# Educational inequalities in hazardous drinking and their associated mortality in people aged 50 and older in Europe

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**Contributions of each co-author:**

STL, MBP and AE conceptualised and designed the research study. STL analysed the data and wrote the first draft. All authors discussed the results and contributed to the final manuscript.

# Educational inequalities in hazardous drinking and their associated mortality in people aged 50 and older in Europe

*Background:* We examine educational inequalities in hazardous drinking prevalence among individuals aged 50 or more in 14 European countries, and explore the educational inequalities in mortality in hazardous drinkers in European regions. *Methods:* We analyse data from waves 4, 5 and 6 of the Survey of Health Ageing and Retirement in Europe (SHARE). We estimated age-standardized hazardous drinking prevalence, and prevalence ratios (PR) of hazardous drinking by country and educational level using Poisson regression models with robust variance. We estimated the relative index of inequality (RII) for mortality among hazardous drinkers and non-hazardous drinkers using Cox proportional hazards regression models and for each region (North, South, East and West). *Results:* In men, educational inequalities in hazardous drinking were not observed ($PR_{medium}$=1.09 [95%CI:0.98-1.21] and $PR_{high}$=0.99 [95%CI:0.88-1.10], ref. low), while in women they exist, having the highest hazardous drinking prevalence in the highest educational levels ($PR_{medium}$=1.28 [95%CI:1.15-1.42] and $PR_{high}$=1.53 [95%CI:1.36-1.72]). Overall, the Relative Index of Inequality (RII) in all-cause mortality among hazardous drinkers was 1.14 [95%CI:1.04-1.24] among men and 1.10 [95%CI:0.97-1.25] among women. Educational inequalities among hazardous drinkers were observed in Eastern Europe for both men ($RII_{hazardous}$=1.26 [95%CI:1.05-1.50]) and women ($RII_{hazardous}$=1.47 [95%CI:1.15-1.89]. *Conclusions:* Higher educational attainment is positively associated with hazardous drinking prevalence among women, but not among men in most of the analysed European countries. Clear educational inequalities in mortality among hazardous drinkers were only observed in Eastern Europe. Further research on the associations between alcohol use and inequalities in all-cause mortality in different regions is needed.

Keywords: alcohol, middle-aged, SES differences, hazardous drinking, Europe

**Introduction**

Socioeconomic position (SEP) refers to the social and economic factors that influence the position individuals or groups hold within the structure of a society, such as educational level, income or wealth. Socioeconomic inequalities in health reflect differences in opportunities for maintaining good health between people with different SEP.[1,2] Several studies in Europe have analysed the relationship between socioeconomic position and alcohol consumption, but the results found are not consistent.[3,4] This relationship depends on several variables such as country, age, gender,[5–8] as well as on the different ways of measuring alcohol use in a population (e.g. binge drinking, hazardous drinking), given that their prevalence may vary among socioeconomic groups.[5,9]

The health complications related to alcohol consumption are associated with the socioeconomic position. That is, most of the previous research found worse morbidity and mortality indicators among the groups with disadvantaged SEP.[10–13] Therefore, alcohol is an important contributor to all-cause mortality inequalities, as it has been recently shown in a recent publication using data from Nordic countries.[14] Additionally, inequalities in alcohol-related harm could be age-specific as overall alcohol consumption and drinking patterns have been changing across generations in most European countries.[15]

Alcohol use and ageing is an issue of growing relevance for public health in European societies[16,17] as European societies are ageing rapidly. In this context, middle and older generations play a central role in society. In Europe, both the hazardous drinking prevalence among population aged 50+ (one in five people) and total mortality attributable to alcohol are high and with important differences between countries.[5,18] Furthermore, middle and old age groups have the highest alcohol-related mortality rates and therefore the highest number of death losses due to alcohol.[19,20]

Despite this clear growing evidence on the importance of alcohol use and their consequences at older ages, previous studies on the topic mostly focused on the adult population, and did not distinguish the older population.[8,11–13,21] The studies focusing on alcohol consumption among middle and older aged individuals neither focused on

interpreting the results on differences in alcohol consumption by socioeconomic status nor analysed mortality follow-up.[5,6,22–24]

We examine educational inequalities in hazardous drinking among individuals aged 50 or more in 14 European countries, and explore educational inequalities in all-cause mortality by hazardous drinking status in European regions.

