



PERSISTING DISPARITY IN PREVALENCE OF DIABETES IN THE APPALACHIAN REGION OF KENTUCKY BETWEEN 2016-2020:



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Abstract

Background: People in the Appalachian region of Kentucky face serious and unique health challenges influenced by socioeconomic status, rural location, and culture. Diabetes prevalence in the Appalachian region of Kentucky is consistently higher when compared to other regions. **Objectives:** Study the trends of diabetes in Appalachia Kentucky in the last five years and compare it with the prevalence rate in Non-Appalachian Kentucky. **Methods:** We obtained data on health-related risk behaviors, chronic health conditions, and use of preventive services from the 2016-2020 Behavioral Risk Factor Surveillance System (BRFSS), a cross-sectional telephone survey. Prevalence of diabetes in the United States, Kentucky, Appalachian KY, and Non-Appalachian KY was obtained. Data on variables such as gender, age, education, income, BMI, smoking status, and health insurance was also obtained.

Results: In comparison to the United States (10.5-10.9%), the prevalence rate of diabetes was higher in Kentucky (12.8-13.7%) throughout 2016-2020. Diabetes prevalence was even higher in Appalachian KY (15.8-17.2%) compared to Non-Appalachian KY (11.2-12.5%). This gap in diabetes prevalence rate has remained persistent over the last 5 years. Further analysis of socioeconomic variables identified higher prevalence of diabetes between age 50-64 years, education level below high school, and annual income below \$25,000 in Appalachian vs Non-Appalachian Kentucky. **Conclusion:** This study highlights the persisting prevalence of diabetes in Appalachian Kentucky. Adults with diabetes in the Appalachian Region of Kentucky have lower education and lower annual income. Efforts that focus on these differences could affect diabetes prevalence in the future.

Hypothesis - Purpose

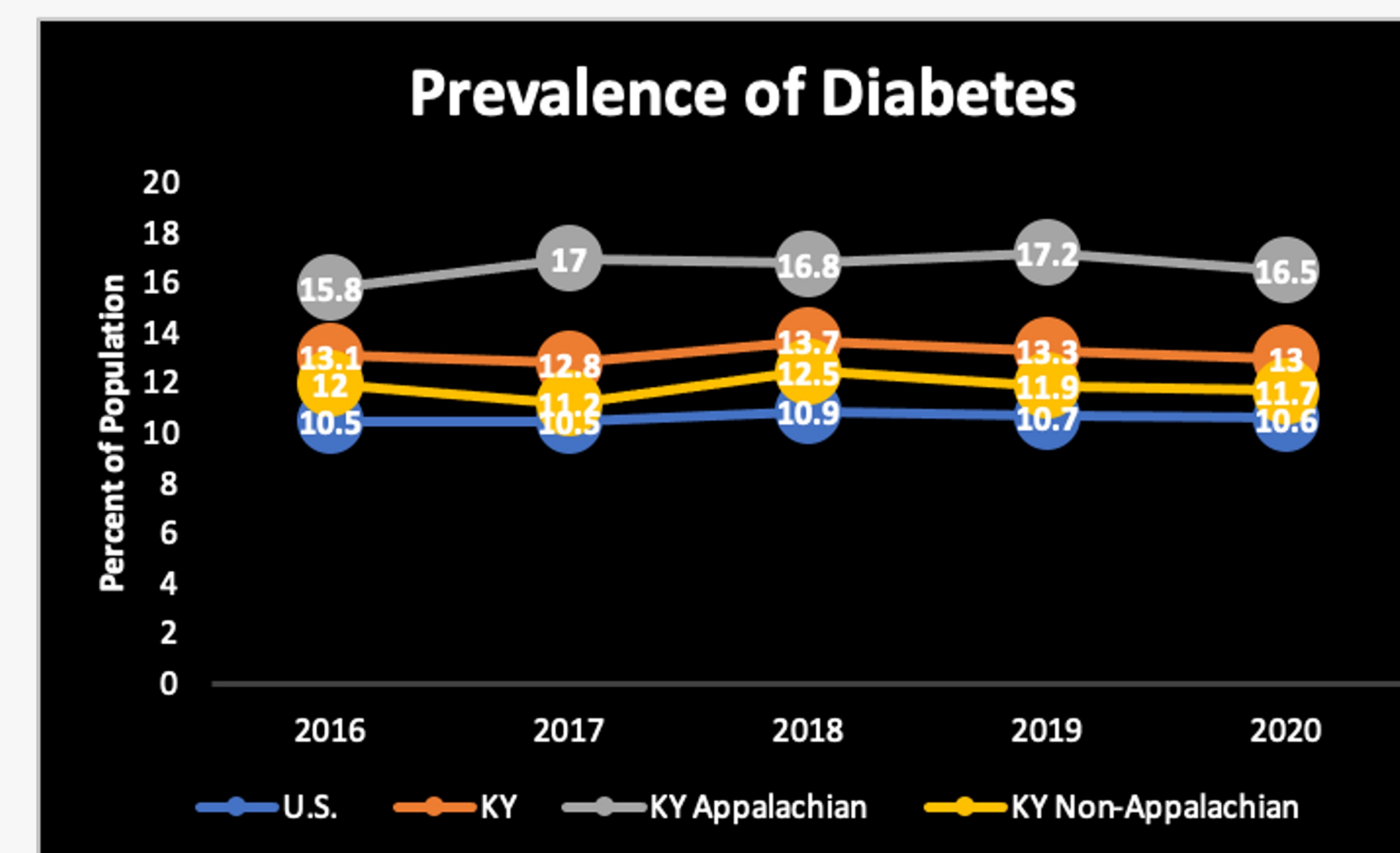
Purpose: To determine the prevalence of diabetes in the Appalachian region of Kentucky, the non-Appalachian region of Kentucky, the state of Kentucky as a whole, and then the United States as a whole. The prevalence would be studied over five years to examine the trends in these populations. One other purpose is to determine potential factors that influence the higher prevalence of diabetes in the Appalachian region of Kentucky. By determining these factors, physicians, local and state health departments, and the community can work together to offer innovative solutions that are specifically catered to the Appalachian Region of Kentucky, as they have a unique culture and location.

