminatory behaviors are compounded by the interconnected surveillance associated with public assistance [2].

During the COVID-19 pandemic, the federal government increased its investment in social assistance programs, such as SNAP. This included establishing the Pandemic Electronic Benefits Transfer (P-EBT) program, which provided funds for families to purchase meals for children no longer receiving them in school and was extended to daycare and childcare centers. The value of P-EBT was about \$114 per child per month. Additionally, during the pandemic, SNAP changes included expanded benefit eligibility, increased benefit levels for many recipients, and waived or extended paperwork deadlines and interview requirements, expanding its caseload to 6.2 million more participants. The sole requirement for P-EBT is eligibility for free or reduced-cost school meals or attendance at a school that provided subsidized meals to all students prior to the pandemic. P-EBT provides money on an electronic benefits transfer (EBT) card, similar to a debit card, to use for food purchases at any authorized SNAP vendor [1].

Both SNAP changes implemented in 2020 and P-EBT carry lessons for the development of future nutrition assistance programs. Within SNAP, the removal of administrative barriers to enrollment and the use of streamlined procedures to expedite access to food should continue after the pandemic resolves. School programs, such as the National School Lunch Program (NSLP) and School Breakfast Program (SBP), also played a critical role in providing meals to children during school closures. NSLP and SBP provide breakfast, lunch, snacks, and sometimes supper through after-school programs to millions of children. During this time, parents requested a meal-delivery

system and flexible meal pick-up times at varying locations throughout their community [12].

Community Programs

In the United States, food banks supply thousands of food pantries, which serve local communities. Food pantries are run by a variety of organizations, including non-profit organizations, faith-based organizations, and community centers. These food pantries serve as an emergency resource for those experiencing food insecurity. Food banks and pantries could work towards alleviating barriers by having additional or more varied hours of operation, particularly outside of standard work hours, providing home delivery or transportation, and engaging with people in their community with lived experiences to best understand how to provide food access in a culturally sensitive and convenient way [14].

In response to the COVID-19 crisis, the emergency food system (i.e., food banks and other charitable organizations that distribute food) have mobilized to respond to a 50% increase in demand. Food pantries in Massachusetts have found that black and Latino adults had the highest prevalence of food pantry use, but also experienced more barriers to pantry use, such as difficulty with transportation and meeting pantry hours. Barriers to food pantries include not knowing the hours of operation, inconvenient hours or location, transportation, not knowing the location of the pantry, and embarrassment. For example, Latinos may have less knowledge about where the pantry is located and when it is open due to language barriers, while Black and Latino adults may face transportation barriers and inconvenience of location and hours. On the other hand, white people may experience higher levels of stigma surrounding pantry use [14].

Clinic-Based Programs

Now, some innovative programs are using prescriptions as a way for providers to link families to needed resources and improve access to fresh fruit and vegetables. Support for such a prescription program could be through a collaborative community partner, facilitating a connection that may have otherwise been difficult; perhaps it could also include nutrition education and cooking demonstrations that would integrate community health resources into the healthcare setting. Furthermore, the concept of prescribing food, or using food as medicine, highlights the importance of nutrition as a key component of health and well-being. Although more research is clearly needed, prescriptions for food have been shown to increase fruit and vegetable consumption, reduce food insecurity, and improve the health of patients [6].

Food as medicine programs may include home-delivered meals, produce prescription programs/vouchers, and medically tailored food packages, often including an educational component. The Center for Urban Bioethics at Temple University has a program called Farm to Families where families are screened for food insecurity, receive a prescription for farm to families, and present that prescription at a designated location to pick up their subsidized box (or as of COVID-19 have boxes delivered to their homes). Additionally, this program includes cooking demonstrations, culturally sensitive recipes, and tips on how to budget and shop for healthy foods. Another example is The Children's National Hospital Family Lifestyle Program's Home-Delivery Produce Prescription Initiative, a family-centered, clinical-community collaborative that started in 2017 by Children's National alongside the YMCA, American Heart Association, and 4P Foods. Any adult with children aged 0-5 years old were universally screened for food insecurity

and then referred to the program by their pediatrician. Participants received fresh fruit and vegetable delivery and virtual nutrition education, including monthly virtual cooking classes, brief video-based education, recipe videos, and recipe and skill-building instruction cards included in every produce delivery [6].