**Methods**

We used cross-sectional and longitudinal data from individuals aged 50-85 from the Survey of Health, Ageing and Retirement in Europe (SHARE)[25,26] for 14 countries (Austria, Belgium, Czech Republic, Denmark, Estonia, France, Germany, Italy, Luxembourg, the Netherlands, Slovenia, Spain, Sweden, Switzerland). For the cross-sectional analysis we used data from wave 5, except for the Netherlands where we used data from wave 4 as data for wave 5 were unavailable. For the longitudinal analysis we used data from waves 4 (2011) and 5 (2013), with around 2-year mortality follow-up (measured in months and reported by a relative in waves 5 (2013) and 6 (2015), respectively). All countries obtained a probabilistic sample, although the sample design differed slightly between countries. Country-specific data were clustered into European regions according to drinking cultures: North (Sweden and Denmark); West (Austria, Belgium, Germany, Luxembourg, the Netherlands and Switzerland), South (France, Italy and Spain) and East (Czech Republic, Estonia and Slovenia), as previously done[23]. The final sample size for the cross-sectional sample was 26,314 men and 32,239 women.

The outcome variable was hazardous drinking, which is generally defined as "quantity or pattern of alcohol consumption that places patients at risk for adverse health events".[27] Hazardous drinking was estimated using three questions of the SHARE questionnaire adapted to the Alcohol Use Disorders Identification Test, Consumption (AUDIT-C) and related to frequency and quantity of alcohol consumption as well as binge drinking,[28] as previously done (see [22] for further detail). Men and women who scored ≥5 and ≥4 points, respectively, were classified as hazardous drinkers.[28]

Educational level, age, country of residence, and self-perceived health (excellent, very good or good, fair or poor) were the independent variables. Educational level was

based on the highest educational degree obtained and reclassified into the International Standard Classification of Education (ISCED) of 1997, and it was categorised as follows: low (ISCED 1-2), medium (ISCED 3-4) or high (ISCED 5-6).

*Analysis*

All analyses were carried out separately for men and women. The sample distribution was calculated for each variable. We estimated age-standardized (direct method) hazardous drinking prevalence by country for each educational level and their corresponding 95% confidence interval (95%CI) using as standard the European population from the 2011 census from Eurostat. Subsequently, we fit several sex- and country-specific Poisson regression models with robust variance to obtain prevalence ratios (PR) of hazardous drinking[29] by educational level, adjusting for age and self-reported health and using the cross-sectional standard weights provided by SHARE.

For the mortality analyses, we used the European region-specific longitudinal sample, and we combined the medium and high educational level categories to increase the size of our sample. Finally, to examine educational inequalities in mortality among hazardous drinkers or non-hazardous drinkers, we used the relative index of inequality (RII), which considers all educational groups and assumes a linear relationship between educational level and mortality. The RII is the ratio between mortality at the lowest educational group as compared with the highest educational group and it was estimated applying Cox regression models[30] adjusting by age, country of residence and self-reported health. All data preparation and statistical analyses were performed in R 3.5.1 in R Studio 1.1.463.

**Results**

A description of the characteristics of the cross-sectional data by sex are presented in Table 1. Of the total number of participants, 45% were men, 70% were ≥60 years, 61% had completed at least a medium or high educational degree (ISCED-1997) and 22% were hazardous drinkers, and roughly three out of four reported good or excellent health. Table 2 presents a description of the characteristics of the longitudinal data. We observed 1,476 deaths in 69,926 person-years at risk among men, and 1,036 deaths in 89,106 person-

years at risk among women. The crude mortality rates were 21.1 per 1,000-person years in men and 11.6 per 1,000-person years in women. Details on the distribution of the data by region and sex are presented in Table 2.

