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Causal Mortality by Socioeconomic Circumstances: A Model to Assess the Impact of Policy Options on Inequalities in Life Expectancy

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Abstract

Mortality trends may vary for different socioeconomic groups, such as in the United Kingdom, where the gaps in life expectancy for different socioeconomic circumstances are widening. The reasons for such diverging trends are unclear yet. A study of cause-specific mortality may provide rich insights in that respect. Therefore, we investigate the relationship between socioeconomic circumstances and causal mortality using a unique data set obtained from the UK Office for National Statistics. We apply a multinomial logistic framework; the reason is twofold. First, covariates such as socioeconomic circumstances are readily incorporated. And second, the framework is able to handle the *intrinsic* dependence among the competing causes. As a consequence of the data set and modeling framework, we are able to investigate the impact of improvements in cause-specific mortality by socioeconomic circumstances. We assess the impact using (residual) life expectancy, a measure of aggregate mortality. Of main interest are the gaps in life expectancy among socioeconomic groups, the trends in these gaps over time, and the ability to identify the causes most influential in reducing these gaps.

Keywords: Cause-of-Death Mortality Data, Socioeconomic Circumstances, Multinomial Logistic Regression, Cause Elimination, Life Expectancy

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