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Improving Programs Addressing Food Insecurity in the State of Michigan

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Introduction

Communities that have limited or no access to healthy, affordable food options have been commonly referred to as "food deserts" since the 1990s. The USDA defines food deserts as "urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food (USDA 2013)." Food deserts often feature large proportions of households with low incomes, inadequate access to transportation, and a limited number of food retailers providing fresh produce and healthy groceries for affordable prices. These communities tend to be concentrated in low-income or minority neighborhoods, and prevalence of food insecurity is higher low-income households because when income is constrained or limited, individuals and households may be forced to make difficult decisions, resulting in poor dietary quality and inadequate nutrition since nutrient density foods such as fruits and vegetables are often more expensive and less accessible in low-income neighborhood.

Individuals and families are much more likely to be food insecure if they live in an area considered a food desert. Households or individuals are considered food insecure when they lack the financial ability and resources to regularly obtain nutritious foods. Food insecure individuals and families may consume more energy-dense, highly palatable foods such as foods high in fat, sugar or salt as a coping strategy. Research suggests that food insecurity was associated with poor dietary patterns and quality with high intake of unhealthy foods and beverages such as high-fat dairy products, salty snacks, sugar-sweetened beverages, and red and processed meats, and low intake of healthy foods such as vegetables leading to diet-related metabolic conditions such as obesity, type 2 diabetes, gestational diabetes, poor glycemic control among diabetes patients, hypertension and hyperlipidemia. The United States Department of Agriculture (USDA) Economic Research (2017) reported that 41.2 million people in the U.S. were food insecure.

Children, non-senior adults and seniors who experience food insecurity in the United States risk negative health outcomes as measured by incidents of these negative health outcomes (e.g. birth defects, poorer general health, behavioral problems, depression, diabetes, hypertension, heart disease) within those who report being food insecure [1]. This is particularly true in communities of color.

When households lack access to adequate food because of limited money or other resources, they are considered food insecure. Food insecurity is a leading health and nutrition issue in the United States (US). According to the US Department of Agriculture, 10.5% (13.7 million) of US households were food insecure at some point during 2019.

Experiencing food insecurity is associated with numerous physical and mental health outcomes and while food insecurity negatively impacts everyone it touches, vulnerable populations are particularly susceptible such as ethnic minorities, single mothers, children, and the elderly [2]. Among non-senior adults, households with lower incomes, headed by an African American or Hispanic person, single adults, and less educated are all more likely to be food insecure than their respective counterparts, and households with children are more likely to be food insecure than those without [1].

Commentary

Population health factors and disparities: Single mothers

Even prior to the pandemic single mother-led households in the U.S. have a higher incidence of food insecurity than any other demographic group, at 31.6%. Being food insecure puts both the mother and her children at risk of severe health outcomes. Pregnant women with poor nutrition due to being food insecure can lead to health complications for both the mother and her growing baby such as gestational diabetes, low birth weights and birth defects [2].

Single mothers experiencing food insecurity are likely to sacrifice their own nutrition so that their children have enough to eat. In addition, they are likely to forgo non-food expenses in order to provide meals for their families. Single mothers are also shown to experience higher rates of social isolation and therefore do not have adequate networks with other adults they can depend on for resources leaving them inadequate financial or emotional support. Thus, they are prone to depression and anxiety [2].

Population health factors and disparities: Children

For children, food insecurity can negatively affect success in school, as malnutrition is linked to learning difficulties and decreased information retention. Hunger is also associated with behavioral issues and difficulty with interpersonal skills, leading to poor social and cognitive development. Malnourished children and teens frequently experience mental health problems as poor nutrition can be a causal factor for anxiety, depression, and suicidal ideation.

Additionally, malnutrition is the primary cause of childhood obesity, which can lead to chronic illness in adulthood.

Population health factors and disparities: The elderly

Not accounting for food insecurity, the elderly population already suffer disproportionately from social isolation. Elderly people typically have small networks of friends and family apart from a spouse. In some cases with a loss of a spouse, extreme isolation can set in, triggering depression and a lack of desire to eat or cook healthy foods. Sometimes dependence on a late spouse for cooking or grocery shopping can leave a partner without the know-how to adequately provide for oneself following their partner's death. Many older people suffer from mobility issues and cannot do everyday tasks such as carrying groceries or walking for short distances leaving them at risk to food insecurity due to limitation in their food consumption options. These physical limitations, isolation, and mental illness can all act to amplify food insecurity among older populations, especially those with extreme financial limitations [2].

