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Introduction

Lung cancer is a leading cause of cancer death and lung cancer mortality among Belgian men is the highest in Europe. The association between lung cancer and socioeconomic status has been extensively studied, however, little research has focused on geographical differences in lung cancer mortality. Spatial analysis can provide insight into at risk regions and populations, which could aid health interventions, and can help to develop or prove hypothesis about key determinants of cancer mortality. Therefore, this study aims to examine regional and socioeconomic inequalities in Belgian lung cancer mortality in 2001-2009.

Material and Methods

Data from the Belgian National Mortality Database, a unique dataset linking census and register data to death certificates, are used. The study population comprises all inhabitants of the Belgian regions Flanders and Brussels during 2001-2009 aged 40+. Mortality by district is calculated using the age standardized mortality rate (ASMR), directly standardized to the 2001 population for Belgium. The role of individual socioeconomic status on lung cancer mortality is estimated using Poisson regression while controlling for age, marital status and health status.

Results

Lung cancer mortality for men and women aged 40+ is highest in the east of Flanders and is relatively low in the southeast. The exception is Brussels, where lung cancer mortality is relatively low for men but high for women. For men aged 40-64, higher lung cancer mortality is observed in the southwest of Flanders while lower mortality is found in the northeast. Overall, socioeconomic status has only minor effects on regional mortality differences. The effect of socioeconomic status on regional mortality is larger for women, and the largest effects are observed for the 40-64 age-category.

Conclusion

Both regional and socioeconomic inequalities in lung cancer mortality exist within Flanders and Brussels. Individual socioeconomic status can only partly explain the regional mortality differences. As indicated by previous studies, it is likely that other contextual factors are of influence as well. Future research should therefore look at additional determinants such as area-level socioeconomic status, access to healthcare and environmental factors as well.

Key messages

- Regional inequalities in lung cancer mortality persist after controlling for individual socioeconomic status.
- Health policies should target regional inequalities as well as socioeconomic inequalities.

Regional and socioeconomic inequalities in lung cancer mortality in Belgium, 2001-2009

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