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Sex-based Disparities in Lung Cancer: Biological and Sociobehavioral Contributions to Incidence and Mortality Trends in the United States

Yoonwoo Lee

Seoul International School, South Korea

Abstract

Lung cancer is a worldwide problem that remains as one of the leading causes of death in the United States. While the increased prevalence of tobacco is a ruling cause to this, rising studies and tests have suggested sex-based differences in susceptibility and sociopsychological behaviors, which could be possible secondary factors to the variance in mortality and incidence rates. Taking this into account, this study aims to examine how biological differences and sociobehavioral actions contribute to the shifts in sex-based differences for incidence rates, mortality rates, and lung cancer trends. This study gathered datasets from the United States Cancer Statistics (USCS 2021 & 2022) and American Lung Association (1975-2021) to analyze the sex-based disparity for mortality and incidence rates observed with lung cancer in the United States. The results indicated an exceedingly larger sex-based disparity for lung cancer mortality rates compared to lung cancer incidence rates and converging incidence rates in recent years for both sexes, but equally distant mortality rates (males being consistently higher). While other studies surrounding tobacco-associated cancer, for instance liver, have found secondary causes to the sex-based disparity between male and female– such as alcohol consumption– the cause for a sex-based disparity in incidence rates and mortality rates for lung cancer still remains less known. In addition, the underrepresentation of females in epidemiologic-stem research cases have made it increasingly difficult to generalize findings to the greater female population and draw a clear conclusion. Thus, further research that delves deeper into the biological and sociobehavioral differences is an imperative.

Keywords: Biology; Lung Cancer; Tobacco; Sex-Based Differences; Sociobehavioral Actions