

Avoidable Mortality in German-Speaking Countries: Regional Disparities in Amenable and Preventable Causes of Death in Austria, Germany and Switzerland, 1995-2018

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ABSTRACT

The concept of 'avoidable mortality' is widely used to estimate the impact of health policies on premature mortality. In cross-country comparisons, it is however hardly possible to separate this effect from other potential influencing factors like cultural differences. Therefore, the German-speaking countries in Central Europe are extraordinarily interesting as they share a common language and a similar culture but are exposed to varying health policies. Our aim is to analyze trends and differentials in avoidable mortality on the regional level in Austria, Germany and Switzerland to estimate the effect of differences in health care and health policies on mortality differences in this area. Our preliminary results show strong north-south and east-west gradients in the studied area to the advantage of the south and southwest. Although the southern German regions have significantly lower rates of amenable and preventable mortality than the northern and eastern part of Germany, they are still lacking compared to the neighboring regions in western Austria and Switzerland. Our results indicate that the efficiency of health policies in assuring timely and adequate health care and in preventing risk-relevant behavior has room for improvement in the northern and eastern part of Germany.

BACKGROUND

The concept of 'avoidable mortality' is widely used to estimate the impact of health care and health policies on premature mortality. In cross-country comparisons, it is however hardly possible to separate this effect from other potential influencing factors, especially with regard to cultural differences. For this reason, neighboring regions in bordering countries that share a common or similar culture are eminently suitable for the study of avoidable mortality. If there are significant differences between neighboring regions that are divided by a country border, this indicates that there are strong differences in the effectiveness of national or regional health policies. Although this kind of analysis is important to adjust and improve health care and health policies in disadvantaged areas, only few studies have followed this approach so far (e.g. Mühlichen 2019).

The German-speaking countries in Central Europe are an extraordinarily interesting case as they share a common language and a similar culture but are divided by national borders and exposed to varying health policies. Our aim is to analyze trends and differentials in avoidable mortality on the regional level in Austria, Germany and Switzerland to estimate the effect of differences in health care and health policies on mortality differences in this area.

DATA AND METHODS

The concept of avoidable mortality, first developed by Rutstein et al. (1976), classifies causes of death into causes amenable to health care ('amenable' or 'treatable' mortality) and causes avoidable through primary prevention ('preventable' mortality). Amenable mortality is an indicator of the effectiveness of health care through secondary prevention or medical treatment, whereas preventable mortality is an indicator of the effectiveness of inter-sectoral health policies in the broad sense and largely reflects risk-relevant behavior of the population, e.g. smoking and alcohol abuse (Nolte et al. 2002). We used the classification from Mühlichen (2019), which is widely based on Nolte & McKee (2012) for amenable causes and Page et al. (2006) for preventable causes. In line with most concepts of premature mortality, we excluded the 75+ age group "as 'avoidability' of death and reliability of death certification become increasingly questionable at older ages" (Nolte and McKee 2004: 65).

We collected official data on causes of death and population counts by sex, 5-year age groups and region from the statistical offices of Austria, Germany and Switzerland. We chose a regional level that is used for spatial planning and is comparable in its structure and size for the three countries: 'Bundesländer' in Austria, 'Raumordnungsregionen' in Germany and 'Grossregionen' in Switzerland. Causes of death have been recorded according to the 10th revision of the International Classification of Diseases (ICD) since 1995 in Switzerland, 1998 in Germany and 2002 in Austria. In the years before, Germany and Austria used ICD-9 (from 1980 onwards).

To show differences in amenable and preventable causes over time and between regions and sex, without being distorted by compositional differences or changes, we calculated standardized death rates (SDR) with a directly standardized age and sex structure for each region (according to the European Standard Population 2013).

RESULTS

Figure 1 shows our preliminary results for amenable mortality (on the left) and preventable mortality (on the right) in 2018 in the Austrian, German and Swiss regions for both sexes combined. There are strong north-south and east-west gradients in the studied area to the advantage of the south and southwest. Although the southern German regions have significantly lower rates of amenable and preventable mortality than the northern and eastern part of Germany, they are still lacking compared to the neighboring regions in (western) Austria and Switzerland. These gradients are stronger among men than among women.

