Diabetes & Hypertension among Rural Hispanics: Disparities in Diagnostics and Disease Management

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Executive Summary

Evidence indicates that rural individuals are more vulnerable to poor health outcomes and undiagnosed disease. Limited access to health care services results in fewer medical visits, under-diagnosis, and less optimal health outcomes. Rural and minority populations are particularly vulnerable to the consequences of lower access to care. This project investigated the association of Hispanic ethnicity and rural residence on rates of diagnosis of diabetes and hypertension, indicators of poor medical control (i.e. glycemic control, blood pressure control, lipid control) among people with these diagnoses, and likelihood of having the undiagnosed conditions.

We analyzed of the National Health and Nutrition Examination Survey (NHANES) III, 1988-1994. NHANES III collected multi-stage, stratified, clustered samples from the US civilian, non-institutionalized population. This data allowed us to make population estimates for US adults. With assistance from the National Center for Health Statistics, we classified non-Hispanic white and Hispanic adults as living in a metropolitan statistical area (urban) or outside a metropolitan statistical area (rural). Significant findings:

Diabetes

- Rural Hispanics had a greater prevalence for diagnosed diabetes (8.2%) than urban Whites (4.6%), rural Whites (6.5%), or urban Hispanics (4.5%) with $p<0.01$.
- Urban Hispanics were most likely to have undiagnosed diabetes, with a prevalence of 3.7%, versus 2.3% of rural whites, 2.8% of urban whites, and 2.7% of rural Hispanics ($p=0.04$).
- Approximately 40% of White or Hispanic Americans with diagnosed diabetes have poor glycemic control. This prevalence is not significantly different between rural and urban, Hispanics and Whites.
- Control of hypertension among those with diagnosed diabetes differed between groups, with 37% of urban whites, 29% of rural whites, 28% of urban Hispanics and 45% of rural Hispanics having a measured systolic blood pressure greater than 140 mm Hg ($p=0.01$).
    - In regression models controlling for relevant variables including obesity, health status, access to care, education, income and insurance, compared to rural Hispanics, rural and urban Whites with diagnosed diabetes were not significantly more likely to have better glycemic, blood pressure, or lipid control.

Hypertension

- Hispanics, both urban and rural, had lower prevalence of hypertension (18.2% and 20.5%, respectively) than their White counterparts (urban 23.3%, rural 28.5%) with $p<0.01$.
- Undiagnosed hypertension, however, was greatest in rural Hispanics (9.2%), least in urban Hispanics (5.9%), and moderate in Whites (urban 7.3%, rural 8.4%) with $p<0.01$.

- Urban Hispanics with diagnosed hypertension are least likely to have uncontrolled blood pressure (34.9%). Urban Whites, rural Whites, and rural Hispanics all have higher rates of uncontrolled blood pressure (45.7%, 44.4%, and 42.9%, respectively) with p=0.01.

- In regression models controlling for relevant variables, compared to rural Hispanics, rural and urban Whites with diagnosed hypertension were not significantly more likely to have better blood pressure or lipid control.
- In regression models controlling for relevant variables, rural and urban Whites were no more or less likely to have undiagnosed hypertension or diabetes than rural Hispanics.

The study found modest disparities in health, with rural Hispanics having a higher prevalence of diabetes. Among persons with diagnosed diabetes or hypertension, rural Hispanics did not experience poorer glycemic or blood pressure control. Rural Hispanics with diabetes did exhibit poorer control of co-morbid hypertension than did whites. While overall disparities were small, differences in blood pressure control experienced by rural Hispanics still merit further study to determine whether problems stem from inadequate patient compliance with recommended drug therapies or from inadequate monitoring and prescribing by rural health care providers. Distance to pharmacy services, cost of medications, reluctance to discuss cost of medications with a provider, or aversion to side effects may all play a role.