2015

Assessment of the Neighborhood Environment and its Association with Gestational Age at Birth

Brittaney A. Castro
Virginia Commonwealth University

Follow this and additional works at: https://scholarscompass.vcu.edu/uresposters

© The Author(s)

Downloaded from
https://scholarscompass.vcu.edu/uresposters/169

This Book is brought to you for free and open access by the Undergraduate Research Opportunities Program at VCU Scholars Compass. It has been accepted for inclusion in Undergraduate Research Posters by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.
Assessment of the Neighborhood Environment and its Association with Gestational Age at Birth

Brittany Castro¹, Sara Wagner², Ananda Amstadter³, Timothy P. York²,⁴
¹Departments of Psychology, ²OB/GYN, ³Psychiatry, ⁴Human and Molecular Genetics

Precis: Both genetic and environmental factors contribute to gestational age at birth. Yet, the increased environmental heterogeneity estimated in African American populations is thought to explain the marked disparity in race-specific mean gestational age at birth. The aim of this study is to assess objective and subjective measures of the neighborhood environment and their association with gestational age at birth.

Introduction

Preterm birth (<37 completed weeks of gestation) is one of the most persistent of health disparities and accounts for five times more African American versus European American infant death. The preterm birth rate in African American (18.1%) is nearly twice as high compared to European Americans (11.2%). Recent studies have shown that a major contributor to this disparity is the greater environmental heterogeneity seen in African American populations (York et al., 2010).

The goal of this study is to examine how the measured neighborhood environment influences race-specific gestational age at birth (GA) by:

1. Assessing the degree of neighborhood heterogeneity that exists between self-identified race
2. Estimating the extent these sources are associated with GA
3. Comparing both a subjective and objective measurement of the neighborhood environment
   1. Objective Measure: Neighborhood Inventory for Environmental Typology (NIfETy)
   2. Subjective Measure: Neighborhood Environmental Survey (NES)

Primary Hypothesis: Women who score higher in perceiving their neighborhood environment as safe/positive will have on average a higher gestational age at birth.

Results

1. This data supports that there is no statistically significant differences in neighborhood measures between races (Table 1).
2. Neighborhood measurement of drug involvement and disorder were negatively correlated with gestational age, while the neighborhood measurement of cohesion was positively correlated with gestational age (Table 2).
3. A significant negative correlation was estimated between Drug involvement and Cohesion. Drug involvement and disorder were statistically significant and positively correlated. Finally, cohesion and disorder were negatively correlated, however, not statistically significant (Table 2).
4. These results support the primary hypothesis that women who score higher in perceiving their neighborhood environment as safe/positive have on average a higher gestational age at birth.

Table 1. Sample characteristics by self-reported race

<table>
<thead>
<tr>
<th>Race</th>
<th>AA</th>
<th>EA</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA</td>
<td>M=274.2 SD=11.5</td>
<td>M=275.3 SD=7.5</td>
<td>0.715</td>
</tr>
<tr>
<td>Mom's Age</td>
<td>M=27.3 SD=4.9</td>
<td>M=31.1 SD=6.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Cohesion</td>
<td>M=1.4 SD=1.1</td>
<td>M=1.3 SD=0.8</td>
<td>0.965</td>
</tr>
</tbody>
</table>

Table 2. Pairwise Spearman correlation coefficients

<table>
<thead>
<tr>
<th>DI</th>
<th>COHESION</th>
<th>DISORDER</th>
<th>GA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug</td>
<td>-0.457 *</td>
<td>0.411 *</td>
<td>-0.305 *</td>
</tr>
<tr>
<td>Cohesion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disorder</td>
<td></td>
<td>-0.214 *</td>
<td>0.407 *</td>
</tr>
<tr>
<td>GA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

1. Although it is generally accepted that there exists mean differences in gestational age between racial categories, this pilot data reported no differences likely due to the small sample size.
2. These results show that experiences that positive correlate with longer gestational ages, while negative experiences that are negative correlate with shorter gestational ages.
3. There was statistically significant agreement between the subjective NES ratings and the objective NIfETy ratings.

This preliminary data shows that both subjective and objective measures of the neighborhood environment were more correlated with gestational age than self-reported race.

• A limitation of this pilot study is the small sample size available for data analysis. Although interesting correlations were obtained, further analyses were not attempted that could clarify the nature of these relationships by, for instance, adjusting for covariate measures.

Works Cited


Acknowledgements

This PSYC 494 project was funded by a National Institute on Minority Health and Health Disparities (NIMHD) P60 grant P60MD002256, Sub: 6463 (PI: York)