The program resulted in several positive outcomes, including lessening the food hardship on parents due to accessibility and reliability, encouraging family-driven behavioral changes after trying new foods and ways of preparing food, increasing economic flexibility, and allowing for family bonding. Giving families the opportunity to try novel fruits and vegetables without impacting their SNAP (Supplemental Nutrition Assistance Program) budget increases the probability that they will eat more varied fruits and vegetables. Parents may buy foods that they know their kids will eat rather than spending their limited budget on something new and healthy which their children may not eat [6].

Social Cohesion

Social cohesion is the degree of connectedness and solidarity among individuals within a geographic area. Research shows that more social cohesion, especially in minority populations, can be protective against food insecurity. The idea is that more cohesive communities are better equipped to use their social ties for shared goals that contribute to the greater good. When communities feel that they have a high level of social cohesion, it fosters trust, promotes reciprocity, and as a result leads to shared resources, including food and strategies to address food insecurity within the neighborhood [4]. One potential strategy to improve social cohesion is via programs through schools that allow parents to expand their social networks and create bonds with

other vulnerable families. Additionally, after-school programs that offer dinner for families could be expanded, particularly in marginalized neighborhoods, as a means to foster social cohesion and mitigate food insecurity [4]. On an even grander scale, it is essential that not only residents view themselves as part of this cohesive community, but also those who work in the community such as healthcare workers, politicians, business owners, and more. Furthermore, if they were to view themselves as part of the community and treat community members as neighbors with expertise on what the community needs then it would allow for increased trust and more collaboration.

CHAPTER 6

ETHICAL EVALUATION

Is there an ethical duty as a pediatrician to ensure food security to our patients? Historically, health care providers have not been extensively involved in addressing food insecurity. However, recent studies have shown that a significant percentage of families, particularly in urban primary care centers, experience food insecurity [3]. In 2015, the American Academy of Pediatrics released its first policy statement on food insecurity. The policy encourages healthcare providers to identify and address food insecurity in their clinical settings, particularly during scheduled routine healthcare maintenance visits. It advocates for programs and policies that aim to end childhood food insecurity and promotes the use of a specific screening tool called the "Hunger Vital Sign." However, healthcare providers face challenges in screening due to limited resources, knowledge, time constraints, personal discomfort, and concerns about families' responses. Moreover, since most physicians did not grow up in poverty, they require formal education on poverty and screening [13]. As healthcare practices move towards addressing the social risks of the entire family, it may be useful to inform families that questions are asked universally and that responses will be used to help, not penalize them. Healthcare providers have an opportunity to extend their advocacy beyond the clinic walls and enter a partnership with the community through different agencies and organizations to collectively address food insecurity within communities. The following figure depicts a multi-tiered approach to addressing food insecurity and outlines the healthcare providers role within each tier along with measurable outcomes [13].

	Actions and solutions	Program leads	Trackable outcomes
<i>Tier 1.</i> In-clinic provider-based approach	<ul style="list-style-type: none"> • Resource list • Create on own • Use list from community partner • Encourage family to enroll in core public benefits like SNAP and WIC • Refer for emergency food box • Write prescription for box of fresh food • Write prescription for farm stand for \$10 off purchase of produce • Consult social worker or office staff to help facilitate efforts 	<ul style="list-style-type: none"> • Healthcare providers • Clinical office staff 	<ul style="list-style-type: none"> • Number of resource lists distributed • Number of families enrolled in the fresh produce program • of families accessing resources • Health, preventive service outcomes available from the EHR
<i>Tier 2.</i> Community-engaged approach	<ul style="list-style-type: none"> • Meet with key community agencies and organizations to enhance view of public and community-based resources • Engage in collaborative projects that support families' access and utilization of existing programs • Collaboratively develop new programs to fill identifiable gaps • Engage in longitudinal community-based participatory research to evaluate programs 	<ul style="list-style-type: none"> • Healthcare providers • Social services agencies • Public benefits administrators • Food banks and pantries • Resource centers • Schools • Libraries 	<ul style="list-style-type: none"> • Connections between agencies (number and strength) • Quality, accuracy of resource information for physicians to provide to families • Number of clinic-based referrals to partnered agencies • Number of individuals/families served or stories of personal experiences an barriers to utilizing food resources (qualitative data)
<i>Tier 3.</i> Advocacy-based approach	<ul style="list-style-type: none"> • Advocate for families during clinic visits • Work with local organizations or medical societies to advocate on a broader scale • Educate trainees about FI and other SDH 	<ul style="list-style-type: none"> • Healthcare providers • Local, state and federal officials • Media 	<ul style="list-style-type: none"> • Extent of deployment of curriculum that teaches residents about how to address FI in practice • Number of op-eds written • Number of meetings with elected officials • Policy changes

