**American Heart Association Simple 7: Nationwide Analysis of 2019 BRFSS Data**

Authors: Azfar A. Vahidy

**Introduction:** The American Heart Association (AHA) looks to improve cardiovascular health and limit the amount of stroke patients through the AHA Simple 7 which focuses on controlling blood pressure, cholesterol, blood sugar, weight, smoking, exercise, and diet.

**Methods:** We analyzed2019 Behavioral Risk Factor Surveillance System (BRFSS) data and flagged individuals who reported being diagnosed with stroke. BRFSS is annually conducted survey of health-related conditions / behaviors among community dwelling US adults (≥ 18 years) representing all 50 states, district of Columbia and US territories.

Among stroke individuals we identified individuals with self-reported features of cardiovascular disease (CVD) (diabetes, hypertension, BMI ≥ 25 kg/m2, hypercholesterolemia, smoking, poor eating habits, and lack of exercise). Stroke individuals with 5 or more CVD features were categorized as ‘High CVD’ (HCVD) based on prior validated studies. We conducted a univariable analysis for socio-demographic (age, sex, race, education, income, marital and employment status, geographic US division and residence in US stroke belt) and healthcare utilization (insurance status and frequency of healthcare visits) variables associated with HCVD. Residence in stroke belt was defined as living in the states of North Carolina, South Carolina, Georgia, Tennessee, Alabama, Mississippi and Arkansas, and Louisiana as done in the national cohort study, REGARDS (Reasons for Geographic and Racial Differences in Stroke).

We used survey design methods and report nationally representative counts and proportions for overall stroke and CVD prevalence and factors associated with HCVD among stroke individuals. We fit survey design multivariable logistic regression models to evaluate independent association between HCVD and various sociodemographic / healthcare utilization factors. Adjusted Odds Ratios (aOR) and 95% confidence intervals (CI) are reported.

**Results:** Based on 2019 BRFSS data, the estimated national count of stroke individuals is 8,570,876 translating into a nationwide prevalence of 3.4% among US adults (and 7.9% among those ≥ 65 years). Individuals who are divorced, separated, non-Hispanic Black (NHB) race, Native American race, unemployed, homemakers, retired, unable to work, had poor physical or mental health, live in homes with 3 and 4 adults, residence in the East South-Central division and the stroke belt region were associated with HCVD in our univariable analyses. Whereas a lower proportion of stroke individuals with income over $25,000 and those who got a checkup in the past 2 years belonged to the HCVD category. In our fully adjusted multivariable logistic regression model males began to demonstrate statistically significant association with HCVD aOR (CI) 1.26 (1.00 – 1.59). Moreover, Asian American and Pacific Islanders (AAPI) vs. Non-Hispanic White (NHW) demonstrated significantly higher likelihood of HCVD, aOR (CI) AAPI vs. NHW: 4.74 (1.25 – 17.95). Residence in the West South Central division aOR (CI): 1.73 (1.05 -2.85), East North Central division aOR (CI): 1.64 (1.11 – 2.43), East South Central aOR (CI): 2.29 (1.37 – 3.83), South Atlantic aOR (CI): 1.74 (1.18 – 2.57) was also independently associated with significantly higher likelihood of HCVD. Healthcare utilization patterns and having healthcare insurance was not significantly associated with HCVD in our adjusted model. Figure 1 provides graphic representation of socio-demographic factors associated with HCVD among stroke individuals based on our model. Updated comparative analyses for 2020 BRFSS data will be presented.

**Conclusion:** Updated national stroke prevalence rates are provided. The burden of CVD among stroke individuals continues to be significantly high and seems to disparately affect AAPI population along with residents in specific divisions. These analyses are important to identify and target high-risk population sub-groups.

**Figure 1:**