Project Phase A: Domain Proposal

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Domain

For our project we are interested in studying nutrition and its effects on the health of the US population. We want to approach this problem from different viewpoints. First, we will look at data about different food-related initiatives, such as school lunch programs or food stamps. Next, we will look at data more directly related to food, such as nutrition data or agricultural and processed food distribution data. We will also look at general society data related to different areas such as family income or school enrollment rates. Finally, we will look at data surrounding the prevalence of metabolic disease (heart disease, diabetes, obesity, high cholesterol, etc.) in the US population across different age groups. We hope to study these different food, society, and health-related areas over a range of time to explore how changes in food distribution, societal environment, or government-led food and health initiatives may have positively or negatively impacted the health of the US population. Our goal is to perform answer these questions on a federal level, comparing data across the 50 states; however, if we are not able to find such data for all the states we may restrict our area of interest to either one specific state or several states representative of different regions in the country.

Questions

1. How has metabolic disease rates in kids (ages 18 and under) been affected by the initiation of the ”No Kid Hungry” initiative since 2010?
2. How has processed food consumption changed during the past two years of the Covid-19 pandemic compared to previous years?
3. What is the prevalence of metabolic disease in kids for states with school enrollment rates less than 75%?
4. How many people by state in families with annual income less than $30000 and at least two working family members have diabetes?
5. How many people had metabolic disease in areas with population less than 100,000 people, grouped by city?
6. How many people above retirement age (65+) with high amount of fresh agricultural produce distribution levels in their state are affected by diabetes?
7. How did the level of childhood obesity change after the initiation of Michelle Obama’s ”Let’s Move” initiative in 2010?
8. What is the average amount of processed food and fresh, agricultural produce consumed by households with annual income less than $30,000?
9. How does sugar beverage consumption affect the level of obesity, grouped by different age groups (child, teen, adult)?

10. Which state has worked to pass the most legislative bills related to food, health and nutrition and how has the rates of metabolic disease changed in this state over the years?
11. What is the state with the highest level of fresh agricultural produce distribution and what is the rate of processed food consumption and obesity by age group in this state?
12. In the state with the highest amount of high cholesterol level across all age groups in 2010, how has the amount of processed food distribution, agricultural food distribution, and number of health initiative legislative actions changed in the subsequent years?
13. In the three states with the lowest mortality rates due to heart disease, what is the average consumption of fresh agricultural and processed food by age group?
14. How has high blood pressure impacted working household members in households with annual income less than $30,000 and greater than 5 members?
15. Given the average income for each state, how many people whose income fall below the average income are enrolled in nutritional assistance programs such as SNAP and WIC?
16. Given the average number of members per family in a given state, how many children who are in families with greater than the average number of members are affected by childhood obesity?
17. In the three states with the highest number of nutrition and food-related legislative bills, what is the level of diabetes, heart disease, and obesity by age group for households with income less than $30,000?
18. How many students with childhood metabolic disease are enrolled in school lunch assistance programs?
19. How many people who consume no more than 5% of their beverage intake as sugary beverages are affected by metabolic disease?
20. For households with less than $30,000 annual income and at least five members, what is the average number of children enrolled in school lunch assistance programs, grouped by race or ethnicity?
21. In the state with the highest level of processed food distribution, what is the age group that consumes the most sugar beverages and of this age group, what is the prevalence of metabolic disease?
22. In the state with the lowest and highest amount of sugar beverage intake, what is the average amount of exercise performed by each age group and what is the level of metabolic disease in each of these age groups?

Data Sources

National School Lunch Program: State Implementation Progress, School Year 2012–2013: Report to Congress
Agricultural Productivity in the U.S.
CDC Nutrition, Physical Activity, and Obesity - Legislation
SNAP Income Limits
Supplemental Nutrition Assistance Program Participation and Cost Data

Supplemental Nutrition Assistance Program (SNAP) Data System
Let's Move Salad Bars to Schools Final
Rates and Trends in Hypertension-related Cardiovascular Disease Mortality Among US Adults (35+) by County, Age Group, Race/Ethnicity, and Sex – 2000-2019
Women, Infants and Children (WIC) Program: Penetration Rates 2009-2012
Heart Disease Mortality Data Among US Adults (35+) by State/Territory and County – 2017-2019
Obesity in California, 2012 and 2013
Fruit and Vegetable Consumption in California Residents, 2012/2013
Sugar-Sweetened Beverage Consumption in California Residents
Nutrition, Physical Activity, and Obesity - Women, Infant, and Child
Public School Enrollment
Food Affordability (CA)
California Adults Who Met Physical Activity Guidelines for Americans, 2013