Table 3: Multi-tiered approach to addressing food insecurity [13]

A team-based approach, involving clinicians, trainees, nurses, medical assistants, social workers, and community health workers, is the most effective strategy for screening and addressing food insecurity [13]. By working together, this diverse team of healthcare professionals and community collaborators can provide comprehensive care and support to families facing food insecurity, considering their social determinants of health. Pediatricians and health systems should advocate for continued financial investment from federal and state funding to expand access to early childcare centers. Early childcare centers can play a critical role in addressing food insecurity among young children, and pediatricians can work with policymakers and other stakeholders to ensure that these centers receive adequate resources to provide nutritious meals and support to vulnerable families [9].

Providers, particularly pediatricians, should also emphasize the importance of targeting assistance programs and funding to those who have been most marginalized, with the goal of reducing disparities and promoting equity. This includes being aware of the specific needs of families from low-income backgrounds or communities of color and advocating for tailored interventions. Pediatricians should familiarize themselves with assistance programs such as SNAP, WIC, NSLP, SBP and their eligibility requirements in order to share this information with patients and families [9]. Additionally, they should familiarize themselves with emergency food programs and community programs including, but not limited to food banks and pantries, neighborhood farmers markets, community gardens, and other local resources that can help families access nutritious food [3]. By being informed and providing education to families, pediatricians can play a crucial role in connecting families with available resources. Pediatric offices can further improve by having posters or other visual aids in each examination room that list local and federal nutrition resources [16]. This can serve as a reminder for clinicians to have this discussion and provide readily accessible information for families about their available options. Such visual aids can facilitate more comfortable and universal discussions about food insecurity and help families access the resources they need to improve their food security status.

When discussing food insecurity, Pediatricians should also take the time to ask and understand the root causes of a family's food security status, whether that be financial, transportation, lack of support, discrimination, unemployment etc as this information can inform interventions that will be unique to each family's needs. Establishing strong relationships with community organizations that provide emergency

food resources and creating advisory groups with policymakers, nutrition experts, and community-based organizations can enhance interventions and support for families facing food insecurity [9]. Collaborating with diverse stakeholders can help develop comprehensive strategies to tackle food insecurity and promote food access and equity. All clinics should also all strive toward having on-site resources. The following figure lists a variety of on-site clinic resources and methods to approach community engagement [13].

