

Benefits of Subsidizing Fruits and Vegetables within Native American Communities for Preventing and Treating Type 2 Diabetes with SNAP

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Introduction

Native American/Indigenous communities in the Americas have been disproportionately affected by food globalization with the introduction of fast foods and processed foods. This consequently has led to the destruction of many cultural diets and access to them, leading to today's health disparities and food insecurity regarding access to fresh fruits and vegetables for their communities. Food insecurity is a lack of access to enough food for an active, healthy life due to limited financial resources. Across the United States, these disparities are no different with almost 13.5% of American Indian and Alaska Native Adults being diagnosed with diabetes for crude estimates for 2021. This is the highest out of any race and ethnicity. Furthermore, 1 in every 4 Native American households experiences food insecurity as of 2021. Additionally, funds and availability for fruits and vegetables are limited for Native American communities due to a lack of transportation and food deserts.

Objectives

- Bring Awareness to Native American communities that are disproportionately affected by diabetes due to lack of access to affordable fresh fruits and vegetables
- Educate Individuals on the importance of fresh fruits and vegetables in the population's diet to aid in preventing and treating type 2 diabetes
- Provide solutions revolving around subsidizing fresh fruits and vegetables in bridging the access gap
- Illustrate the cost-effectiveness of preventing and treating type 2 diabetes through subsidizing fresh fruits and vegetables

Methods

A literature search was conducted using databases from PubMed, BMC Medicine, Sage Journals, Preventive Medicine Reports, and 4-year reports from the Gus Schumacher Nutrition Incentive program (GusNIP) to identify relevant published papers. The papers used aided in determining and showcasing the positive effects of subsidizing fruits and vegetables for low-income communities that were on SNAP benefits and seeing how this affected their risk of developing type 2 diabetes or worsening their symptoms. Furthermore, examined the financial benefits that could arise from this program

Results

Through partnerships with grocery stores, farmers markets, healthcare clinics, and the Supplemental Nutrition Assistance Program (SNAP) the GusNIP Nutrition Incentive Program was able to subsidize fresh fruits and vegetables through incentives. An incentive comes when a SNAP participant purchases at a food retail outlet in token form, a discount, or a coupon on fruits and vegetables. Incentives at health clinics would be referred to as Produce Prescription (PPR) for fruits and vegetables at retail outlets or clinics. The GusNIP Nutrition Incentive Program found that their Native American and Alaskan Natives participants were 20.80% food secured compared to 79.2% who were food insecure. The program reported 32.5% of first-time participants having food security increasing to 45.5% for participants who have been with the program for more than 6 months. Farm Direct (FD) sites include farmers markets, farm stands, community-supported agriculture (CSA), and mobile markets. Through this partnership, \$21,086,695 of incentives were redeemed which created an economic impact of 43,438,593. Brick-and-mortar locations Included grocery stores, supermarkets, corner stores, and wholesale. Through this partnership, \$30,481,317 of incentives were redeemed which created an economic impact of \$62,791,513. Healthcare clinics included Federally Qualified Health Centers (FQHC), primary care offices, and hospitals. Through this partnership, \$574,176 of incentives were redeemed which created an economic impact of \$1,182,803.

