

CORRESPONDENCE

Regional Differences in the Prevalence of Cardiovascular Disease—Results From the German Health Update (GEDA) From 2009–2012

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Questionable Validity of Data Sources

The conclusion of the study (1), that relevant differences between German federal states exist in the lifetime prevalence of important cardiovascular disorders, which can only partly be explained by variations in age, sex, social status, and size of municipality, is not validated by the data sources. The basis of the conclusion is anything but solid, for the following reasons.

The basis of the survey is a random sample derived from landline telephone numbers; households or persons without a landline are therefore not included. The proportion of actual interviews was between 23.9% and 34.5%, the cooperation rate between 51.2% and 76.6%—in other words, only 12–17% of the target population provided data. The question of whether this population is actually representative would require further study. Fundamentally, in a sample based on landline telephone connections, a bias towards a sick, immobile population cannot be ruled out. Such a sample bias cannot be balanced by representative weighting.

The information on cardiovascular events was based on medical diagnoses reported by lay persons. Was this information validated?

Figure 2 implies that the non-reported confidence interval for Germany would have had overlaps with all federal states—this would mean that no significant difference exists between the states and Germany overall. In the absence of statistical significance, it is pointless to reflect on differences.

Data from the cause of death statistics of the Federal Statistical Office were used to capture death rates. The death statistics are based on death certificates, which—according to several studies—are barely, if at all, valid. Furthermore, the data were coded at state level, which means that the data possibly reflect differences in state-specific completions of death certificates and coding behaviors. The section on limitations points out the weakness of this data source, but it states that it would be unlikely to have any effect—which should have been proved.

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In Reply:

In our article (1) we reported two different response rates according to international standards (2), which referred to different baseline totals (response rate 3 according to AAPOE: all likely households; cooperation rate: all target persons who had been contacted successfully). For this reason, the suggested multiplication of the two rates is not admissible. As shown in the cited references, the achieved response rates meet the expectations for population surveys (3). However, in order to be able to generalize the results to the population, the design and adjustment weightings of the analyses are additionally crucial. Still, we did mention in the article the limitations that apply to each and every telephone health survey.

Collecting data on self-reported diseases diagnosed by a physician is the common method used in health surveys to estimate disease prevalence rates at the population level. We did not validate these self-reports—this would have been impossible in a nationwide telephone survey of this order of magnitude.

In Figure 2 we described which federal state had above-average or below-average values for both indicators. The confidence interval for Germany is 8.2% to 8.7%; this is significantly different to Baden-Württemberg (6.7% to 7.8%). It also means marginally overlapping confidence intervals for Rhineland-Palatinate (8.7% to 10.8%) and Saxony-Anhalt (8.5% to 11.2%).

Other authors have also reached the conclusion that differences in cardiovascular mortality between federal states cannot plausibly be explained with method-related biases of the cause of death statistic (4). Our summary of the most important cardiovascular disorders may have balanced the effects of coding difference at state level further. When all limitations are taken into account, using the official cause of death statistic is the only option for studying differences in regional death rates.

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Conflict of interest statement

The authors of both contributions declare that no conflict of interest exists.