Hypothesis: The Appalachian Region of Kentucky has a higher prevalence rate of diabetes when compared to the United States, Non-Appalachian regions of Kentucky and the state of Kentucky due to lower levels of education, lower income, and increased rates of obesity.

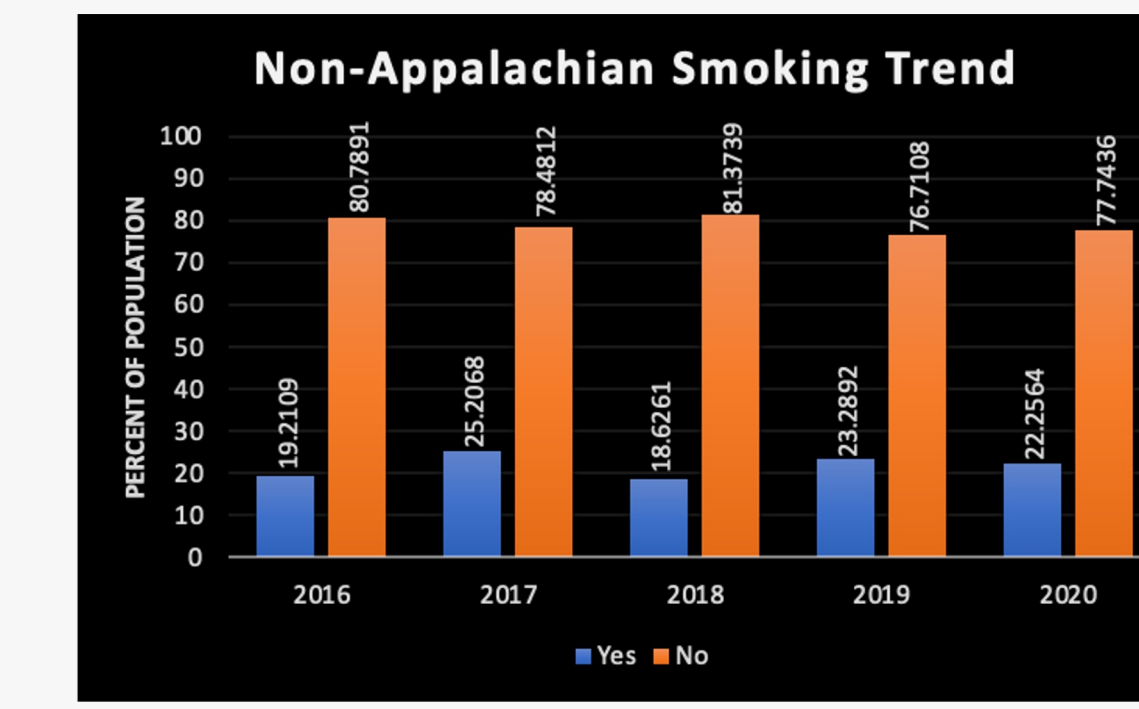
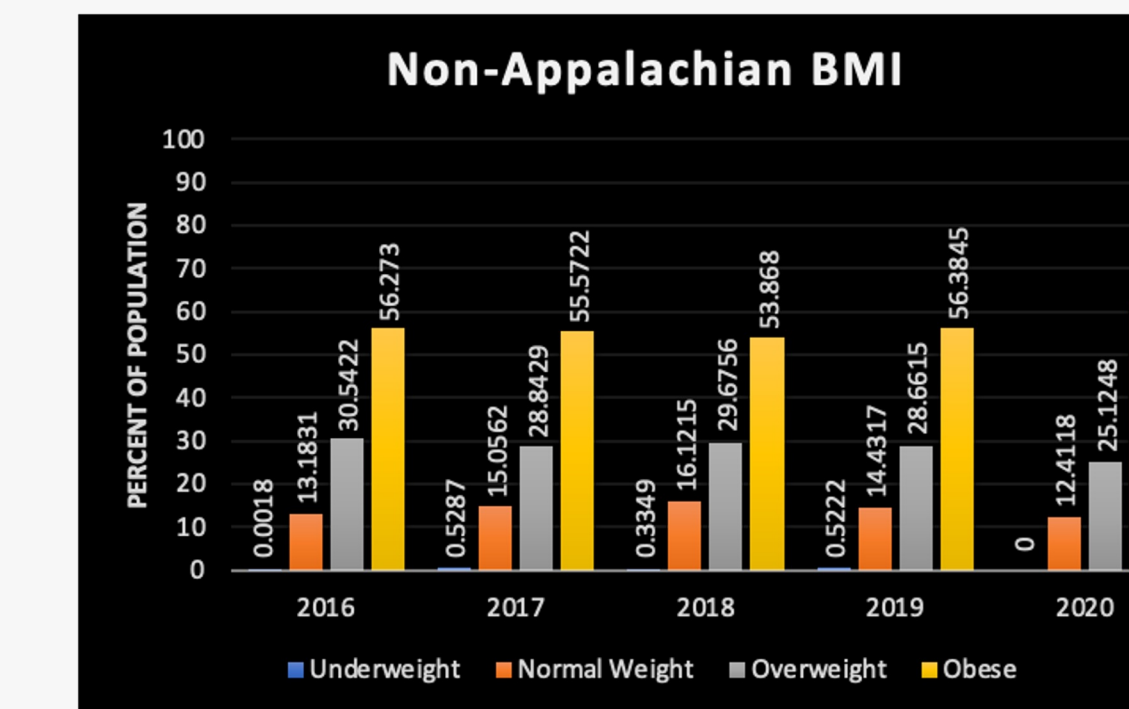
