Mapping Georgia Community Pharmacies and Clinics: An Evaluation of Diabetes Mellitus Outcomes and access to Care

Brittny Nutt, Rebecca Stone, PharmD, BCPS, BCACP, FCCP, Jayani Jayawardhana, PhD, Meagan Duever, MA, MLIS, Blake Johnson, PharmD, MPH, BCACP

1 University of Georgia College of Pharmacy, Athens, Georgia
2 University of Kentucky College of Public Health and College of Pharmacy, Lexington, Kentucky
3 University of Georgia Libraries, Athens, Georgia

Background

- Over 12% of adult Georgians have diabetes
- Almost 60% of Georgia counties are considered medically underserved, with the majority being rural
- A higher prevalence of the common risk behaviors that increase type 2 diabetes development are seen in rural communities
- Early intervention can mitigate or delay progression of macrovascular and microvascular disease associated with diabetes mellitus

Objective

This study sought to evaluate Georgia care access points, compare county health outcomes and factor rankings to diabetes mortality, and determine if care access points would improve if community pharmacies were to provide diabetes-related services.

Methods

Data collection sources

- Health outcome and factor rankings
  - 2020 Health Ranking report Robert Wood Johnson Foundation and the University of Wisconsin Population
  - Georgia Department of Public Health Data warehouse

Access to care to safety net clinic or pharmacy map generation

- Geographic information system librarian utilized ArcGIS Online’s Create Drive-Time Areas analysis tool and the 2019 census block group data

Statistical analysis

- Care access point difference was analyzed using a two-sample t-test
- Health outcomes were evaluated using ordinary least square regression analysis
- Statistical analysis was completed using STATA version 14.2

Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Diabetes Mortality Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Outcome ranking - Top 50%</td>
<td>-1.657 -8.366* -1.001*</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>1.354*** 1.001**</td>
</tr>
<tr>
<td>Percent Black Population</td>
<td>0.019 -2.070* 0.0120</td>
</tr>
<tr>
<td>Percent Other Race Population</td>
<td>0.029 -1.112***</td>
</tr>
<tr>
<td>Health Factor Ranking – Top 50%</td>
<td>-8.780* 12.34***</td>
</tr>
<tr>
<td>Constant</td>
<td>-80.44* -78.75*</td>
</tr>
<tr>
<td>Observations R squared</td>
<td>0.3 0.242</td>
</tr>
</tbody>
</table>

Table 1: Diabetes mortality prevalence (out of 100) compared to variables to determine statistical differences of combinations of variables on prevalence.


doi: 10.1002/dmrr.3410

<table>
<thead>
<tr>
<th>5 Mile Driving Distance %</th>
<th>15 Minute Drive Time %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacies</td>
<td>77.81% 95.07%</td>
</tr>
<tr>
<td>Safety-net Clinics</td>
<td>47% 82.92%</td>
</tr>
</tbody>
</table>

If community pharmacies were to provide primary care services, 94.9% of Georgia counties would experience more than 50% increase in care access points.

Implications

- Community pharmacies are well-positioned to address diabetes mellitus and associated comorbid risk factors that lead to diabetes progression.
- Leveraging Georgia pharmacists to provide primary care services can address current care access issues in the state and improve the quality of care for persons living with diabetes.
- Community pharmacists may enter state collaborative drug therapy modification protocols to deliver primary care diabetes-focused services.
- Collaborative practice agreements would increase care access points and potentially address health disparities seen in Georgia.

References

6. DPS. 2018.2018.05-06.01.8.00.00.00.
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<td>Poverty Rate</td>
<td>1.354***</td>
</tr>
<tr>
<td>Percent Female</td>
<td>186.6**</td>
</tr>
<tr>
<td>Rural County</td>
<td>-0.800</td>
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<tr>
<td>Percent Black Population</td>
<td>0.0193</td>
</tr>
<tr>
<td>Percent other Race Population</td>
<td>-1.285</td>
</tr>
<tr>
<td>Health Factor Ranking – Top 50%</td>
<td>-80.44*</td>
</tr>
<tr>
<td>Constant</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Observations R squared 0.3 0.288

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