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FOR DEMOGRAPHY AND
GLOBAL HUMAN CAPITAL

The variability of mortality in women and men: a 'serendipity-type' meta-analysis

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Background and objective



Background

Maximum differences in life expectancy between specific subpopulations in Germany, different ages and periods:

| Subpopulations | Men | Women | M-W diff. |
|-----------------------------|------------|--------------|------------------|
| Monastic-general population | 4.63 | 1.21 | 3.42 |
| East-West Germany | 3.52 | 2.83 | 0.69 |
| German regions | 3.61 | 2.20 | 1.41 |
| German districts | 8.53 | 5.85 | 2.68 |
| Education | 5.34 | 2.17 | 3.17 |
| Occupation | 6.01 | 4.48 | 1.53 |
| Income | 5.56 | 3.57 | 1.99 |



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- We hypothesize that male excess mortality is to a large extent caused by specific subpopulations of men with high mortality levels that decrease the average life expectancy of men
- If this was true we should expect a higher variability of mortality among men in various kinds of mortality differentials (e.g. by education, race, obesity, place of residence, ...)



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- Meta-analysis of empirical studies on specific phenomena of differential mortality that separated by sex without analyzing the differences between sexes → “Serendipity-based meta-analysis”
- Serendipity is “the art of making an ‘unsought finding’, [...] when two or more elements (observations, hypotheses, ideas, facts, relations or insights) are combined originally, for the finder or anybody, to something new and true.”

(P. van Andel, *Brit J Philos Sci* 45, 1994, p. 35)



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Data and methods



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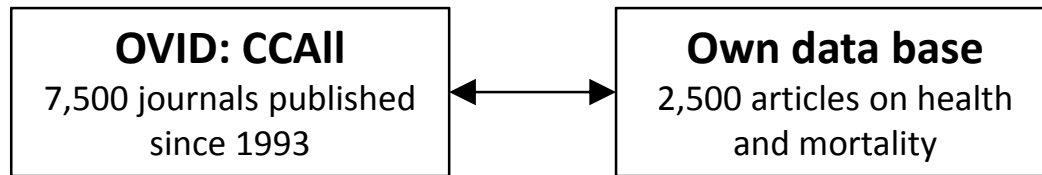


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- Last publication date of studies: 31 January 2007



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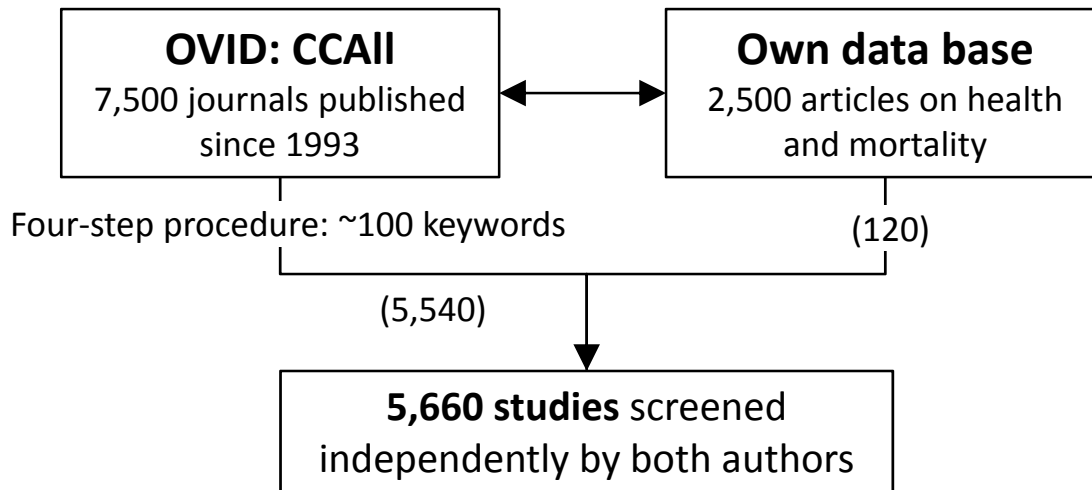