Behavioral health factors

Studies have shown suggested that in families with children, depression is correlated with food insecurity. In many cases, parents who are unable to feed their children can lead to depression while in other cases, depression can be identified as a predictor of food insecurity.

There already exists a large body of research indicating that being food insecure is greatly associated with depression, anxiety and stress. Children are particularly vulnerable. The odds of having high depression or anxiety in children ages 4-8 in food insecure households was estimated 2.79 times higher than among children in food-secure households. The odds of depression or suicidal ideation among youths aged 14-25 in households experiencing hunger were 2.3 times higher than among youth in households without hunger [1].

The odds of behavioral problems in children with food insecure mothers was estimated at 2.1 times higher than those children with food secure mothers. Food insecure mothers had 2.2 times higher rates of mental health issues than fully food secure mothers. Major depression in adult women was positively associated with food insufficiency; maternal depression was twice as likely to be experienced in women in food insecure households [1].

The literature suggests that because of the recent pandemic, more studies have focused on the association between food insecurity and depression, anxiety and stress because more people have become food insecure during this time. Wolfson, et al. [3] surveyed 1,476 adults below the federal poverty line and found that 33% screed positive for depression, 39% positive for anxiety and 39% for high stress. Children of low-income families often rely on school breakfast and lunch programs. The closing of in-person classes during the pandemic meant that many of those food programs were not available.

These findings have spurred a greater interest in exploring further how food insecurity has been exacerbated during this pandemic and additionally what negative health outcomes have also been exacerbated as a result – particularly mental health. When one thinks of food insecurity it is not surprising that they would think of the negative health outcomes in terms of nutrition. Further research is likely to show that negative mental health outcomes have particularly risen during the pandemic. The most recent research is likely to show that, like children, seniors have suffered negative mental health outcomes because of being isolated.

Programs addressing food insecurity

The U.S. government provides several services targeting food insecure individuals largely funded through Supplemental Nutrition Assistance Program (SNAP), the Supplemental Program for Women, Infants and Children (WIC), and a handful of child-targeted meal programs such as the National School Lunch Program (NSLP), the School Breakfast Program (SBP), and the Summer Food Service Program (SFSP) [2].

Formerly known as "food stamps," SNAP program is the largest and most widely utilized government program. It allows eligible low-income households to receive a supplemental amount of money to spend on grocery items each month. Eligibility is determined by net income for a household falling at or below the poverty line (a household must not possess more than $2,250 in assets) [2].

The WIC program is a nutrition supplementation program that supports pregnant women, postpartum women, and infants and children under 5 years old and provides participants access to supplemental nutritious foods and nutrition education and counselling. Additionally, the program screens and makes referrals to other health and welfare services. WIC is a federal grant program, which is susceptible to funding allocation changes depending upon the current federal budget, which results in the exclusion of many women who are not eligible to receive WIC services and may be placed on a wait list [2].

Then there are the handful of federal children's meal programs that provide children from low-income homes with a meal supplementation. The National School Lunch Program (NSLP), implemented in 1946, provided 7.1 million children with free or discounted lunches in its first year and served 30.4 million children by 2016 [2]. The School Breakfast Program (SBP) is also administered primarily in public schools and is available for eligible low-income children. And final, the Summer Food Service Program (SFSP), a federally funded and state administered program, allows food insecure children to get meals in the summer time when they do not have access to the NSLP or SBP at school. All three of these initiatives aim to supplement child meals outside of the home, which can act as an immense relief for parents struggling to afford meals for their children.

In addition to SNAP benefits, seniors can participate in the Commodity Supplemental Food Program (CSFP). This program seeks to improve the health of low-income seniors

age 60 and above by supplementing their diets with nutritious domestic USDA foods. This program is a federal program administered by the Food and Nutrition Service (FNS) through the US Department of Agriculture. Eligibility for seniors over 60 years of age are those 130% below the federal poverty income guidelines. Individual States may require that a physician or local agency staff make the determination of nutritional risk (usa.gov). The Meals on Wheels network delivers meals to seniors and is funded by a variety of federal, state, local and private funding based on the needs and resources of individual communities (Meals on Wheels).