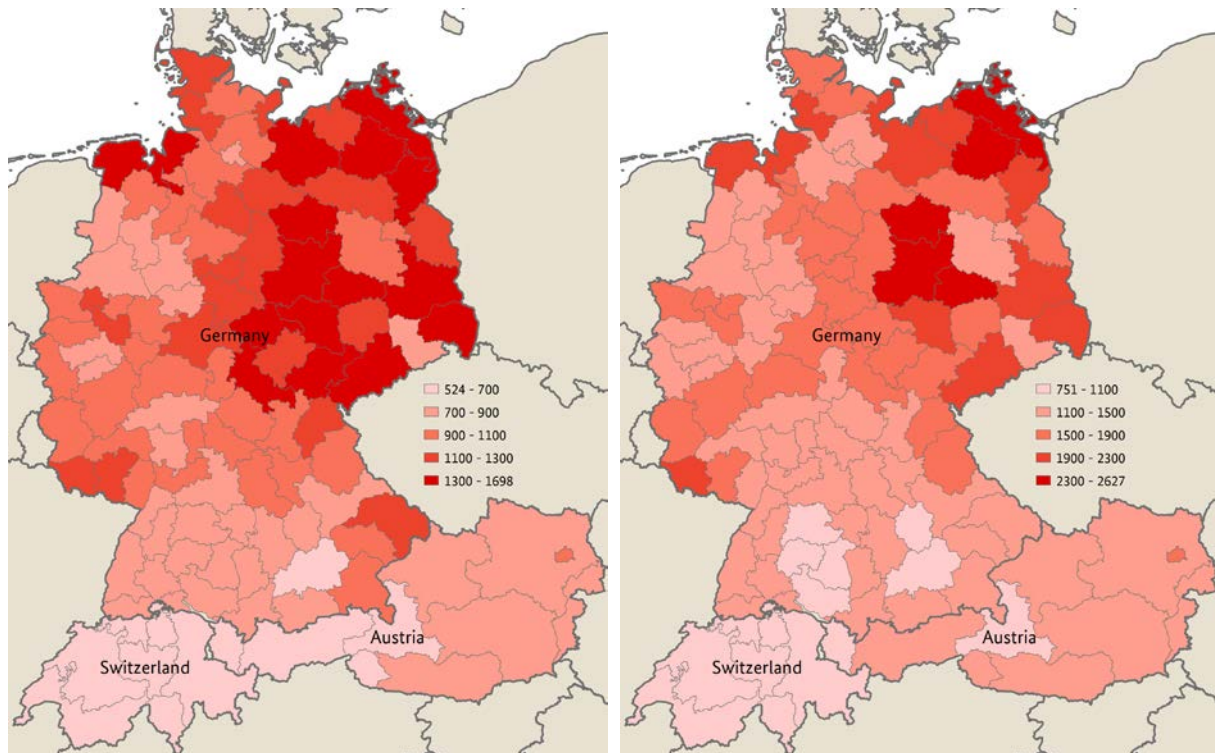


Figure 1 Amenable mortality (left) and preventable mortality (right) in Austrian, German and Swiss regions in 2018; standardized death rates per 100,000; ages 0–74; both sexes combined
Base map: Eurostat (for NUTS-2 regions and country borders) and BBSR (for Raumordnungsregionen).

DISCUSSION

The results for amenable mortality indicate that the northern and eastern regions are less effective in providing adequate and timely medical care. In both Germany and Austria, the east-west gap is widely related to higher cardiovascular mortality in the east. The rural areas of eastern Germany show longer distances to health care facilities and a lower physician density per people at retirement age (BBSR 2021). In addition, the east has experienced a long stage of selective emigration (“brain drain”) and shows lower levels in socio-economic variables, e.g. income and unemployment (Mühlichen 2019). Regional differences in Austria are smaller but also show an east-west gradient to the disadvantage of the east and the city of Vienna in particular. Smoking rates as well as socio-economic and environmental factors are likely to have an effect in this regard (Stein et al. 2011; Rau et al. 2007; Klotz and Doblhammer 2008; Klimont 2010). In Switzerland, avoidable mortality rates as well as regional differences are considerably smaller. Regional patterns in this country are more related to urban-rural differences that are less visible in NUTS-2 regions (Lerch et al. 2017).

The pattern of preventable mortality is very similar and indicates that the northern and eastern regions are less effective in reducing risk-relevant behavior, particularly smoking and alcohol abuse. Self-conducted analyses of the German Microcensus 2017 confirm that smoking rates are considerably higher in these areas. Likewise, the east of Austria shows higher rates of smoking and alcohol abuse (Urbas et al. 2009). In Switzerland, differences in health behaviors are rather limited across the Swiss regions, as revealed by health surveys (Wanner et al. 2012). Nevertheless, preventable mortality is slightly lower in the German-speaking areas and in Ticino. Faeh et al. (2009) found higher cardiovascular mortality in the German-speaking region, while alcohol- and smoking related mortality are more important in the French-speaking part.

CONCLUSION AND OUTLOOK

Our preliminary results show that the lower levels of life expectancy in the north and east of the German-speaking area are probably associated with lacking efficiency of health policies in assuring timely and adequate medical care and in preventing risk-relevant behavior. Our future research (up to the IUSSP conference) will focus on the single causes of death that drive these regional patterns, the impact of urban-rural differences and the influence of related risk factors like smoking and alcohol consumption.

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