Four-step procedure: ~100 keywords

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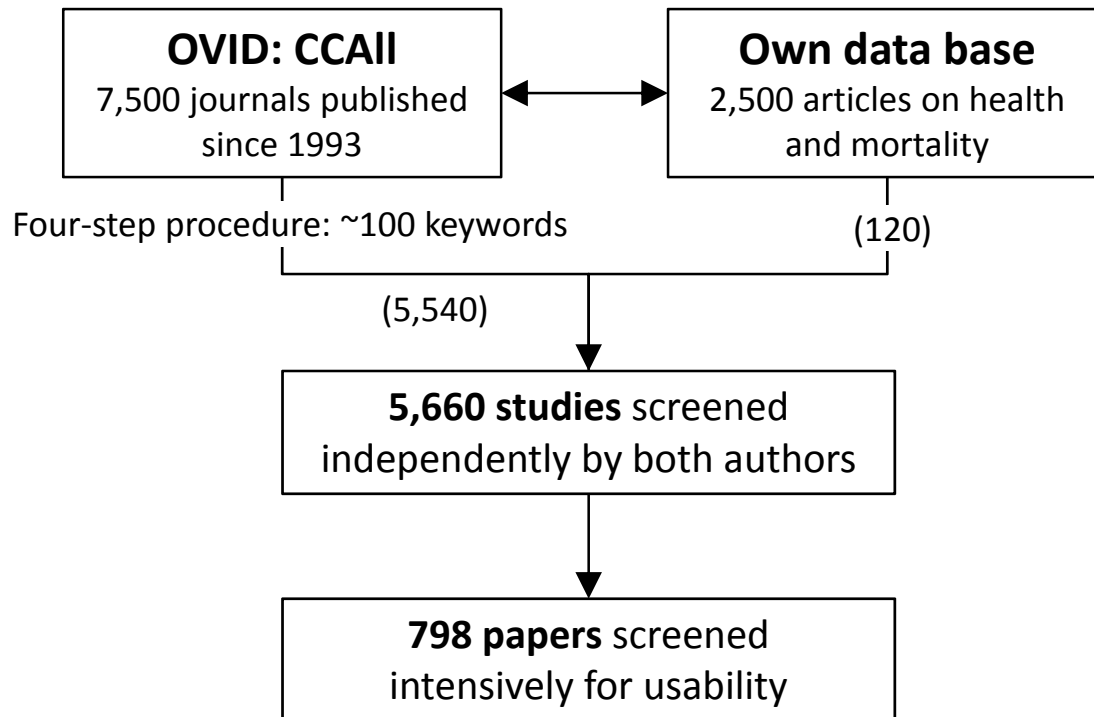


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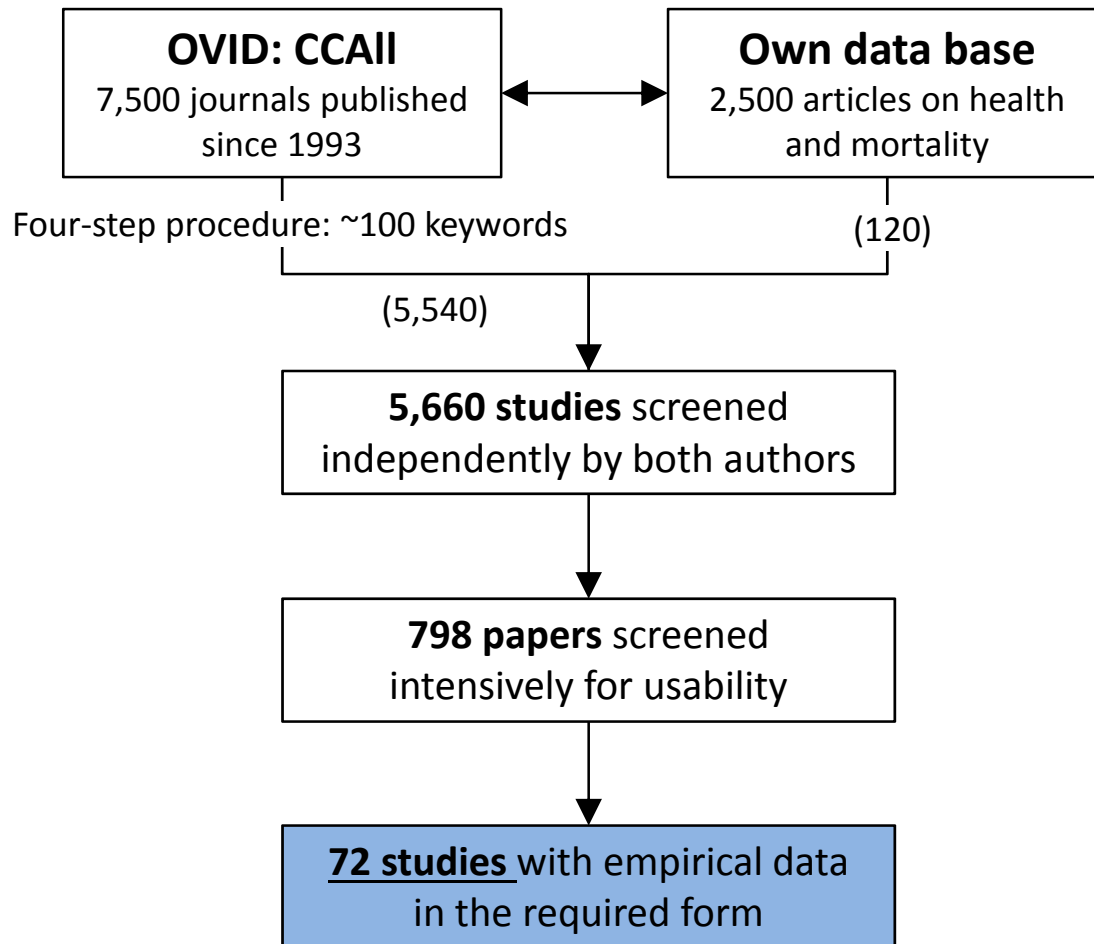