According to Feeding America [4], in Michigan, one in eight people face hunger, with one in seven children facing hunger. Specifically in Southeast Michigan more than 780,000 people (16% of the population), 200,000 of which are children — are food insecure. People facing hunger in Michigan are estimated to report needing $640,777.000. As stated, SNAP provides temporary help for people facing food insecurity, providing supplemental money to buy food. In Michigan, 12% of the state population receives SNAP benefits with almost 61% being families with children and 41% families with members who are elderly or have disabilities, and 42% being working families. Most of these individuals and families receiving SNAP benefits in Michigan are poor with 50% at or below the poverty line and 12.2% were considered to be food insecure [5].

Conclusion: Program outcome limitations

Federal nutrition programs that aim to alleviate food insecurity and poverty have been shown to be effective. Thirteen federal programs that aim to address food insecurity represent $100 billion in annual nutrition assistance. SNAP is by far the largest of the federal nutrition programs with the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) and the National School Lunch Program represent the next two largest (Seligman and Berkowitz (2018). Research has shown that children in households under the poverty threshold participating in SNAP for six months were approximately one-third less likely to be food insecure than not enrolled in the program. Children participating in SNAP are less likely to be obese, underweight, at development risk or to have overall poor health status. They are found to be less likely to be hospitalized, and their families are less likely to report financial health care cost burdens [6].

However, more than half of households receiving SNAP benefits still report being food insecure. Seligman and Berkowitz [7] suggest one reason for this is that households self-select into the SNAP program. Households that are eligible to receive SNAP benefits may not become aware that they can receive benefits until after they have exhausted all other strategies. This leads to a prevalence of the most food-insecure households enrolling in SNAP. In addition, SNAP benefit levels are often inadequate to lift a household out of food insecurity. For example, 80% of SNAP benefits are exhausted by the second week of the month [7].

WIC serves more than 8 million and is considered to be a crucial component of the social safety net for women, infants and children in the United States. However, structural barriers to exist for many. Lui and Lui [8] found that white women with unintended consequences were more likely to participate in WIC than women of color. It is also suggested that some women who may be eligible for the program may not enroll in the program because they prefer to try to manage accessing nutritional and health resources for themselves and their children through alternative means.

Lui and Lui [8] also find that those who are eligible but do not participate in WIC, they may face structural barriers that prevent them from participating in the program such as difficulty obtaining an appointment, lack of transportation and/or child care, and difficulty finding time off from work. Further some women who do enroll but get put on a waiting list, miss an appointment, are unable to pick up their vouchers, have difficulty reapplying, are lost from the program due to a move or finding themselves homeless, or do not have identification are less likely to ever participate in the program.

Desired Future State: Suggestions for Achieving Better Outcomes

Carlson [9] reports that after policymakers temporarily boosted SNAP benefits in response to the Great Recession, SNAP household's food spending increased. Further studies found that when benefits were increased in summer (when many children lack access to free or reduced-price school meals, the share of children with very low food security decreased by one-third). These increases ended in 2013, and according to Tanner [10], suggests that due to deliberate policy choices by federal and state governments, SNAP is a flawed and inefficient program that has high administrative costs and significant levels of mismanagement in need of overhaul.

Although evidence suggests that SNAP may make healthy food more available to low-income Americans, it is unclear if it actually increases the consumption of nutritional food. A study by Cole and Fox (2008, as cited in [10]) concluded that for nearly all vitamins, minerals and macronutrients assessed concluded that SNAP participation does not lead to greater intake of food energy or vitamins and minerals overall. This may be because SNAP subsidies unhealthy food such as fast food and junk food that is prevalent in lower-income communities living in food deserts [10]. Food insecure SNAP recipients report that they need $10-20 more per person each week in order to buy enough food to meet their needs, yet SNAP spending has fallen by 32% since 2013, and the Congressional Budget Office (CBO) projects that it will return to the 2007 level by 2026 [11].

Committing to further funding for SNAP along with improved management and oversight is necessary to achieve positive health outcomes associated with mitigating food insecurity. According to the Center on Budget and Policy Priorities, [11], SNAP benefits can be a fast and efficient form of economic stimulus because they get money into the

economy quickly during a recession. Low-income individuals generally spend all of most if not all of their income in an effort to meet their needs (shelter, food and transportation), so every dollar provided by SNAP to a low-income family is another dollar that can be spent on non-food items.