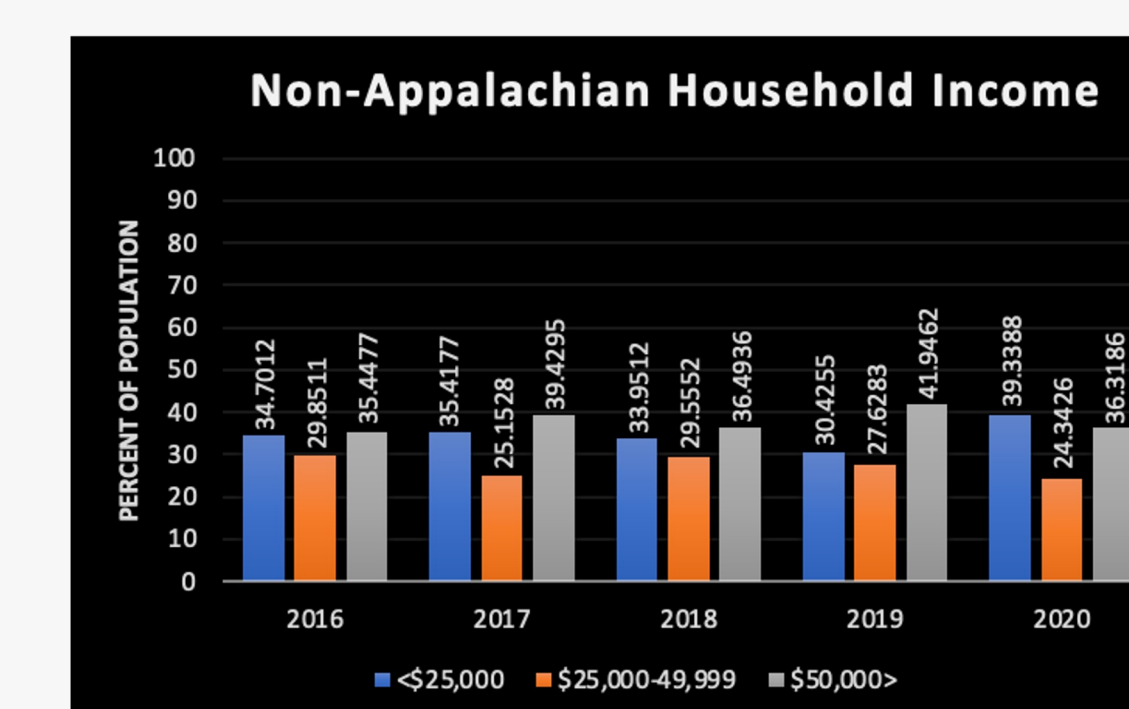
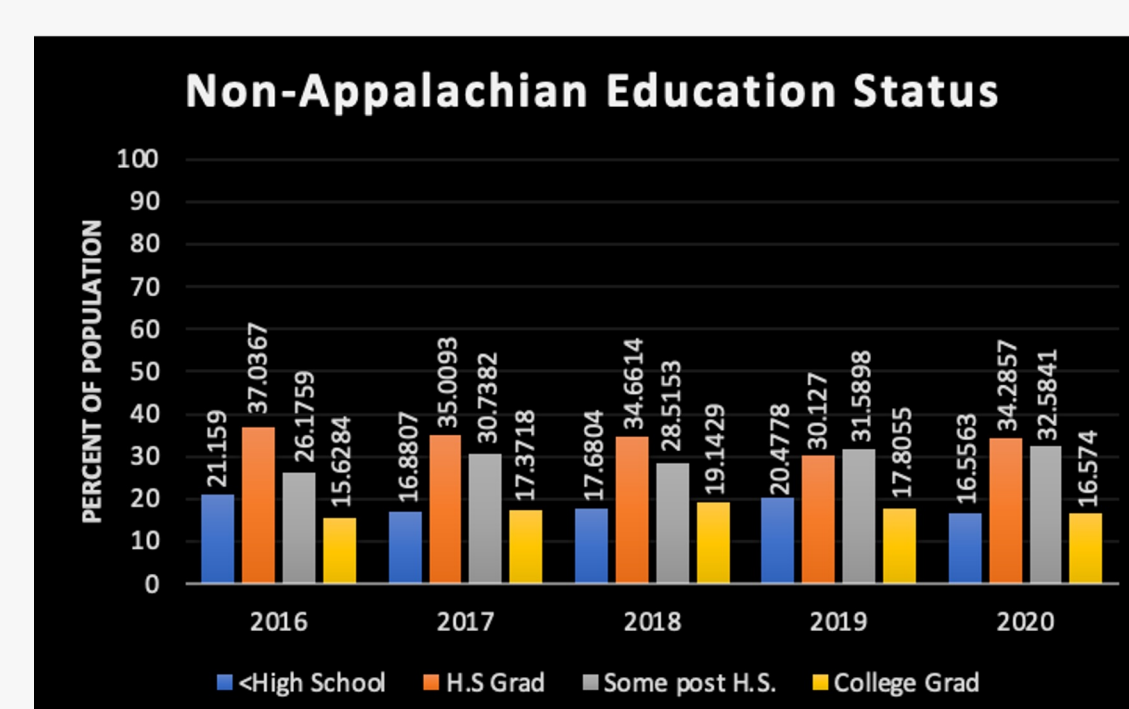
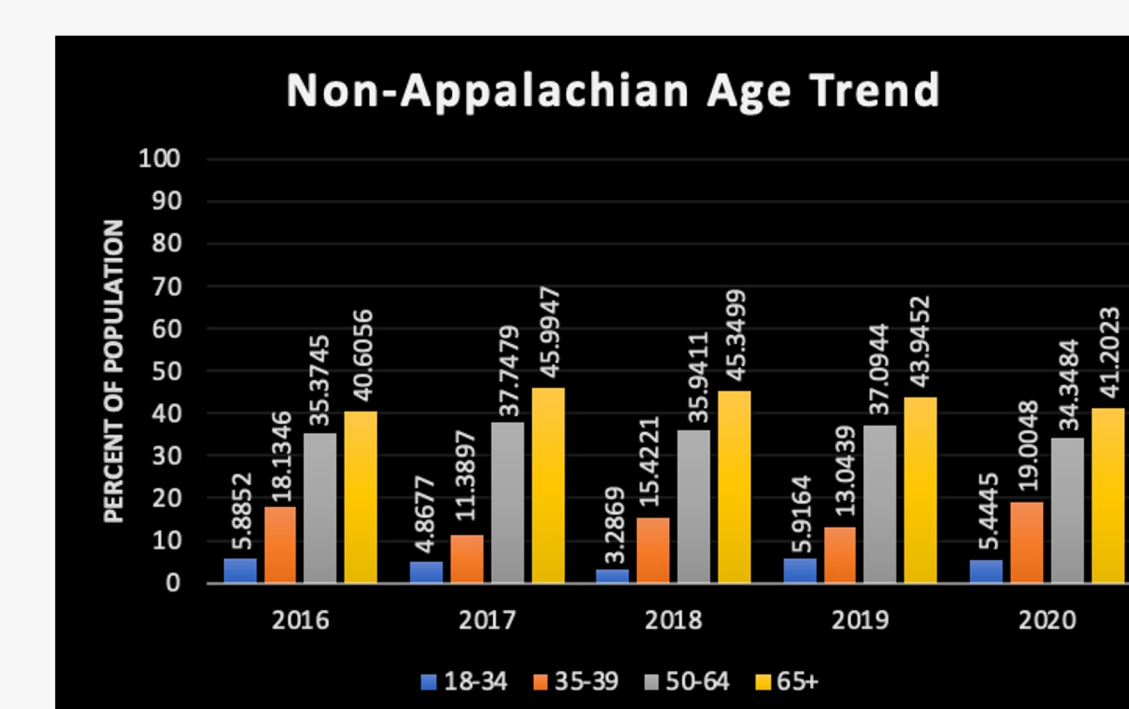
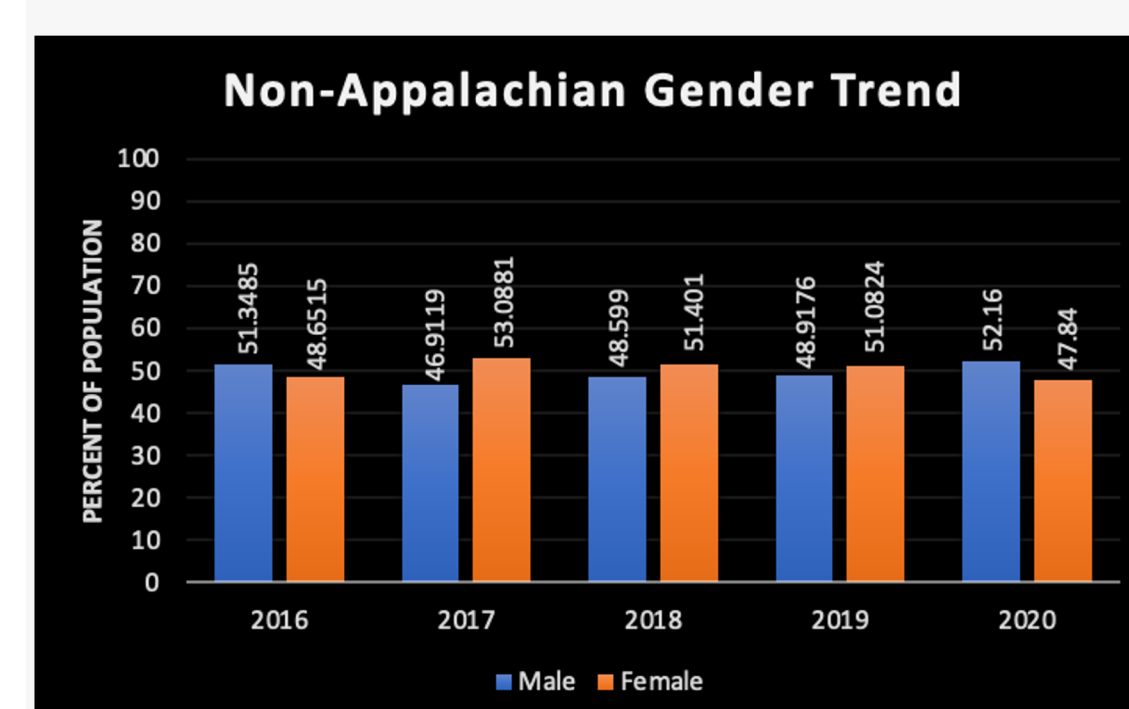
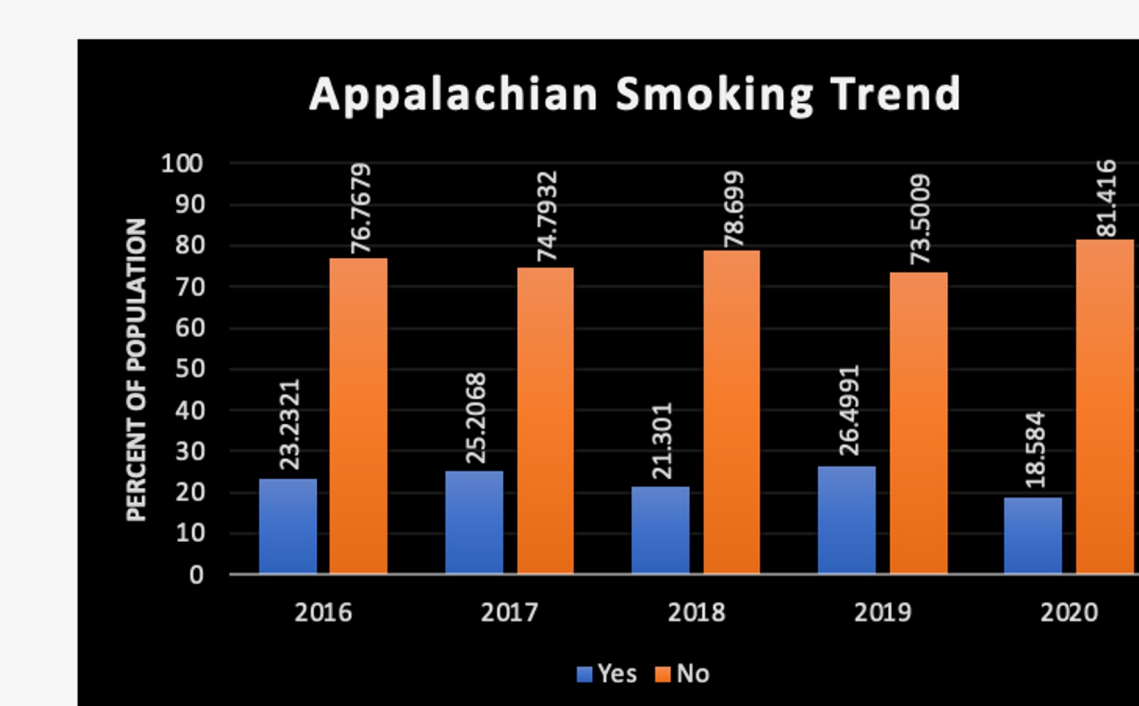
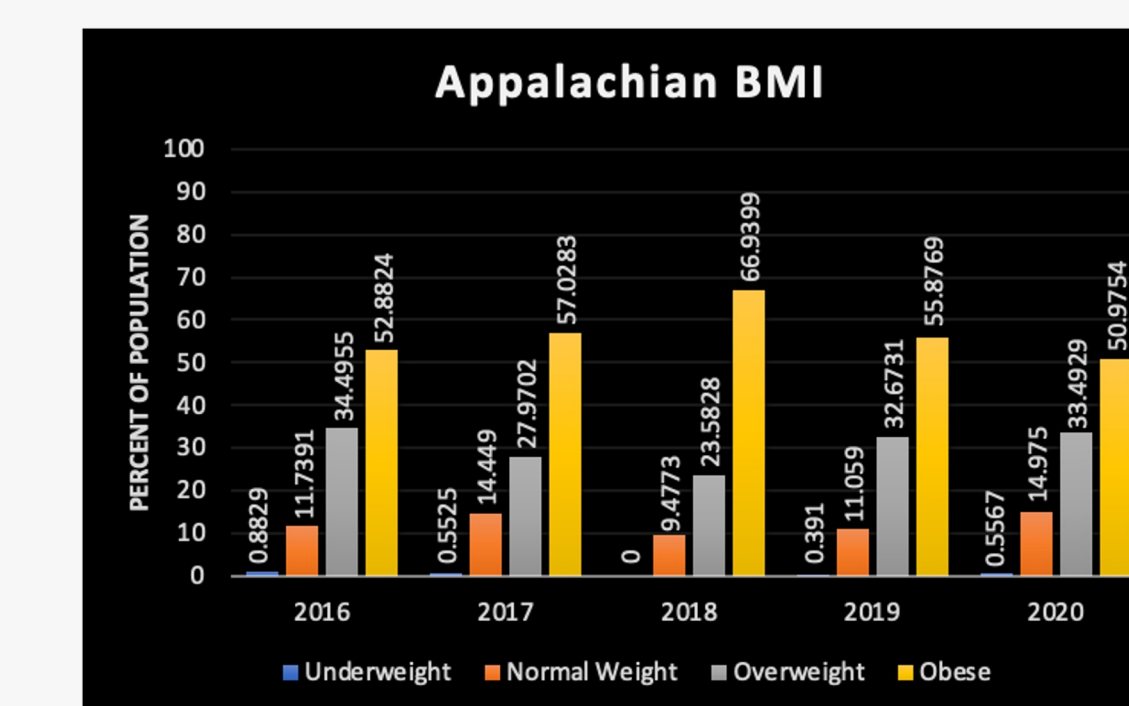
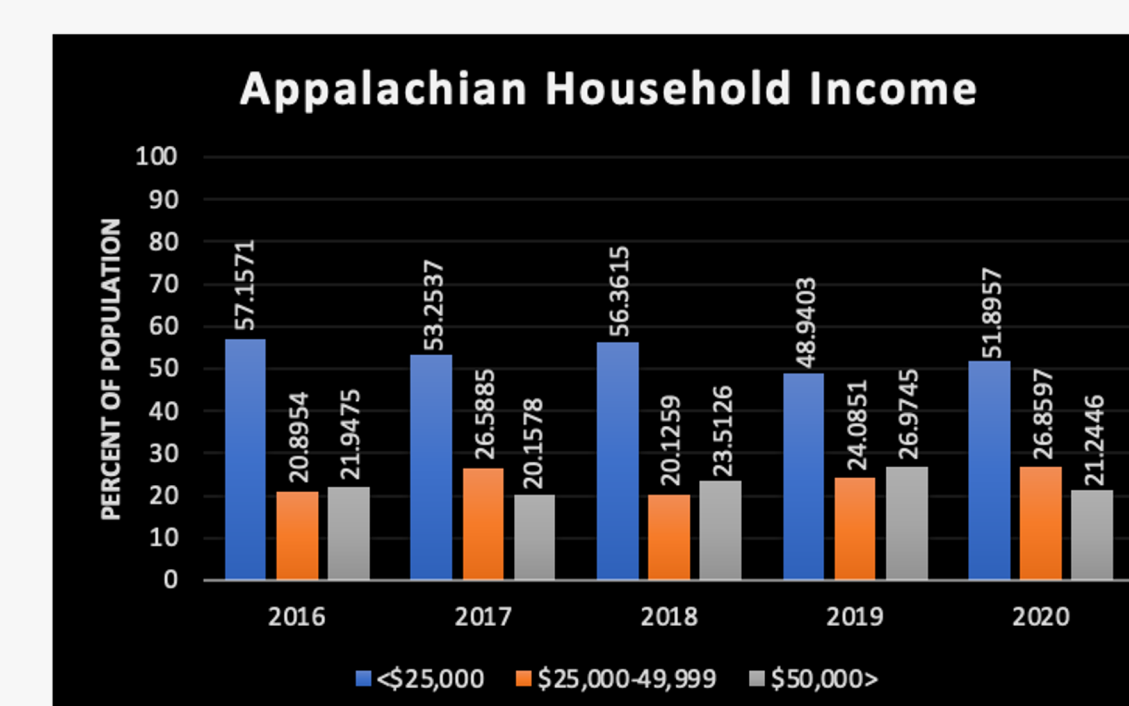
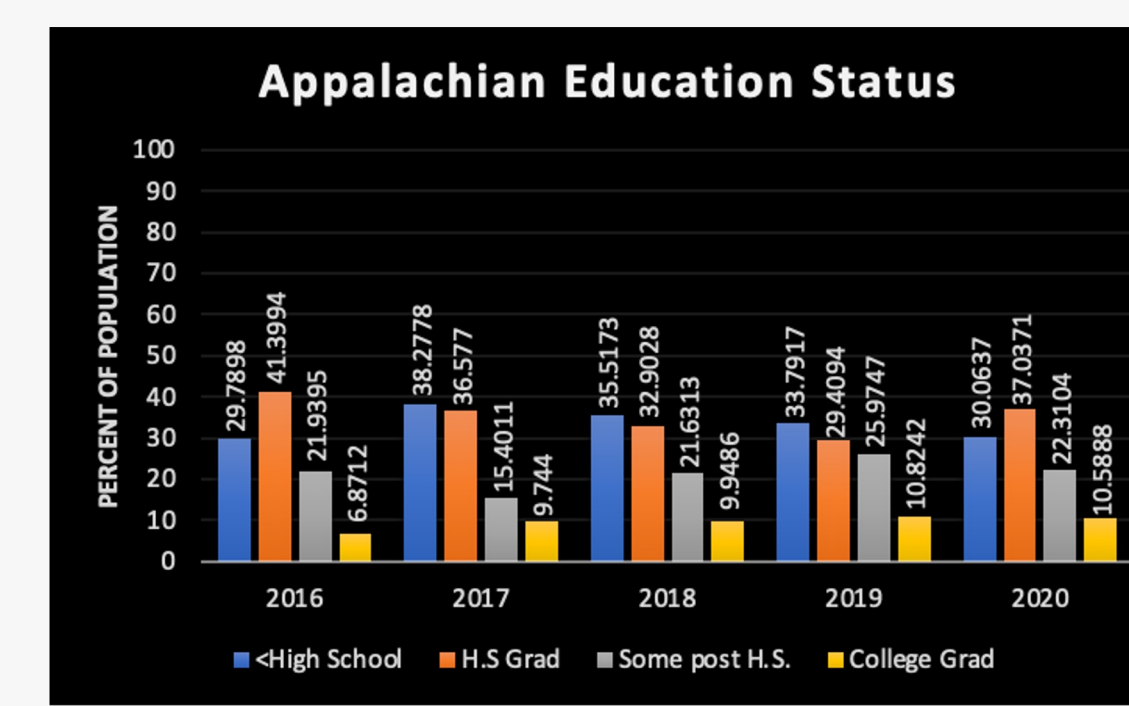