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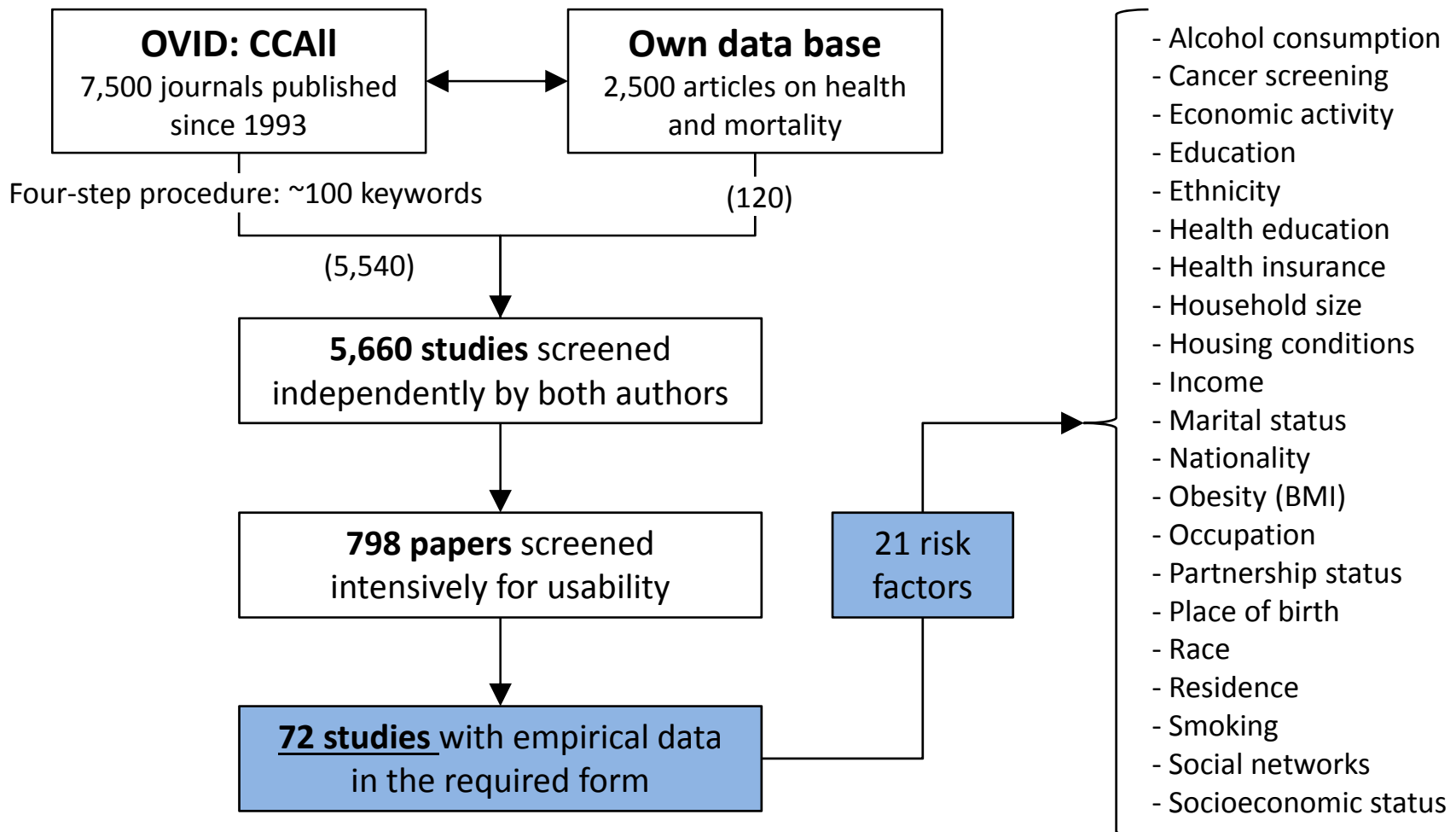