<Table 1 around here>

<Table 2 around here>

The hazardous drinking prevalence at ages 50-85 (average of the 14 European countries studied) was for men 22.3% (95%CI 21.3-23.3) among the low educated group, 27.3% (26.3-28.4) among the middle educated group and 24.8% (23.6-25.9) among the highest educated group (Table 3). This resulted in inexistent educational inequalities in hazardous drinking among men ($PR_{medium}$= 1.09 [95%CI: 0.98-1.21] and $PR_{high}$=0.99 [95%CI: 0.88-1.10], ref. low). For women, hazardous drinking prevalence were 15.8% (15.1-16.5), 19.3% (18.5-20.1) and 25.1% (23.6-25.9) for the lowest, middle and highest educated group, respectively. Overall, inequalities in hazardous drinking were found among women with middle and higher educated groups showing higher hazardous drinking prevalence as compared to those with low education ($PR_{medium}$= 1.28 [95%CI: 1.15-1.42] and $PR_{high}$=1.53 [95%CI: 1.36-1.72]).

<Table 3 around here>

The hazardous drinking prevalence was heterogeneous across the countries and educational levels. Among men, it ranged from 11.5% (95% CI: 8.5-14.5%) among higher educated Swedish to 48.3% (43.3-53.3%) among higher educated Danish. Among women, it ranged from 5.3% (4.2-6.3%) among middle educated Estonians to 46.5% (42.1-50.9%) among higher educated Danish. Among men, higher hazardous drinking prevalence among middle and higher educated groups were observed in Denmark, Luxembourg (only higher educated group) and France (only middle educated group), and lower prevalence among highest educated group was observed in Estonia. Among women, country-specific results followed the overall result of higher hazardous drinking prevalence among middle and higher educated groups, except in Eastern Europe, Italy and the Netherlands were educational inequalities in hazardous drinking prevalence were not observed.

In terms of mortality, educational inequalities in total mortality were observed in the pooled European sample, irrespective of the hazardous drinking condition (see Figure 1). Overall, for men the relative index of inequality (RII) were 1.14 [95%CI: 1.04-1.24] among hazardous drinkers and 1.16 [95%CI: 1.12-1.20] among non-hazardous drinkers, while for women these results were RII=1.10 [95%CI: 0.97-1.25] and RII=1.09 [95%CI: 1.03-1.14], respectively. Educational inequalities in mortality among hazardous drinkers were observed in Eastern Europe for both men ($RII_{hazardous}$=1.26 [95%CI: 1.05-1.50]) and women ($RII_{hazardous}$=1.47 [95%CI: 1.15-1.89]). These inequalities were also observed in Southern Europe, but were not statistically significant, for both men ($RII_{hazardous}$=1.17 [95%CI: 0.94-1.47]) and women ($RII_{hazardous}$=1.22 [95%CI: 0.95-1.55]), and they were not observed in Western and Northern Europe.

<Figure 1 around here>

**Discussion**

In this study we examined educational inequalities in hazardous drinking and in mortality among hazardous drinkers among Europeans aged 50 years old or over. The two main findings of this study are: (1) Educational inequalities in the hazardous drinking prevalence –higher hazardous drinking among those with high levels of education- were found in women but not in men, with some country-specific exceptions; and (2) educational inequalities in all-cause mortality among hazardous drinkers (for both men and women) were found in Eastern Europe, but not in Southern, Northern and Western Europe.

Before discussing our results further, we would like to highlight some of the strengths and limitations of our study. The first phase of this study was carried out using a large representative sample of the European population aged 50 to 85 years old, and in the second phase we used a longitudinal study. As typically done in previous studies, the hazardous drinking prevalence was estimated based on self-reported data. We adapted the SHARE questions to the AUDIT-C test, which has been validated and is widely used to detect hazardous drinkers,[31] as previously used in several scientific publications.[5,6,9,22,29,32] The small sample size for the longitudinal study (mortality) has not allowed us to obtain results by country, and for this reason region-specific results

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were presented. A common limitation in any longitudinal study is the loss at follow-up (or attrition). In our case, because of the relatively short follow-up time/period (around 2 years) we could follow >75% of the cases, either survey follow-up or mortality follow-up (end-of life interview with a proxy-resident). In addition, as most health surveys, the SHARE sample is selected. Nonetheless, a comparison of SHARE mortality data with mortality register data  suggests SHARE mortality to be slightly lower than population level mortality.[33] All in all, as for the mortality analysis these results are to our knowledge the first attempt to study the associations between hazardous drinking and all-cause mortality among the population aged 50 years old and over in a cross-region comparison in Europe. However, we acknowledge that our mortality results are not necessarily reflecting population level mortality dynamics and should be taken cautiously because of the attrition and relatively small sample size.