Intervention	Objectives	Physician engagement
Clinic-based WIC program	<ul style="list-style-type: none"> Establish clinic-based WIC office 	<ul style="list-style-type: none"> Assess patient needs for co-located WIC services Bring together WIC and clinic administrators to discuss common goals and collaborative opportunity
Clinic-based food pantry	<ul style="list-style-type: none"> Establish a clinic-based food pantry or distribution program 	<ul style="list-style-type: none"> Conduct needs assessment among patients for a co-located food pantry Partner with food bank, hospital food vendor, or grocery store to distribute or sell fresh fruits and vegetables
Clinic-based farmers market	<ul style="list-style-type: none"> Establish a local farmers market on clinic property 	<ul style="list-style-type: none"> Conduct needs assessment among patients for a co-located farmers market Bring together farmers market representatives, local food bank and clinic administrators to discuss collaborative opportunity Develop a subsidized voucher program for patients utilizing farmers market Partner to assess quantitative and qualitative outputs and outcomes
Clinic or hospital-based meal programs	<ul style="list-style-type: none"> Serve free meals to low-income children and parents at clinics or hospitals 	<ul style="list-style-type: none"> Conduct needs assessment of clinic and/or hospital food insecurity among patients and families Partner with community agency (e.g., food bank, meal program sponsor) or hospital food vendor to serve free meals to low-income children using public funding mechanism Identify opportunities to leverage private funding for meals for low-income parents
Food prescription	<ul style="list-style-type: none"> Develop food prescriptions for distribution at clinic 	<ul style="list-style-type: none"> Collaborate with food banks and other key partners create food prescription pad (handout) with pertinent food resource and contact information Clearly indicate that the prescription is physician endorsed
Food resource guide	<ul style="list-style-type: none"> Develop a hyper-local food resource guide Distribute guide at clinic and in the community 	<ul style="list-style-type: none"> Partner with local food bank, schools, community organizations, churches, etc. to support access to existing food resources (e.g., pantries, school backpack programs, summer or weekend meals) Develop food resource guide to be distributed at clinic and widely throughout community
Physician advocacy	<ul style="list-style-type: none"> Participate in local FI collaboratives and task forces 	<ul style="list-style-type: none"> Serve as physician members of local community and school-based collaboratives and task forces aimed at addressing FI Provide leadership in developing such collaboratives when none exist by serving as a convener Leverage unique access to vulnerable populations and bear witness to the FI needs of patients and families
Community-based participatory research(33, 35)	<ul style="list-style-type: none"> Engage in collaborative research that equitably involves partners in all phases of the research 	<ul style="list-style-type: none"> Identify opportunities to strengthen collaborative work by engaging in community-based, rigorous research to demonstrate impact Leverage access to academic resources, while promoting a mutual exchange of expertise and resources among partners Promote shared and equitable decision-making, ownership of the research process, funding, and dissemination of findings Support community efforts to “take action” based on the research findings

Table 4: List of clinic-based programs and community collaborations for physicians [13]

CHAPTER 7

CONCLUSION

Although food insecurity has been a public health concern and political topic of discussion since the 1980's, we still have a long way to go in terms of addressing the issue. We have made strides in objectively measuring and reporting rates of food insecurity and continue to support government assistance programs that have alleviated some of the burden. However, we must acknowledge the disparities seen in who is most affected by food insecurity and allow that insight to guide us toward a more ethical manner of tackling the issue. Addressing food insecurity is going to require going beyond its previous interchangeability with poverty and centering voices of not only the poor, but also Black people, Latinx people, single mothers, immigrants, children, and those who traverse multiple marginalized communities. Furthermore, the pandemic and its disproportionate impact on these marginalized communities have exposed areas in which we are failing those who are most vulnerable. Some of the efforts pursued in response, such as expanding SNAP eligibility or providing creative methods for children to receive nutritious meals when schools were closed can now inform us on how to continue moving forward equitably.

As discussed previously, experiencing food insecurity can have a variety of adverse effects on child health. Both children who directly experience food insecurity and those who live in food insecure households can bear negative impacts on their physical, mental, and psychosocial health in addition to their academic achievement and development. Therefore, Pediatricians do have a significant role to play in addressing

food insecurity. Furthermore, as a community of healthcare providers we should be working together to advocate for more inclusive policies on behalf of our patients who are most severely impacted. As physicians we treat an entire person and must consider the social determinants of health before we can expect to actually make an impact. As mentioned earlier, Maslow's hierarchy is always important to remember when considering how someone can achieve their highest potential. Furthermore, it can serve as a tool for a multi-tiered approach to ensure that people are able to meet each level of their needs.

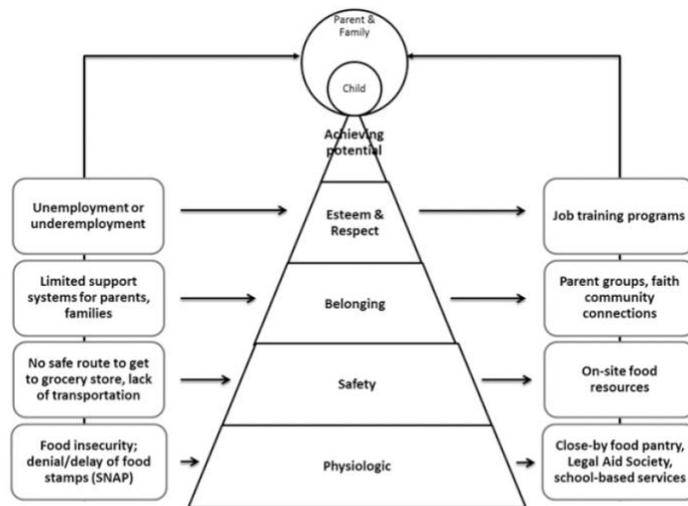


Fig. 4.4 Depiction of how Maslow's Hierarchy of Needs can be used to translate risks into connections to community resources. (Credit: Adrienne W. Henize, JD et al. [52])

Figure 2: Maslow's Hierarchy of Needs applied to food insecurity [13]

The figure above provides a great example of how we can recognize the risks that are challenging the ability for our patients to meet their needs at each level and then use that knowledge to translate their risk into connections with community or in-clinic resources [13].

