Spatial Analysis of Perinatal Food Assistance Resources in Relation to Food Deserts in North Carolina

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INTRODUCTION

- Access to perinatal resources and healthy foods could limit the impact maternal and infant health during this vulnerable time.
- Geographic Information Systems (GIS) is used to capture, store, and analyze geographic data, and can be used to reveal perinatal food assistance gaps.
- Allowing for informed decisions about intervention and resource placement in the areas where disparities exist.

OBJECTIVES

1. To locate and map government food assistance perinatal resources such as WIC and SNAP offices/retailers throughout North Carolina.
2. Determine if there are spatial correlations between the density (i.e. number of physical locations at the census tract level) of WIC and SNAP offices/retailers in comparison to USDA classified food deserts (low access and low income designation).

METHOD

- A comprehensive list of WIC clinics, WIC-approved vendors, SNAP offices and SNAP retailers available in North Carolina was compiled.
- These resources were geocoded to create a spatial distribution of the locations into ArcGIS Pro by ESRI.
- SNAP/WIC (figures 1 & 2) locations were spatially merged with USDA (food desert classification) and American Community Survey Data to create a relational GIS database.
- Bivariate map products were used to determine the spatial relationship between low income low access census tracts and WIC/SNAP locations.

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RESULTS

- Preliminary findings show limited WIC and SNAP offices/retailers located in rural, underserved areas within food deserts in NC. Spatially, limited access to resources in the far most western and eastern regions of NC are prominent but also vary throughout the state.

DISCUSSION & CONCLUSIONS

- This project represents an interdisciplinary collaboration: Nutrition and Health Care Management, Social Work, Nursing, Exercise Science, and Geography in order to collect and map multiple perinatal resources and examine their relationship to existing infrastructure and known food access data (Food Deserts).
- GIS maps can aid in critical evaluation of WIC and SNAP offices/retailers availability, density and their relationship to food deserts which can help to identify areas of greatest need in order to tailor services, outreach, and advocacy for more support.
- Dietitians and other community field workers will have proof of concept to write to community stakeholders to acquire more support for government food assistance and perinatal resources.