This study used a sample of middle aged and old European, whereas previous pan-European studies focusing on socioeconomic differences in alcohol consumption frequently used samples of adults (aged 25 years and over, with different cut off ages), different alcohol consumption measures and presented mixed results.[3,4] Our results showing higher educational attainment to be positively associated with higher hazardous drinking prevalence among women and not among men are consistent with previous research using adult ages sample.[3] Our results for men on the lack of educational inequalities in hazardous drinking contrast with earlier findings based on data from the early 2000s, which found that higher individual socioeconomic position was positively associated with alcohol drinking status [4]. These differences seem explained by differences between the studies in both the age groups included and the alcohol use definition.

Our findings on a clear distribution of hazardous drinking by educational level among women but not among men may be explained, as happened with tobacco, by the theory of diffusion of innovations.[34] According with this perspective, alcohol use in the population may have started in men with higher educational level, expanding later to men with lower educational level, afterwards to women with higher educational level and, finally, to those women with lower educational level.[35] This explanation is in line with a comparison between our results and previous research among working age adults from the late 1990s which found higher binge drinking prevalence among men from high SEP as compared to their lower SEP counterparts.[36] Thus, it seems to indicate that hazardous

drinking has spread out across all SEP groups among men. This theory seems also to apply to women as the increase in alcohol consumption among women seems to have occurred first in populations with high levels of women's labour force participation and high gender equality.[4,6] In line with that, we would be in a stage that women from low socioeconomic status could be expected to increase their hazardous drinking prevalence as a consequence of women's empowerment.[6] Evidence from younger cohorts suggest that the relationship between socioeconomic position and alcohol consumption has changed, as for example family SEP has not been associated with adolescents alcohol consumption.[7]

Country-specific results are interesting but also more difficult to be compared with previous research as SEP differences in hazardous drinking have rarely been analysed among older European populations. For men, the country-specific exceptions were found in Denmark and in Luxembourg, where those with higher education had higher hazardous drinking prevalence. In Denmark, our results contrast with a no association between socioeconomic position and risky single occasion drinking in a sample of adults aged 15 to 79,[37] and therefore this suggests that the inequalities we observed may be driven by quantity of alcohol consumption and not by patterns of drinking. In contrast, in Estonia our findings were in the opposite direction, as men with higher educational attainment had low hazardous drinking prevalence, which could be related to the rapid societal changes experienced in Estonia in the 1990s and early 2000s.[38]

For women, inequalities in hazardous drinking were not observed in Eastern Europe, where hazardous drinking prevalence was typically low across all educational levels, especially among the generations analysed in this study. Therefore, it seems plausible to think that women born in the 1930-50s in Eastern Europe had not widely adopted men's unhealthy lifestyles such as alcohol consumption. The other observed exceptions among women on no inequalities in hazardous drinking were found in the Netherlands and in Italy. It seems possible that these results for the Netherlands are related to a diffusion of hazardous drinking also among women with low educational level as they presented a considerably high prevalence as compared with low educated women in other countries. Thus, Dutch women seem to be in and advanced staged in the theory of diffusion of innovation as regards to alcohol use.