Therefore raising SNAP benefits could improve the nutritional quality of participant's diets with increases in the purchase of more nutritious foods. Studies suggest that such incentives can lead to more spending on fruits and vegetables, improved food security and better diets [9]. However, more work needs to be done in low-income communities to bring nutritious foods into their neighborhoods so that they can purchase food that has high nutritious benefit.

Despite the structural barriers discussed previously, WIC has a proven record for improving the health of women and their young children. Unfortunately, families participating in WIC has fallen over the past decade with Black and Latino adults more than twice as likely as white adults reporting that they don't get enough to eat. Connecting more eligible women and young children to WIC could reduce the stark racial disparities also identified among WIC recipients [12].

WIC is funded through the annual appropriations process and for more than two decades has received enough funding to serve all eligible applicants. However, Neuberger [12] suggests that additional targeted investments would enable WIC to delivery services more. In addition, modernizing procedures so that families can participate without taking time off work or bringing children to multiple appoints can work to increase participation. With leadership from federal and state maternal and child health experts, these types of investments could also enable WIC to improve participation by coordinating with other programs such as Medicaid and SNAP.

Social Determinants

As described previously, millions of Americans struggle with food insecurity. Yet, programs are failing to adequately address permanent and efficient ways to ensure that all Americans are food secure. Hunger has increased throughout the pandemic, with as many as 30 million adults and 12 million children living in a household where they may not always get enough to eat (US Department of Agriculture, 2021). The pandemic has also exacerbated the longstanding disparities in vulnerable communities.

Fortunately, the Biden-Harris Administration has committed to ensuring food security. Within the recently passed American Rescue Plan, there are measures that will specifically address food insecurity. However, as the political pendulum swings, these types of policies remain fluid. This project will aim to set forth guidelines of a program evaluation to prove the efficacy of such policies to policy-makers and legislators in an effort to advocate for these types of policies to be made permanent.

Stakeholders

According to the Centers for Disease Control and Prevention (CDC) Program Performance and Evaluation Office (PPEO) [13], key stakeholders for evaluations in public health programs are located in three main groups: Those involved in program operations (management, program staff, partners, funding agencies, and coalition members); those served or affected by the program (patients/clients, advocacy groups, community members, and elected officials); those who are intended users of the evaluation findings (persons in a position to make decisions about the program such as partners, funding agencies, coalition members, the public/taxpayers).

Needed Gap Analyses and Program Evaluation

The literature suggests that while SNAP and WIC are effective programs whose goals are to reduce food insecurity and the negative health outcomes that children, non-senior adults, and seniors in the US experience as a result, there programs are at the whim of policymakers and legislators and need increased funding and improved implementation.

Although SNAP and WIC have been deemed successful, these programs are not without their limitations. To explore what can be done at the state level, this program evaluation will examine two current programs in the State of Michigan whose aim is to reduce food insecurity and the negative health outcomes experienced by children, non-senior adults, and seniors – particular in neighborhoods considered to be food deserts:

SNAP-Ed is a collaborative of statewide partners whose work focuses on improving the health of Michigan's most vulnerable citizens, including children, seniors, families, and communities in crisis. Foundation staff and Network partners lead programs that develop community leaders and empower individuals so that Michigan citizens gain knowledge and access to resources that help them integrate healthy eating and physical activity into daily life. Double Up Food Bucks is a program that allows individuals receiving SNAP benefits to obtain twice the amount of fresh fruit and vegetables. This program matches their benefits dollar for dollar up to $20 a day. Since 2009, thousands of Michigan families have used their Double up Food Bucks to buy more than 18 million pounds of healthy food. The Program primarily works with independent and regional grocery stores and famer's markets with more than 250 participating locations across Michigan.

Continued investment in these programs will greatly enhance investment in local resources and evidence-based programs to develop sustainable capacity for improving health. To better inform stakeholders how these programs can be enhanced, program evaluation is needed to identify the following:

- Gaps in program delivery
    - o Measure program success (does the program's outcomes delivery what is intended?)
- Suggestions for programmatic improvement.
- Framework for best practices for future community initiatives.