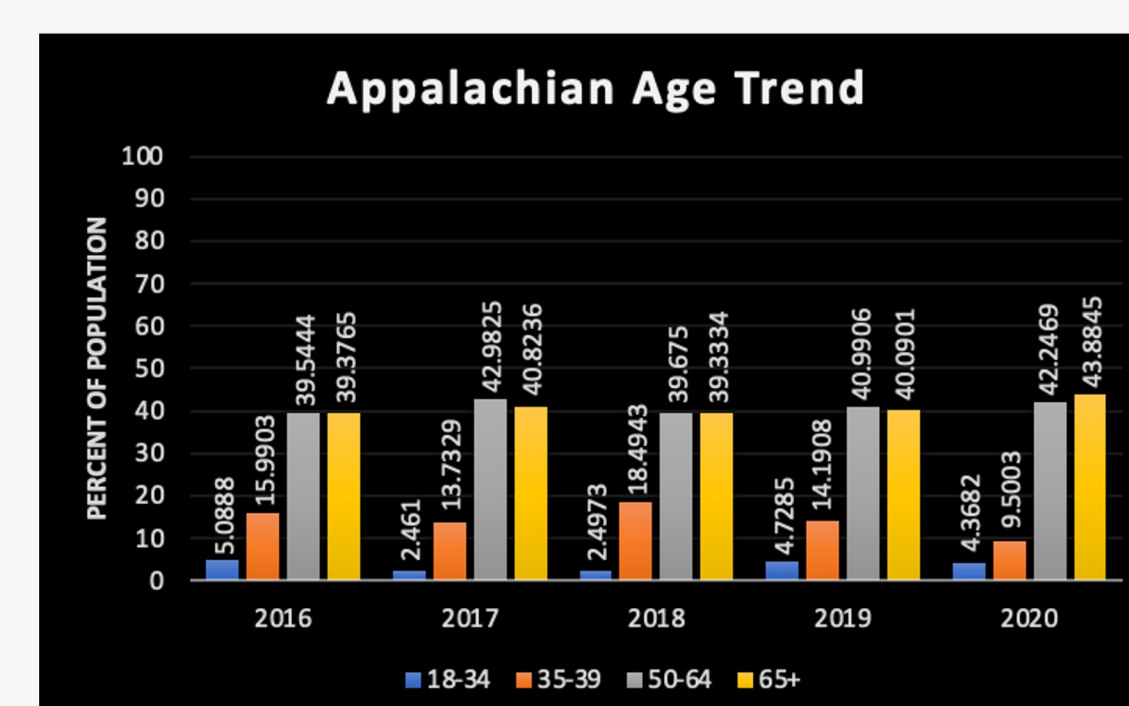
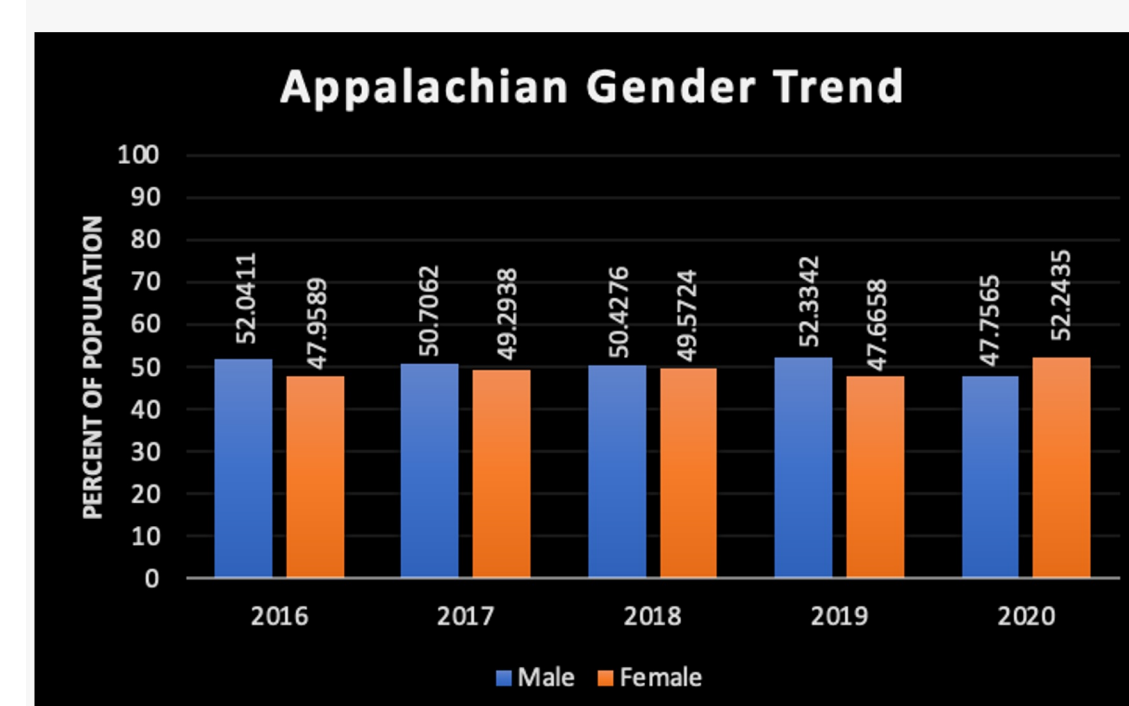
Methods

We obtained data from the 2016-2020 Behavioral Risk Factor Surveillance System (BRFSS), a cross-sectional telephone survey of U.S. residents, that collected data on health-related risk behaviors, chronic health conditions, and use of preventive services. The data was analyzed for the prevalence of diabetes in the United States, Kentucky, Appalachian KY, and Non-Appalachian KY. Data for these populations was then stratified for variables that included race, gender, age, education level, annual household income, body mass index (BMI), smoking status, and health insurance. First, the prevalence of diabetes in each region listed above was plotted. The difference between each year for each region was calculated. For example, Diabetes in the United States was plotted for 2016-2020 and the change that exists between each year was calculated. The prevalence between the different regions was examined. After determining the overall prevalence of diabetes, graphs were created for the stratified variables listed above for each region.

Results



Results



Conclusions

Since 2016, Appalachian Kentucky has had 5% to 7% higher rates of diabetes compared to the rest of the United States and 3% to 5% higher rates compared to Non-Appalachian KY. Overall, adults with diabetes in the Appalachian Region of Kentucky have lower education and lower annual household income. In contrast, smoking rates in Appalachian Kentucky have decreased substantially over the past year. Efforts that focus on addressing the most significant differences between the Appalachian and Non-Appalachian regions of Kentucky can help decrease the prevalence of diabetes in this region.