Regarding educational inequalities in all-cause mortality among hazardous drinkers we found clear educational inequalities in Eastern Europe. This is in line with previous research highlighting the fact that 1) Eastern European countries have higher educational inequalities in all-cause mortality;[39] and that 2) the riskier drinking patterns are typically observed in Eastern Europe,[40] which are particularly influenced by socioeconomic position and lead to higher inequalities in alcohol-attributable mortality as compared to other European countries.[11]

For the rest of the regions the results are somewhat less clear as we did not find educational inequalities in all-cause mortality in the hazardous drinking group. This is somewhat difficult to be compared with previous research, but it contrasts with previous literature that found important socioeconomic inequalities in alcohol-attributable causes of death.[11] Therefore, the fact that we did not find inequalities in all-cause mortality among hazardous drinkers does not necessarily imply that they do not exist. This is to our knowledge the first time that socioeconomic inequalities in all-cause mortality are being analysed in individuals with hazardous alcohol use. The SHARE data that we used allowed us to provide some regional insights, but at the same time, we should recognise the rather low sample size as compared with mortality register datasets available mostly for Nordic countries. It could also be that inequalities in alcohol-attributable mortality are related to specific dimensions of alcohol use, such as the pattern of consumption.

Our results have strong implications for public health policy makers as the hazardous drinking prevalence at ages 50 years old and over in Europe is notably high and SEP inequalities in alcohol consumption exist among women. Reducing both overall alcohol consumption levels and SEP inequalities, especially among women, should be prioritised for preventive public health policymakers in most European countries. Future research should assess whether our results persist over time and explore the mechanisms that underlie potentially decreasing trends in both alcohol consumption levels and SEP inequalities. Additional research on the impact of alcohol consumption on inequalities in all-cause mortality should be also further explored with larger cohort studies, as most of the previous research on the topic mostly focused exclusively on causes wholly-attributable to alcohol[14] and not in other causes alcohol is indirectly associated with.

*Conclusions*

In sum, the hazardous drinking prevalence among individuals aged 50 years and over is high in most countries in Europe. Our results suggested important educational differences in hazardous drinking among Europeans aged 50-85 for women –those with higher educational level tend to engage more in hazardous drinking-, but not for men, with few country-specific exceptions discussed above. These results call for a need of public health policies in order to reduce the elevated hazardous drinking prevalence and reduce their SEP inequalities. Finally, our results suggest educational differences in all-cause mortality do not depend on the hazardous drinking sample, except in Eastern Europe. Further investigations should contrast these results as well as study the extent to which different dimensions of alcohol use have an impact on educational inequalities in all-cause mortality in European regions.

**Disclosure statement**

No potential conflict of interest was reported by the authors

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**Table and figure captions**

**Table 1.** Characteristics of the cross-sectional data from the Survey of Health Ageing and Retirement in Europe, wave 5*, ages 50-85

*Data from the Netherlands come from wave 4.

**Table 2.** Person-years at risk and total deaths in the longitudinal Survey of Health, Ageing and Retirement in Europe (SHARE) sample, waves 4-6, ages 50-85

**Table 3.** Age-Adjusted Prevalence and Prevalence Ratio of Hazardous drinking by educational level, Survey of Health, Ageing and Retirement in Europe (SHARE), wave 5*, ages 50-85

*Data from the Netherlands come from wave 4.

** PR adjusted by age and self-reported health.

**Figure 1.** Association between educational attainment and age-adjusted mortality by hazardous drinking condition and European region*.

*North: Denmark and Sweden; West: Austria, Belgium, Luxembourg, Germany, the Netherlands and Switzerland; South: France, Italy and Spain; and East: Czech Republic, Estonia and Slovenia.
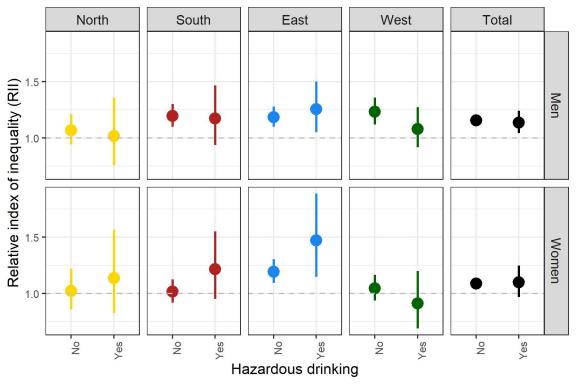
The bars indicate the 95% CI.

