Food Accessibility and Obesity

Problem:
The confluence of poverty and limited access to nutritious food is a major problem when discussing the issue of obesity. Socioeconomically disadvantaged communities often face barriers to affordable, healthy food options, leading to a reliance on cheap, energy-dense alternatives and a heightened risk of obesity. Addressing this issue requires comprehensive interventions spanning policy changes, community empowerment efforts, and equitable resource distribution in order to promote healthier lifestyles and mitigate the adverse health effects associated with obesity in impoverished areas.

Brief Intro:
Evidently, there is a link between obesity, entrenched poverty, and access to nutritious food. Individuals residing in areas that are considered socioeconomically disadvantaged often confront limited options regarding affordable food choices. The circumstances can lead to a reliance on inexpensive, energy-dense foods that are typically high in unhealthy fats, sugars, and processed ingredients, contributing to an increased risk of obesity. Furthermore, disparities in access to healthcare and even education within these communities can also compound the issue, which would ultimately hinder the efforts to address and manage obesity effectively. Addressing the intricate interplay between poverty, access to nutritious food, and obesity necessitates multifaceted interventions encompassing policy changes, community empowerment initiatives, and equitable access to resources and opportunities.

Approach:
We analyzed data from the Food Access Research Atlas, sourced from the U.S. Department of Agriculture's Economic Research Service (cite). This dataset, derived from the U.S. Census, provided statistics for the overall population and sub-demographics, encompassing poverty rates, transportation access, and food accessibility based on census tracts. We also utilized the U.S. obesity rate data by county for comparative analysis (cite). Both datasets were cleaned and then integrated to explore the intersectionality of factors, aiming to illuminate the public health implications arising from inadequate infrastructure and urban planning.

Our focus centered on the intersection of poverty rates and access to grocery stores in relation to obesity. We concentrated on the East Coast to focus on a detailed assessment of each county and closer look at the correlation between the data. We then queried multiple variables, including looking specifically at rural or urban areas. To enhance accessibility and engagement, we created an interactive dashboard using Tableau to allow for dynamic visualization and exploration of the interconnected data.

Insights:
Certain counties exhibit higher concentrations of poverty, low-income households, limited access to resources, and elevated obesity rates compared to others. These disparities suggest the presence of localized challenges that require targeted interventions. A clear correlation is observed between socioeconomic factors and health outcomes. Counties with higher poverty rates and lower income levels tend to experience higher rates of obesity. Additionally, areas characterized by limited access to resources often exhibit elevated obesity rates, indicating potential barriers to healthy living such as food deserts or inadequate healthcare facilities.

- ➔ The overall poverty rate in an area may not directly correlate with obesity levels. Instead, it is the median family income that significantly influences the ability to afford nutritious food.
- ➔ The correlation between low access to food and obesity rates in counties underscores the critical role of infrastructure and planning in supporting food businesses. Without adequate support, communities may face challenges accessing low-calorie, nutrient-rich foods, leading to higher obesity rates.
- ➔ Rural areas exhibit a higher prevalence of obesity compared to urban areas.
- ➔ Limited vehicle access is associated with a notable increase in obesity rates among populations.
- ➔ In rural areas, the poverty rate tends to be higher than in urban areas, resulting in reduced access to healthy foods. This lack of access exacerbates the obesity issue in these communities.

Limitations:
The primary limitation of this project pertained to the available data. Although we utilized a comprehensive dataset sourced from the census, certain data points were missing, and multiple variables were excluded due to constraints imposed by coded variables. Additionally, the census data proved challenging to manipulate optimally for effective visualization when comparing it to the obesity data.

Conclusions:
The insights provided by the dashboard underscore the importance of targeted interventions tailored to the specific needs of each county. One-size-fits-all approaches may not be effective in addressing the diverse array of challenges faced by communities along the East Coast. Understanding these intersections is crucial for designing holistic interventions that address multiple aspects of vulnerability simultaneously.

Our marketing strategy focuses on addressing the complex relationship between obesity, poverty, and access to nutritious food, particularly targeting city/state officials, mayors, and decision-makers. By leveraging data-driven insights, we aim to empower these stakeholders to

make informed decisions that prioritize public health within their specific states/counties. Our analysis sheds light on the critical implications of infrastructure and urban development in supporting healthier communities. This comprehensive dataset not only aids government officials but also serves as a valuable resource for citizens considering relocation, as it factors in the accessibility of nutritious food and its impact on overall well-being. By advocating for multifaceted interventions and equitable access to resources, our approach aims to catalyze positive change and foster healthier environments for all.

References

Gordon-Larsen P. Food availability/convenience and obesity. Adv Nutr. 2014 Nov 14;5(6):809-17. doi: 10.3945/an.114.007070. PMID: 25398746; PMCID: PMC4224220.