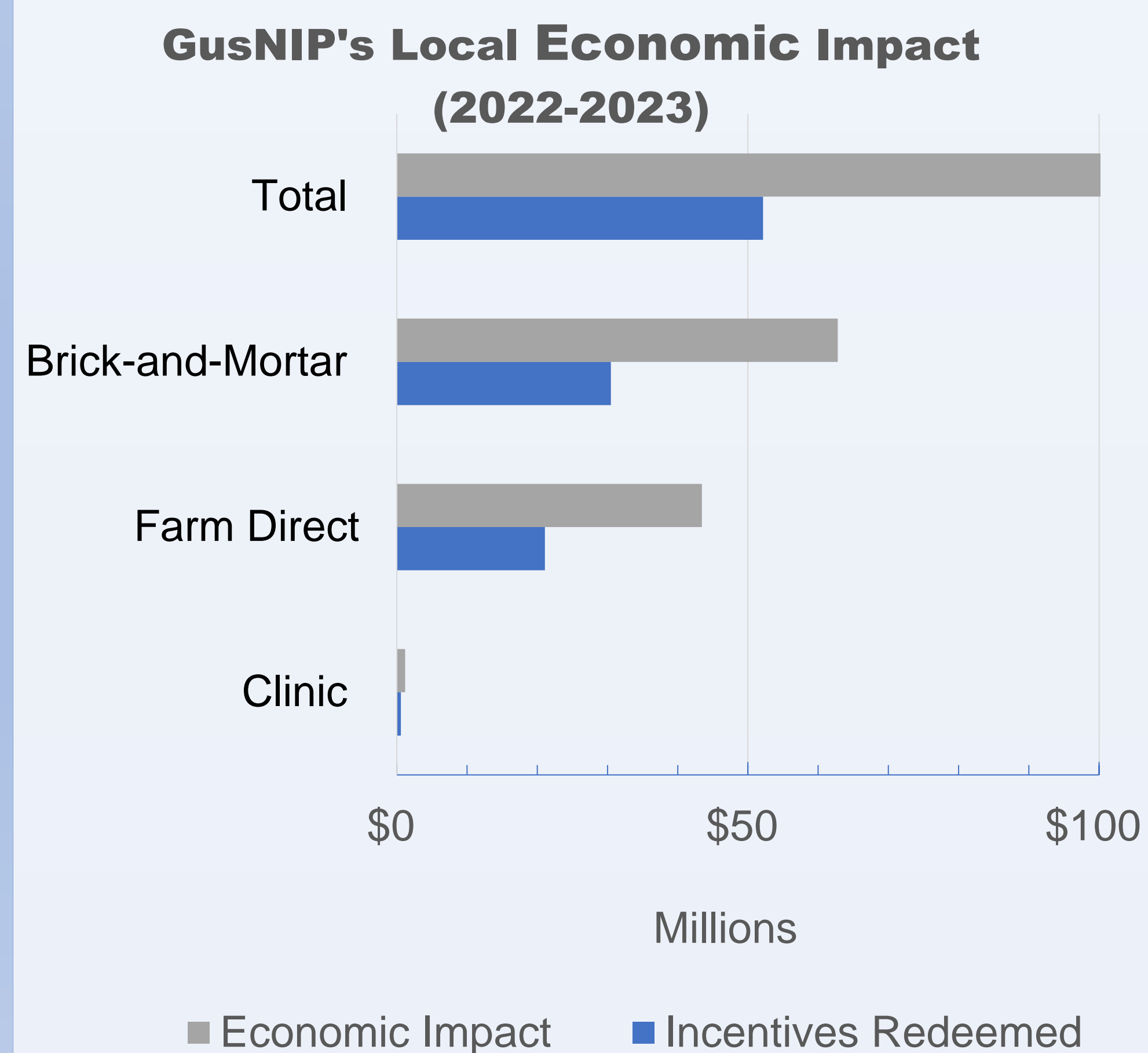


Figure 1 demonstrates the economic impact of subsidizing FV within the community

Results

Furthermore, produce prescriptions shows promising data for preventing type 2 diabetes for low-income families and aiding in mitigating the progression of this disease with a 14% reduction in risk of developing type 2 diabetes. Moreover, studies have shown that having a reduction of prices by 30% is shown to prevent 30 deaths/million due to diabetes. Furthermore, food insecurity showed slightly higher HbA1C for low-income US adolescents which could create a risk of diabetes. Moreover, in research using nationally representative data and a validated microsimulation model, researchers compared 3 subsidizing models within SNAP in their attempts to prevent type 2 diabetes. The first one includes a 30% subsidy for purchases of fruits and vegetables (FV). The second one includes the subsidy of FV with the restriction of sugar-sweetened beverages (SSBs). Finally, the third one named SNAP-plus, included a 30% subsidy for purchases of FV, nuts, whole grains, fish, and plant-based oils and a 30% disincentive for purchases of SSB, junk food, and processed meats. Through these models, they all showed that leveraging healthier eating through the already-existing SNAP could aid in promoting healthier learning habits for low-income Americans and be extremely cost-effective and saving. The third model was found to have greater gains in health and healthcare saving