**Table 1.** Characteristics of the cross-sectional data from the Survey of Health Ageing and Retirement in Europe, wave 5*, ages 50-85

| | | Men (n=26,314) | | Women (n=32,239) | |
|---|---|---|---|---|---|
| | | N | % | n | % |
| **Age** | | | | | |
| | 50-59 | 7,307 | 27.8% | 9,844 | 30.5% |
| | 60-69 | 9,878 | 37.5% | 11,325 | 35.1% |
| | 70-85 | 9,129 | 34.7% | 11,070 | 34.4% |
| **Education** | | | | | |
| | Low (ISCED 0-2) | 9,119 | 34.7% | 13,239 | 41.1% |
| | Middle (ISCED 3-4) | 10,351 | 39.3% | 11,834 | 36.7% |
| | High (ISCED 5-6) | 6,420 | 24.4% | 6,687 | 20.7% |
| | Missings | 424 | 1.6% | 479 | 1.5% |
| **Country** | | | | | |
| | North | 3,847 | 14.6% | 4,361 | 13.5% |
| | Denmark | 1,831 | 6.9% | 2,075 | 6.4% |
| | Sweden | 2,016 | 7.7% | 2,286 | 7.1% |
| | West | 10,023 | 38.1% | 11,901 | 36.9% |
| | Austria | 1,780 | 6.8% | 2,352 | 7.3% |
| | Belgium | 2,394 | 9.1% | 2,876 | 8.9% |
| | Luxembourg | 734 | 2.8% | 809 | 2.5% |
| | Germany | 2,607 | 9.9% | 2,836 | 8.8% |
| | Netherlands | 1,183 | 4.5% | 1,467 | 4.6% |
| | Switzerland | 1,325 | 5.0% | 1,561 | 4.8% |
| | South | 6,749 | 25.7% | 7,996 | 24.8% |
| | France | 1,810 | 6.9% | 2,328 | 7.2% |
| | Italy | 2,065 | 7.9% | 2,433 | 7.6% |
| | Spain | 2,874 | 10.9% | 3,235 | 10.0% |
| | East | 5,695 | 21.6% | 7,981 | 24.8% |
| | Czech Republic | 2,253 | 8.5% | 3,122 | 9.7% |
| | Estonia | 2,210 | 8.4% | 3,277 | 10.2% |
| | Slovenia | 1,232 | 4.7% | 1,582 | 4.9% |
| **Alcohol** | | | | | |
| | Hazardous | 6,686 | 25.4% | 6,082 | 18.9% |
| | Non-hazardous | 19,397 | 73.7% | 25,959 | 80.5% |
| | Missings | 231 | 0.9% | 198 | 0.6% |
| **Self-reported health** | | | | | |
| | Good, very good or excellent | 19,154 | 72.8% | 24,098 | 74.8% |
| | Fair or poor | 7,094 | 27.0% | 8,074 | 25.0% |
| | Missings | 66 | 0.2% | 67 | 0.2% |

*Data from the Netherlands come from wave 4.

**Table 2.** Person-years at risk and total deaths in the longitudinal Survey of Health, Ageing and Retirement in Europe (SHARE) sample, waves 4-6, ages 50-85

|  | Person years at risk | Total deaths | Death rates (per 1,000) |
|---|---|---|---|
| Men |  |  |  |
| West | 24,185 | 327 | 13.5 |
| North | 8,525 | 138 | 16.2 |
| South | 18,339 | 414 | 22.6 |
| East | 18,877 | 597 | 31.6 |
| **Total** | **69,926** | **1,476** | **21.1** |
| Women |  |  |  |
| West | 29,354 | 243 | 8.3 |
| North | 9,917 | 106 | 10.7 |
| South | 22,324 | 282 | 12.6 |
| East | 27,510 | 405 | 14.7 |
| **Total** | **89,106** | **1,036** | **11.6** |