As we consider an ethical technique to achieve food security, we must return to our urban bioethical principles of agency, social justice, and solidarity. In order to promote the agency of our patients to be healthy and make nutritious choices we must first understand what limits their capacity to do so through universal but tailored screening for food insecurity. This can then inform us as to what resources they need in order to shift the focus to equitable distribution of those resources in alignment with social justice. Lastly, I believe solidarity is the most important and necessary in today's climate. Building closer knit communities between politicians, educators, health care workers, social workers, business owners, community leaders, and each community member may be essential to reducing food insecurity and disparities. That is why community engagement and collaboration is an ethical obligation of physician advocates if we are to address the root causes of the problem and achieve food security for our patients.

REFERENCES CITED

- [1] Balasuriya, Lilanthi, Seth A. Berkowitz, and Hilary K. Seligman. “Federal Nutrition Programs after the Pandemic: Learning from P-EBT and Snap to Create the next Generation of Food Safety Net Programs.” *INQUIRY: The Journal of Health Care Organization, Provision, and Financing* 58 (March 26, 2021): 004695802110051. <https://doi.org/10.1177/00469580211005190>.
- [2] Bowen, Sarah, Sinikka Elliott, and Annie Hardison-Moody. “The Structural Roots of Food Insecurity: How Racism Is a Fundamental Cause of Food Insecurity.” *Sociology Compass* 15, no. 7 (May 3, 2021). <https://doi.org/10.1111/soc4.12846>.
- [3] DeMartini, Tori L., Andrew F. Beck, Robert S. Kahn, and Melissa D. Klein. “Food Insecure Families: Description of Access and Barriers to Food from One Pediatric Primary Care Center.” *Journal of Community Health* 38, no. 6 (July 14, 2013): 1182–87. <https://doi.org/10.1007/s10900-013-9731-8>.
- [4] Denney, Justin T., Rachel Tolbert Kimbro, Katherine Heck, and Catherine Cubbin. “Social Cohesion and Food Insecurity: Insights from the Geographic Research on Wellbeing (Grow) Study.” *Maternal and Child Health Journal* 21, no. 2 (July 20, 2016): 343–50. <https://doi.org/10.1007/s10995-016-2119-5>.
- [5] Drèze Jean, and Amartya Sen. *Hunger and Public Action*. Oxford: Univ. Press, 2002.
- [6] Fischer, Laura, Nia Bodrick, Eleanor R. Mackey, Anthony McClenny, Wayde Dazelle, Kristy McCarron, Tessa Mork, Nicole Farmer, Matthew Haemer, and Kofi Essel. “Feasibility of a Home-Delivery Produce Prescription Program to Address Food Insecurity and Diet Quality in Adults and Children.” *Nutrients* 14, no. 10 (May 10, 2022). <https://doi.org/10.3390/nu14102006>.
- [7] Fram, Maryah Stella, Edward A. Frongillo, Sonya J. Jones, Roger C. Williams, Michael P. Burke, Kendra P. DeLoach, and Christine E. Blake. “Children Are Aware of Food Insecurity and Take Responsibility for Managing Food Resources.” *The Journal of Nutrition* 141, no. 6 (April 27, 2011): 1114–19. <https://doi.org/10.3945/jn.110.135988>.
- [8] “Glossary.” Action Against Hunger, October 13, 2022. <https://www.actionagainsthunger.org/the-hunger-crisis/world-hunger-facts/what-is-hunger/glossary/>.

[9] He, Yuan. “Impact of Coronavirus Disease 2019 on Food Security in Early Childhood.” *Current Opinion in Pediatrics* 35, no. 1 (September 13, 2022): 22–27. <https://doi.org/10.1097/mop.0000000000001179>.

