INTRODUCTION

- When discussing health outcomes, poverty is a risk factor for the spread of infectious diseases for reasons such as a deprivation of food and shelter, lack of access to health care and other essential services, and the inability of an unstable community to properly socialize youth. This results in engagement in risky behaviors, such as having multiple sexual partners and substance abuse, that are associated with propagation of sexually transmitted infections (STIs) [1]. Research has shown that residential segregation by race can concentrate poverty and other negative influences associated with the segregated group. Where poverty is high, so are rates of STIs [2].
- This establishes that there health disparities in disease epidemics are not solely the result of individual risk behavior but are outcomes of functioning systems [3].

STUDY AIMS

1. To examine what demographic and behavioral factors at the level of the individual are associated with prevalence of STIs as a health outcome.
2. Analyze how certain neighborhood measures of poverty and diversity interact with individual level characteristics to explain STI outcomes.

METHODS

Sample & Measures

- Sample was taken from a dataset collected by Miriam Hospital in Jackson, MS. Participants were divided into neighborhoods based on their reported residential zip code and merged with neighborhood demographics data collected from City surveillance data for zip codes in Jackson, MS.
- 1542 individuals (95% African American; 62.4% female, 37.6% male) involved in the survey met the age eligibility requirement (18+) and were present for an STI/HIV screening as a publicly funded STI clinic between Jan and June of 2011.
- Response status: STI status was coded dichotomously as ever having any STIs (gonorrhea, chlamydia, trichomonas, herpes, syphilis, NGU, MFC, or PID) in one’s lifetime.
- Predictor Variables: Number of lifetime partners was categorized into 4 levels (1, 2-5, 6-10, 11+);
- Incarceration status was coded as a binary variable (yes/no).
- Length of time lived in current place of residence was measured as dichotomous (<1 year, 1 year or 1+).

RESULTS

- 58% of the population had ever had STIs in their lifetime; 41% of people had more than 10 lifetime partners; 40% receive public assistance; 21% have a history of incarceration.
- 43% is the average percentage of Blacks in each neighborhood.
- X² tests show higher STI rates in poor populations as neighborhoods get less diverse or have a higher percentage of Blacks (Graph 1).
- Logistic regression results showed no significant relationships between level of education, engagement in specific sexual risky behaviors, incarceration status and STI prevalence.
- Multilevel structural modeling showed that individuals within neighborhoods were no more related than individuals between neighborhoods (variability estimate: 8.14e-07) and across different levels of black population (2.37e-10).
- Logistic regressions showed no significant interactions between level of black population and all other factors nor between population below the poverty line and all other factors.

ACKNOWLEDGEMENTS:

Jenifer Rose, QAC Apprenticeship Program, McNair Fellows Program

Table 1: Logistic regression results for 4 models: behavioral, demographic, neighborhood, and interactions.

<table>
<thead>
<tr>
<th>INDIVIDUAL</th>
<th>Behavioral</th>
<th>Demographic</th>
<th>Neighborhood</th>
</tr>
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<tbody>
<tr>
<td>O.R.(SE)</td>
<td>O.R.(SE)</td>
<td>O.R.(SE)</td>
<td></td>
</tr>
<tr>
<td>Past Year Concurrency</td>
<td>1.495 (1.19)**</td>
<td>1.218 (1.97)</td>
<td></td>
</tr>
<tr>
<td>Exchange of sex for favors, gifts, etc</td>
<td>2.839 (3.31)**</td>
<td>2.603 (1.95)**</td>
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</tr>
<tr>
<td>Engagement in Sexual Risky Behavior</td>
<td>1.013 (0.92)</td>
<td>1.066 (0.02)</td>
<td></td>
</tr>
<tr>
<td>Number of Lifetime Partners</td>
<td>1.592 (1.46)***</td>
<td>1.011 (0.02)</td>
<td></td>
</tr>
<tr>
<td>Incarceration Status</td>
<td>.886 (.182)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Assistance Status</td>
<td>2.788 (1.50)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of Time in Current Home</td>
<td>1.762 (1.49)***</td>
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DISCUSSION

- Most predictors of STI prevalence occurred at the level of the individual, as consistent with literature examining sexual concurrency and engaging sexual risky behaviors.
- While previous studies have demonstrated the impact of social and environmental factors on health outcomes, this study looked specifically at STI prevalence as an outcome. People who stayed in their place of residence a year or long were more likely to get STIs. Less turnover within a neighborhood could be an indicator of higher social stability, which has been shown to be correlated with lower STI rates [4].
- LIMITATIONS Observations with no zip codes and no additional neighborhood data were systematically removed in order to keep the descriptive and analysis based on the actual sample; however this meant only 63% of total observations surveyed was analyzed, and only 33 out of 105 zip codes was included. This renders results less representative of Jackson, MS.
- Future studies should divide neighborhoods by geographical proximity, providing a more accurate clustering of individual characteristics and neighborhood level social determinants as a means to predict STI outcomes.

REFERENCES