**Table 3.** Age-Adjusted Prevalence and Prevalence Ratio of Hazardous drinking by educational level, Survey of Health, Ageing and Retirement in Europe (SHARE), wave 5*, ages 50-85

| | Hazardous drinking prevalence (%) | | | Prevalence ratio (PR, ref. Low)** | |
| | Low (ISCED 0-2) | Medium (3-4) | High (5-6) | Medium (3-4) | High (5-6) |
|---|---|---|---|---|---|
| **Men** | | | | | |
| North | 17.8 (14.9-20.7) | 25.2 (22.9-27.6) | 28.9 (26.1-31.7) | **1.67 (1.36-2.06)** | **1.89 (1.53-2.33)** |
| Denmark | 33.7 (26.6-40.8) | 42.4 (38.0-46.8) | 48.3 (43.3-53.3) | **1.26 (1.04-1.54)** | **1.43 (1.18-1.75)** |
| Sweden | 12.7 ( 9.5-15.9) | 12.9 (10.1-15.7) | 11.5 ( 8.5-14.5) | 1.05 (0.70-1.57) | 1.05 (0.69-1.61) |
| West | 25.9 (23.5-28.4) | 26.8 (25.3-28.4) | 25.1 (23.4-26.8) | 1.01 (0.86-1.20) | 0.97 (0.81-1.16) |
| Austria | 20.6 (15.1-26.2) | 31.8 (27.9-35.6) | 25.8 (21.5-30.1) | 1.14 (0.85-1.54) | 1.01 (0.73-1.40) |
| Belgium | 33.0 (29.0-37.1) | 34.7 (30.0-39.3) | 36.5 (32.6-40.5) | 1.03 (0.85-1.25) | 1.11 (0.93-1.32) |
| Luxembourg | 20.2 (14.8-25.5) | 28.3 (21.9-34.7) | 31.8 (23.3-40.4) | 1.30 (0.95-1.79) | **1.50 (1.06-2.14)** |
| Germany | 20.2 (13.7-26.8) | 25.7 (23.1-28.4) | 23.7 (20.7-26.6) | 1.14 (0.82-1.58) | 1.09 (0.78-1.52) |
| Netherlands | 21.1 (14.7-27.5) | 26.4 (23.2-29.7) | 21.3 (16.0-26.6) | 1.14 (0.84-1.54) | 0.83 (0.57-1.21) |
| Switzerland | 25.9 (23.5-28.4) | 26.8 (25.3-28.4) | 25.1 (23.4-26.8) | 1.01 (0.86-1.20) | 0.97 (0.81-1.16) |
| South | 20.1 (18.7-21.5) | 26.9 (24.1-29.6) | 21.7 (18.8-24.7) | **1.33 (1.14-1.56)** | 1.07 (0.87-1.31) |
| France | 24.6 (20.7-28.6) | 31.3 (27.2-35.4) | 24.3 (19.7-29.0) | **1.26 (1.02-1.56)** | 0.98 (0.75-1.28) |
| Italy | 19.8 (17.5-22.2) | 17.6 (13.6-21.6) | 13.2 ( 8.5-18.0) | 0.91 (0.68-1.22) | 0.77 (0.50-1.18) |
| Spain | 17.4 (15.5-19.3) | 28.5 (22.1-34.9) | 18.3 (14.0-22.6) | 1.26 (0.74-2.13) | 0.97 (0.53-1.78) |
| East | 34.7 (31.6-37.8) | 30.6 (28.4-32.9) | 26.4 (23.0-29.8) | 0.85 (0.71-1.01) | **0.77 (0.62-0.95)** |
| Czech Republic | 38.6 (34.1-43.1) | 35.0 (31.3-38.6) | 33.1 (26.9-39.4) | 0.87 (0.72-1.06) | 0.85 (0.66-1.08) |
| Estonia | 25.9 (21.7-30.0) | 26.4 (23.2-29.7) | 19.9 (15.8-24.0) | 0.88 (0.73-1.07) | **0.73 (0.56-0.94)** |
| Slovenia | 13.2 ( 9.5-17.0) | 14.6 (11.8-17.4) | 13.3 ( 8.6-18.0) | 0.90 (0.60-1.35) | 0.93 (0.54-1.59) |