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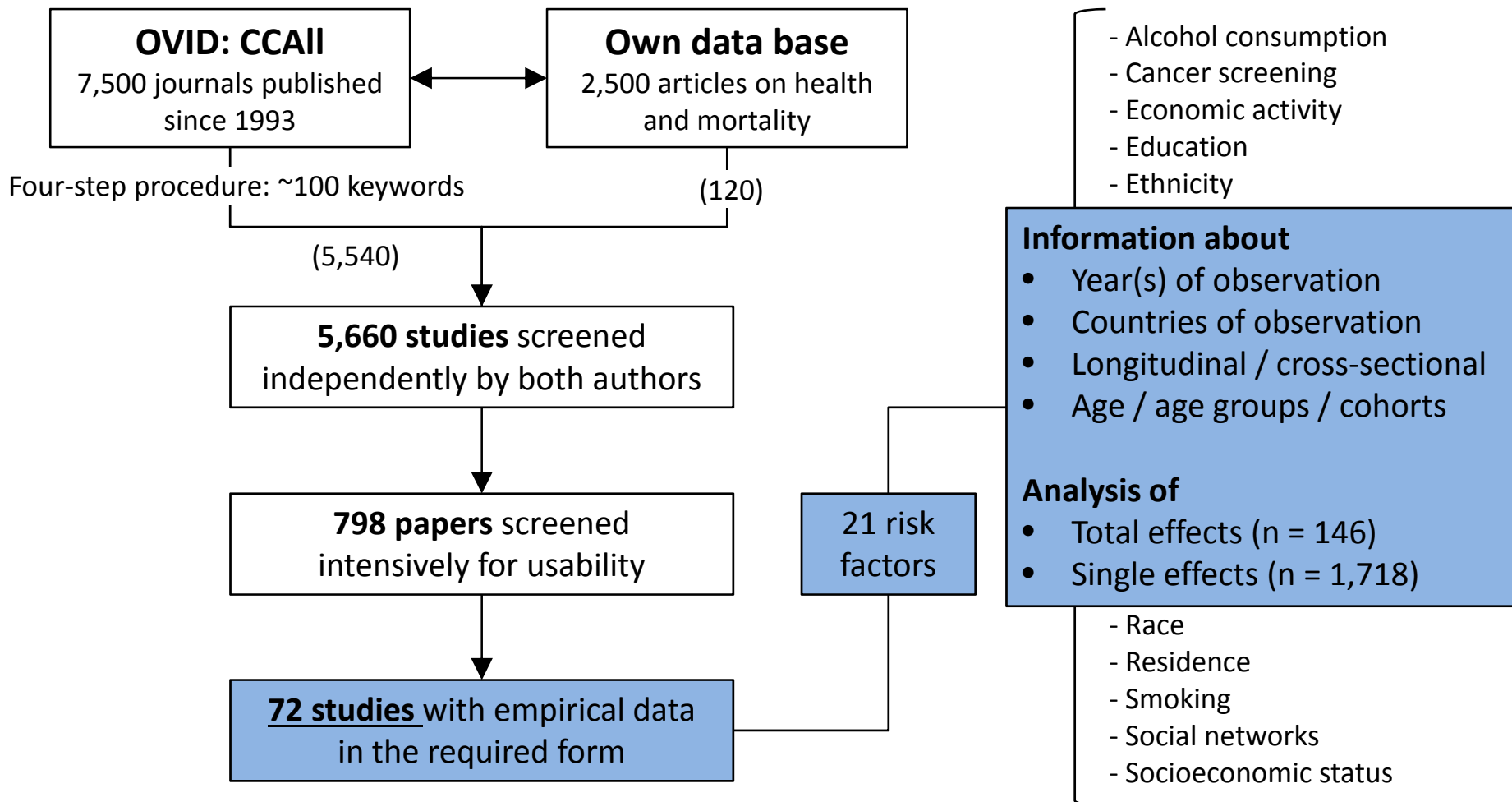