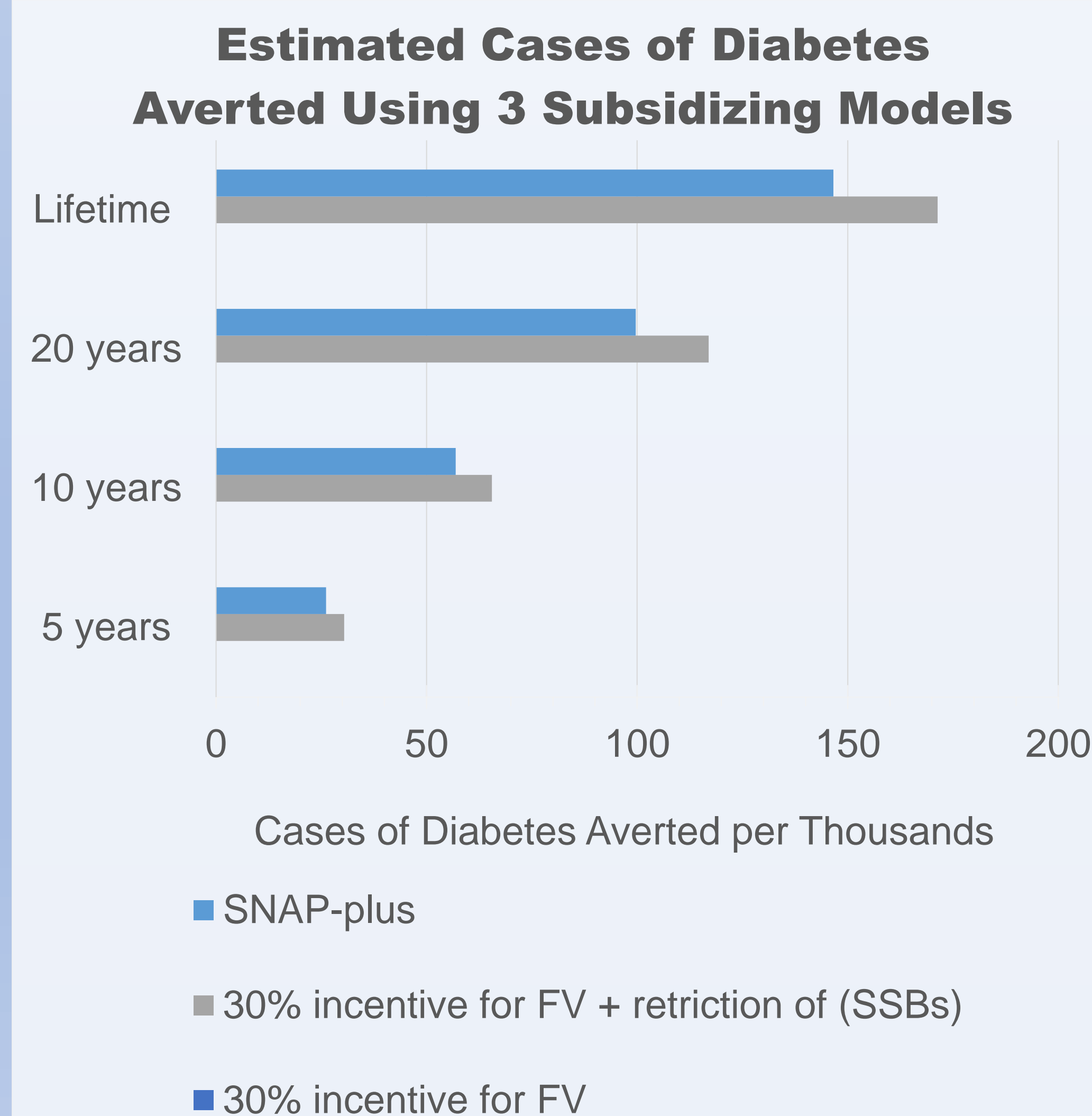


Figure 2 demonstrates the estimated diabetes averted using the microsimulation model

Discussion

Based on the work of the GusNIP Nutrition Incentive Program research looks promising in assisting families and creating a great framework for how subsidies should be distributed to create the most effective turnout of reducing food insecurity for many low-income communities on SNAP benefits. Through this model and partnering it with research using nationally representative data and a validated microsimulation model we see statistically the numerical outcome of how exploring various subsidy models we can improve not only the health outcome of preventing type 2 diabetes but also see the economic benefits of the amount of money we would save from medical expenses.

Limitations

Although these studies assisted the idea that subsidizing fruits and vegetables shows evidence of reducing the risk of developing type 2 diabetes they failed to consider the access of them. Most Native American and Alaskan Natives are far from a grocery store or having access to transportation for it. In a study of the Chickasaw Nation and the Choctaw Nation of Oklahoma reported 56% of participants traveled more than 20 miles round trip to shop for food. Further limitations to subsidizing meals include providing cultural meals for various Native American and Alaskan Natives and satisfying various plates in a healthy manner around the US.

Future Directions

Starting with subsidizing FV for Native Americans and Alaskan Natives is a step in the right direction. With partnering with SNAP, future studies could partner with grocery stores (to bring in cultural foods) and mobile grocery stores to see how bringing the food to the community could bring promising results in preventing the risk of type 2 diabetes.

References Acknowledgments



LEWIS FERGUSON

CDC John R. Lewis Undergraduate Public Health Scholars Program
Dr. James A. Ferguson Emerging Infectious Diseases Graduate Fellowship