| Total | 22.3 (21.3-23.3) | 27.3 (26.3-28.4) | 24.8 (23.6-25.9) | 1.09 (0.98-1.21) | 0.99 (0.88-1.10) |
| **Women** | | | | | |
| North | 15.1 (12.9-17.3) | 19.6 (17.5-21.7) | 27.3 (25.0-29.6) | **1.48 (1.23-1.80)** | **1.95 (1.62-2.35)** |
| Denmark | 30.1 (24.9-35.3) | 34.0 (29.7-38.4) | 46.5 (42.1-50.9) | **1.25 (1.03-1.51)** | **1.62 (1.36-1.94)** |
| Sweden | 7.4 ( 5.4- 9.3) | 11.1 ( 8.9-13.4) | 13.7 (11.1-16.3) | **1.61 (1.10-2.37)** | **1.87 (1.28-2.74)** |
| West | 13.6 (12.5-14.7) | 18.2 (17.1-19.3) | 21.8 (20.2-23.4) | **1.32 (1.10-1.58)** | **1.49 (1.22-1.83)** |
| Austria | 9.3 ( 7.1-11.4) | 16.5 (14.0-19.0) | 23.9 (19.8-28.1) | **1.63 (1.21-2.21)** | **2.54 (1.85-3.50)** |
| Belgium | 21.0 (18.4-23.6) | 30.1 (26.3-33.9) | 36.8 (32.9-40.7) | **1.49 (1.24-1.79)** | **1.74 (1.46-2.07)** |
| Luxembourg | 14.6 (11.3-18.0) | 22.9 (16.9-29.0) | 30.6 (21.1-40.0) | **1.50 (1.07-2.10)** | **2.00 (1.36-2.94)** |
| Germany | 10.2 ( 7.6-12.9) | 16.5 (14.6-18.4) | 19.0 (15.7-22.3) | **1.48 (1.09-2.01)** | **1.58 (1.13-2.21)** |
| Netherlands | 26.7 (21.7-31.6) | 28.8 (25.5-32.1) | 28.7 (21.8-35.6) | 1.10 (0.90-1.35) | 1.05 (0.79-1.40) |
| Switzerland | 13.6 (12.5-14.7) | 18.2 (17.1-19.3) | 21.8 (20.2-23.4) | **1.32 (1.10-1.58)** | **1.49 (1.22-1.83)** |
| South | 15.9 (14.8-17.1) | 21.5 (19.2-23.8) | 27.4 (23.8-31.0) | **1.33 (1.13-1.55)** | **1.64 (1.36-1.98)** |
| France | 19.4 (16.8-22.0) | 21.8 (18.5-25.1) | 30.1 (25.0-35.3) | 1.14 (0.91-1.41) | **1.54 (1.23-1.93)** |
| Italy | 17.6 (15.7-19.5) | 19.2 (15.6-22.8) | 18.0 (12.0-24.1) | 1.07 (0.84-1.37) | 0.86 (0.56-1.31) |
| Spain | 10.1 ( 8.9-11.3) | 21.8 (16.7-27.0) | 22.0 (16.4-27.6) | **2.12 (1.25-3.59)** | **2.35 (1.37-4.02)** |
| East | 14.1 (12.3-15.8) | 13.2 (11.9-14.5) | 16.0 (13.5-18.5) | 1.04 (0.73-1.50) | 0.96 (0.60-1.55) |
| Czech Republic | 15.6 (13.0-18.1) | 15.2 (13.2-17.2) | 22.6 (17.8-27.5) | 1.11 (0.74-1.68) | 1.06 (0.59-1.90) |
| Estonia | 8.2 ( 5.6-10.7) | 5.3 ( 4.2- 6.3) | 6.8 ( 4.9- 8.7) | 0.81 (0.54-1.22) | 0.92 (0.58-1.44) |
| Slovenia | 8.4 ( 6.3-10.5) | 8.0 ( 6.0-10.1) | 8.9 ( 5.5-12.3) | 0.91 (0.61-1.37) | 0.95 (0.56-1.63) |
| Total | 15.8 (15.1-16.6) | 19.3 (18.5-20.1) | 25.1 (23.9-25.9) | **1.28 (1.15-1.42)** | **1.53 (1.36-1.72)** |

*Data from the Netherlands come from wave 4.

** PR adjusted by age and self-reported health.