[10] “HUNGER and FOOD SECURITY VOCABULARY DEFINITIONS.” n.d. https://www.foodspan.org/_pdf/teaching-the-food-system/Hunger_and_Food_Security-Vocabulary.pdf.

[11] Johnson, Sheryl, Laura Fischer, Simran Gupta, Jessica Lazerov, Judith Singletary, and Kofi Essel. “‘I Felt like I Had Something I Could Do about It’: Pediatric Clinician Experiences with a Food Insecurity-Focused Produce Prescription Program.” *Clinical Pediatrics*, 2023, 000992282211506. <https://doi.org/10.1177/00099228221150604>.

[12] Jowell, Ashley H, Janine S Bruce, Gabriela V Escobar, Valeria M Ordonez, Christina A Hecht, and Anisha I Patel. “Mitigating Childhood Food Insecurity during COVID-19: A Qualitative Study of How School Districts in California’s San Joaquin Valley Responded to Growing Needs.” *Public Health Nutrition*, July 30, 2021, 1–11. <https://doi.org/10.1017/s1368980021003141>.

[13] Kersten, Hans B., Andrew F. Beck, and Melissa Klein, eds. 2018. *Identifying and Addressing Childhood Food Insecurity in Healthcare and Community Settings*. *SpringerBriefs in Public Health*. Cham: Springer International Publishing. <https://doi.org/10.1007/978-3-319-76048-3>.

[14] Marriott, James P., Lauren Fiechtner, Nick W. Birk, Daniel Taitelbaum, Angela Odoms-Young, Norbert L. Wilson, Lauren A. Clay, and Rachel M. Zack. “Racial/Ethnic Disparities in Food Pantry Use and Barriers in Massachusetts during the First Year of the COVID-19 Pandemic.” *Nutrients* 14, no. 12 (June 18, 2022): 2531. <https://doi.org/10.3390/nu14122531>.

[15] Odoms-Young, Angela, and Marino A. Bruce. “Examining the Impact of Structural Racism on Food Insecurity.” *Family & Community Health* 41, no. S2 (2018). <https://doi.org/10.1097/fch.0000000000000183>.

[16] Pai, Shilpa, and Kandy Bahadur. “The Impact of Food Insecurity on Child Health.” *Pediatric Clinics of North America* 67, no. 2 (April 2020): 387–96. <https://doi.org/10.1016/j.pcl.2019.12.004>.

[17] Sen, Amartya, and Amartya K. Sen. “The Food Problem: Theory and Policy.” *Third World Quarterly* 4, no. 3 (1982): 447–59.
<http://www.jstor.org/stable/3990688>.

[18] Sen, Amartya. *Poverty and Famines: An Essay on Entitlement and Deprivation*. OXFORD: CLARENDON, 1982.

[19] Simonovich, Shannon Deirdre, Maria Pineros-Leano, Asma Ali, Olanrewaju Awosika, Anne Herman, Margaret H Withington, Bernardo Loiacono, et al. “A Systematic Review Examining the Relationship between Food Insecurity and Early Childhood Physiological Health Outcomes.” *Translational Behavioral Medicine* 10, no. 5 (2020): 1086–97. <https://doi.org/10.1093/tbm/ibaa021>.

[20] St. Pierre, Christine, Michele Ver Ploeg, William H. Dietz, Sydney Pryor, Chioniso S. Jakazi, Elizabeth Layman, Deborah Noymer, Tessa Coughtrey-Davenport, and Jennifer M. Sacheck. “Food Insecurity and Childhood Obesity: A Systematic Review.” *Pediatrics* 150, no. 1 (2022). <https://doi.org/10.1542/peds.2021-055571>.

[21] Thomas, Margaret M.C., Daniel P. Miller, and Taryn W. Morrissey. “Food Insecurity and Child Health.” *Pediatrics* 144, no. 4 (2019).
<https://doi.org/10.1542/peds.2019-0397>.

[22] Wolfson, Julia A., and Cindy W. Leung. “Food Insecurity during COVID-19: An Acute Crisis with Long-Term Health Implications.” *American Journal of Public Health* 110, no. 12 (November 12, 2020): 1763–65.
<https://doi.org/10.2105/ajph.2020.305953>.