EXAMINATION OF THE JOINT EFFECTS OF SMOKING AND SEDENTARY LIFESTYLE ON LUNG FUNCTION IN AFRICAN AMERICANS: THE JACKSON HEART STUDY COHORT

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Abstract: Though, there is no current scientific evidence to explain the ethnic differences in lung function (LF), a number of studies have noted the differences. However, some of the differences in LF may be attributed to body composition, dietary intake, physical activity, socioeconomic factors, age, and even genetics. Smoking and sedentary lifestyle (SL) have been reported to have mediating effects on health status. The primary objective of this research is to examine: 1) the joint effects of current smoking status (CSS) and SL on LF in African Americans (AAs) and 2) differences in the LF of smokers who do not have SL (SMK_NSL) versus non-smokers who have SL (NSMK_SL) via The Jackson Heart Study (JHS). Smoking status was classified as yes or no to CSS and SL was defined as the lowest quartile of the total physical activity score. The main statistical method performed was the General Linear Models. In the sex-stratified unadjusted models there was clearly an association between the joint effect of smoking and sedentary lifestyle on lung function, irrespective of the measure of lung function used. For age-adjusted models, though none of the measures of lung function were statistically different in AA women who were non-current smokers and had sedentary lifestyle compared to those who were current smokers and had non-sedentary lifestyle; there was a significant difference in the multivariable-adjusted models for FEV$_1$ % Predicted (p=0.0102) and FVC % Predicted (p=0.0055). However, for AA men (in the age-adjusted models) those who were non-current smokers and had sedentary lifestyle had significantly different FVC (p=0.0333) and FEV$_1$/FVC ratio (p <0.0001) compared to those who were current smokers and did not have sedentary lifestyle. Only FEV$_1$/FVC ratio (p=0.0048) retained its significant difference between the two groups in the multivariable adjusted models. Smoking which is inversely associated with Lung Function seems to have a more deleterious effect on Lung Function than sedentary lifestyle; a finding consistent with the literature. The patterns of the joint effects of smoking and sedentary lifestyle on lung functions varies with the various measures of lung function and are not consistent across gender lines.

Key Words: Lung Function, Sedentary Lifestyle, Smoking, FEV$_1$ % Predicted, FVC % Predicted, FEV$_1$/FVC Ratio, Jackson Heart Study, African Americans,

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