Setting specific, measurable, achievable, relevant, and time-bound (SMART) objectives is a mechanism used to plan long-term goals of a project or program. SMART objectives helps maintain the project or program's focus to keep it moving. It can assist with maintaining accountability and keeping within the proposed timeline as well as identifying that proposed accomplishments are being achieved (SAMHSA, n.d.). The PPEO Evaluation format provides a framework that adheres to the SMART objectives.

A comprehensive program evaluation should follow the suggested guidelines of the PPEO [13] to include the following components:

Need: Reduction of food insecurity and the negative health outcomes that children, non-senior adults and seniors in the US (particularly within communities of color) experience as a result
Targets: SNAP-Ed and Double Up Food Bucks Programs will be the programs examined to determine actions and programmatic changes necessary to ensure progress toward reduction of food insecurity
Outcomes: Increased food security and improved health outcomes by improved and better programs to ensure that all Michiganders have access to nutritious and healthy food, and knowledge resources, tools, skills, and motivation needed to choose a diet that supports a healthy future
Activities: Current programs will be evaluated in order to identify gaps in services, inefficiencies and waste.
Outputs: Results of program evaluation will provide suggestions for improved efficiency and delivery of programs providing access to safe, nutritious and secure food to all Michiganders along with increased funding.
Resources/Inputs: Increased governmental funding will be needed in order to ensure that these policies are made permanent. Input from stakeholders will be needed in order to sway policy-makers and legislators that these programs are value-based
Outcomes: Future program outcomes will be assessed with the goal of improving of SNAP-Ed and Double Up Food Bucks delivery to recipients by measuring nutrition improvement among program recipients.

PPEO [13] suggests that outcomes evaluations should assess progress. Depending upon the program and purpose of the evaluation, they should assessed the effectiveness of the outcomes. Program evaluation should be assessed to keep within the proposed budget.

Efficiency: The program evaluation will strive for activities that are efficient in resources
Cost-effectiveness: The program evaluation will provide value to stakeholders while also staying within the proposed budget.
Attribution: The program evaluation will measure what it proposes to measure:

- Measuring improvements in program delivery of SNAP-Ed and Double Up Food Bucks to children, non-senior adults and seniors experiencing food insecurity.
- Measuring reduction in food insecurity
- Measuring nutritional improvement among program recipients

Program Improvement

According to PPEO [13], the ultimate purpose of program evaluation is to use the information to improve programs. It is hoped that this program evaluation would be useful in identifying ways that SNAP and WIC can be improved as well as justify why these programs need additional and sustained funding. Additionally, this program evaluation can be beneficial in demonstrating to legislators and other stakeholders that the increases in funding are feasible and produces positive outcomes. Further recommendations from this program evaluation can assist stakeholders in making future decisions that will be beneficial to ensuring food security and that ultimately the positive health outcomes as a result will be cost cost-saving compared to the dollars that are otherwise spent in addressing the negative health outcomes resulting from food insecurity.

The CDC [14] advises that the ultimate purpose of program evaluation is to use the information to improve programs. Findings should analyze and synthesized for interpretation and judgement. The evaluation results should then be shared with stakeholders to obtain their feedback throughout the evaluation process. This creates an atmosphere of trust among stakeholders. According to the CDC [14], "early in an evaluation, giving and receiving feedback keeps an evaluation on track by keeping everyone informed about how the program is being implemented and how the evaluation is proceeding. As the evaluation, progresses and preliminary results become available, feedback helps ensure that primary users and other stakeholders can comment on evaluation decisions. Valuable feedback can be obtained by holding discussions and routinely sharing interim findings, provisional interpretations, and draft reports."

Findings presented to stakeholders should then be used to evaluate program effectiveness by comparing outcomes from previous years, comparing actual outcomes with intended outcomes, suggesting realistic intended outcomes, assisting with budget adjustments and allocation of resources, and to support annual and long-range planning. Findings can also be utilized to provide direction for program staff and to identify training and technical assistance needs.

A formal evaluation report can then disseminate formally to stakeholders which can be shared with legislators to demonstrate that resources are being well spent, that the program is effective and is worthy of continued funding or increased funding. The report can additionally be used for program promotion and enhance program image, identification of partners for collaboration, and to focus attention on issues important to the program.

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