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Commentary

Confronting the burden of tobacco-related lung cancer in Europe in the next decades

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Despite the implementation of a wide range of tobacco control policies over the past decades, lung cancer still accounts for 1.8 million deaths worldwide, thus remaining the leading cause of cancer related death [1]. Although smoking prevalence in Europe has drastically decreased over the past decades due to tobacco control policies, the study by Gredner and colleagues demonstrate the potential of achieving even higher levels of tobacco control across Europe [2]. Their results suggest that the immediate implementation of tobacco control policies at the highest level could prevent 19.8% of lung cancer cases in men and 23.2% of lung cancer cases in women in Europe over the next two decades.

Moreover, their evaluation shows that the comprehensive implementation of tobacco control policies still has a high potential for prevention in countries that already have a low smoking prevalence or high level of tobacco control. For example, while Sweden has an overall low smoking prevalence (4.9% for men and 9.7% for women), the comprehensive implementation of tobacco control policies would still prevent 19.9% of lung cancers in men and 23.0% in women. Another example is the United Kingdom, where even with its current high level of tobacco control policies (81 out of 100 points according to the Tobacco Control Scale (TCS)), full implementation would prevent 8.6% of lung cancers in men and 9.9% in women.

Gredner and colleagues [2] evaluated the potential for implementing comprehensive tobacco control measures across different countries in Europe according to each country's current level of tobacco control as measured by the TCS [2]. Although the items that compose the TCS account for the effectiveness of individual tobacco control policies, the country's overall TCS level does not consider which specific policies are in place. Given the differences in the effectiveness across different tobacco control policies, incorporating the effects of specific policies would be a valuable future enhancement of their modelling framework [3]. This is especially important as

tobacco use patterns are rapidly changing, with transitions between tobacco products and polytobacco use becoming more prominent [4, 5]. These changes in tobacco use patterns are partly driven by the introduction of novel tobacco products, which are not always immediately or fully regulated through existing tobacco control policies [6]. While the long-term effects of polytobacco use on lung cancer risk (as well as other diseases) are still uncertain, short-term evaluations suggest polytobacco users have similar to higher mortality rates when compared to exclusive cigarette users [7]. Therefore, further research on both the effectiveness of tobacco control policies on polytobacco use and the long-term effects of polytobacco use on the risk for lung cancer and other diseases is desperately needed.

Finally, reducing the burden of lung cancer encompasses more than tobacco control. While reductions in smoking rates through tobacco control policies remain the best way to prevent lung cancer, the risk for developing lung cancer remains elevated for decades after smoking cessation. [8] This is reflected in the sensitivity analyses performed by Gredner and colleagues [2], which demonstrate the proportion of lung cancers prevented ranges between 14.2 and 22.2% for men and 16.7 and 25.9% for women, depending on the assumptions for the decline in excess lung cancer risk in former smokers. Consequently, former smokers will account for a large proportion of the burden of lung cancer in the next decades. Indeed, analyses for the United States suggest former smokers will account for about half of all lung cancer deaths in the next decades [9]. Lung cancer screening may aid in reducing the burden of lung cancer in former smokers, and may also provide opportunities to encourage smoking cessation among current smokers [10].

The study by Gredner and colleagues [2] is an important reminder on the effectiveness of tobacco control policies in reducing the burden of lung cancer across Europe. However, various challenges remain in addressing the burden of lung cancer in the next decades.

Author Contributions

K. ten Haaf is the sole author and contributed to all aspects of this comment.

Declaration of Interests

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