

Hypertension Prevalence Among an Ethnically Diverse Patient Population in a Southwest Medical Network

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Introduction

Roselle flower (*Hibiscus sabdariffa* L., HS) tea has been utilized by people around the world, including Latinos or Hispanics, as a beverage and specifically for its potential antihypertensive effects. Animal studies and clinical trials have confirmed that the HS is effective at lowering blood pressure¹. The use of HS for treatment of hypertension may improve compliance with therapy among Hispanics.

In preparation for a clinical trial to evaluate the efficacy of HS tea when compared with a thiazide-type pharmaceutical and to assess treatment preferences, we sought to identify a sufficient pool of self-identified Hispanic patients diagnosed with hypertension in a Southwest United States (SW) medical network.

The hypotheses were:

1. The proportion of Hispanic patients would be greater than national averages due to regional history and proximity with the Mexican border
2. The prevalence of diagnosed hypertension among Hispanics would resemble national prevalence rates

Methods

De-identified billing code data representing all clinic visits within a SW medical network from December 2013-October 2014 was obtained. The total number of patients in each self-identified racial and ethnic group was determined and the patients in each group with hypertension were identified by using 4 specific ICD-9 codes (V81.1, 796.2, 401.1, 409.1). Then the medical network data was compared to county and national census data^{2,3}.

Results

There were a total of 1.05 million clinic visits in the SW medical network, by 105,137 individual patients (both adults and children), over the 11 month period.

Table 1. Patient Population in SW Medical Network Compared to 2013 Pima County and U.S. Population Estimates by Ethnicity and Race

Ethnicity/Race	% of Patients out of All Patients	% of People in Pima County ³	% of People in U.S. ³
Hispanic	32.1	35.7	17.1
White	46.7	53.9	62.6
American Indian	2.5	4.2	1.2
Black	4.3	4.0	13.2

Patients were seen for hypertension in over 3% of visits; 17.5% of all adults >18 years had hypertension diagnosis.

Table 2. Adult Hypertension Prevalence in SW Medical Network and General U.S. Population by Ethnicity and Race

Ethnicity/Race	# of Patients	% of Patients w/ HTN	% of People in U.S. w/ HTN ²
Hispanic	22,094	15.6	26.0
White	41,968	19.7	28.0
American Indian	1,833	17.8	**
Black	2,974	18.8	42.1
All	80,254	17.5	29.1

** not reported due to CDC sample limitations

Conclusions

The percentage of patients within each ethnic group were similar to data from Pima County, with the exceptions being Hispanics and whites, which were both lower within the network. The discrepancy in Hispanics and whites may be due to overlap in patient self-description and a large network group of 'unknown' or 'other'-reported patients, both would influence final result. However, the percentage of Hispanics as patients in the medical network, was higher, as predicted, when compared to the overall U.S. population.

The prevalence of hypertension among different racial/ethnic groups, was much lower than expected when compared to national averages based off the most recent 2011-2012 national data. These result disparities may be due to under-diagnosis of the condition within the SW medical network and/or poor capture of chronic health conditions in the billing code data.

Despite these findings, it was demonstrated that the number of Hispanic hypertension patients (n=3433) in the medical network is sufficient for recruitment for a comparative efficacy clinical trial.

References

1. Hopkins, et al, *Hibiscus sabdariffa* L. in the treatment of hypertension and hyperlipidemia: a comprehensive review of animal and human studies, *Fitoterapia* **85**, 84-94 (2013).
2. Nwankwo, et al, *Hypertension Among Adults in the United States: National Health and Nutrition Examination Survey, 2011-2012*, NCHS Data Brief, **133**, 1-8 (2013).
3. U.S. Census Bureau, *U.S. and Pima County QuickFacts, 2013*, State and County QuickFacts, www.quickfacts.census.gov (Accessed 5/27/2015).