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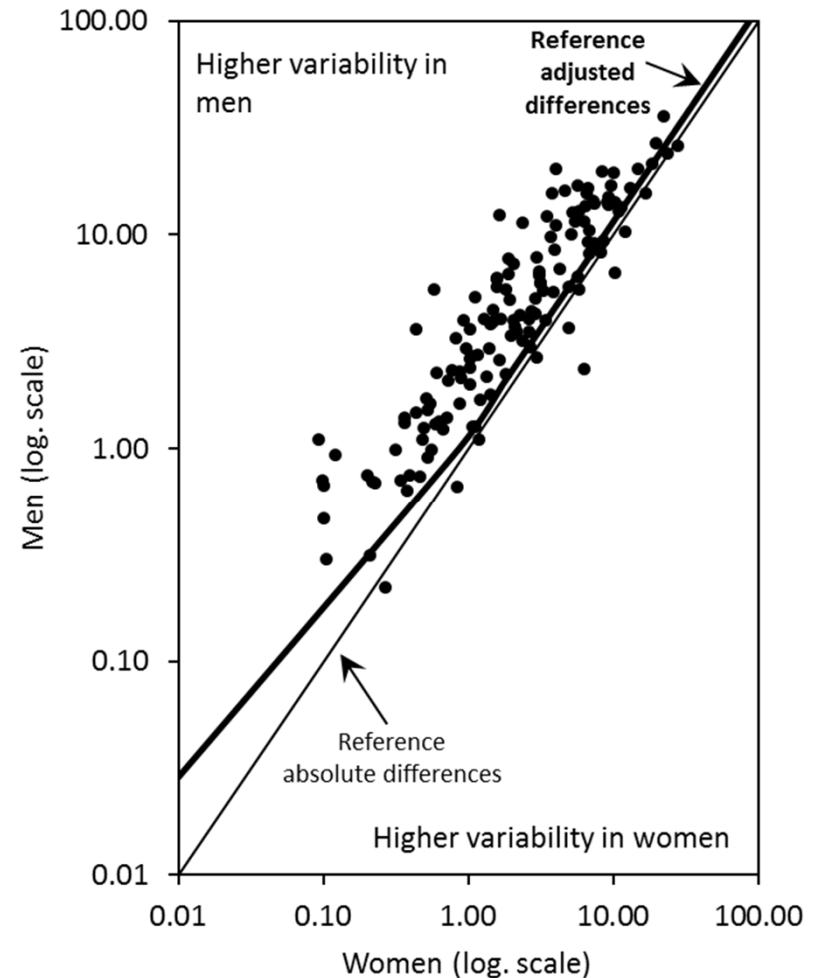
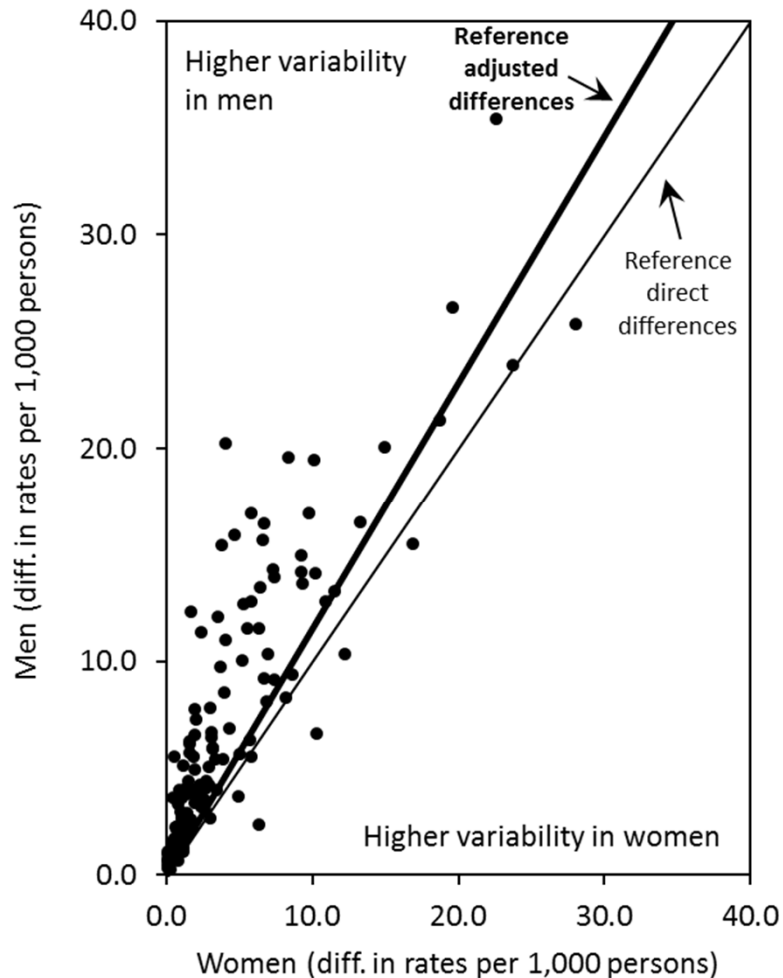




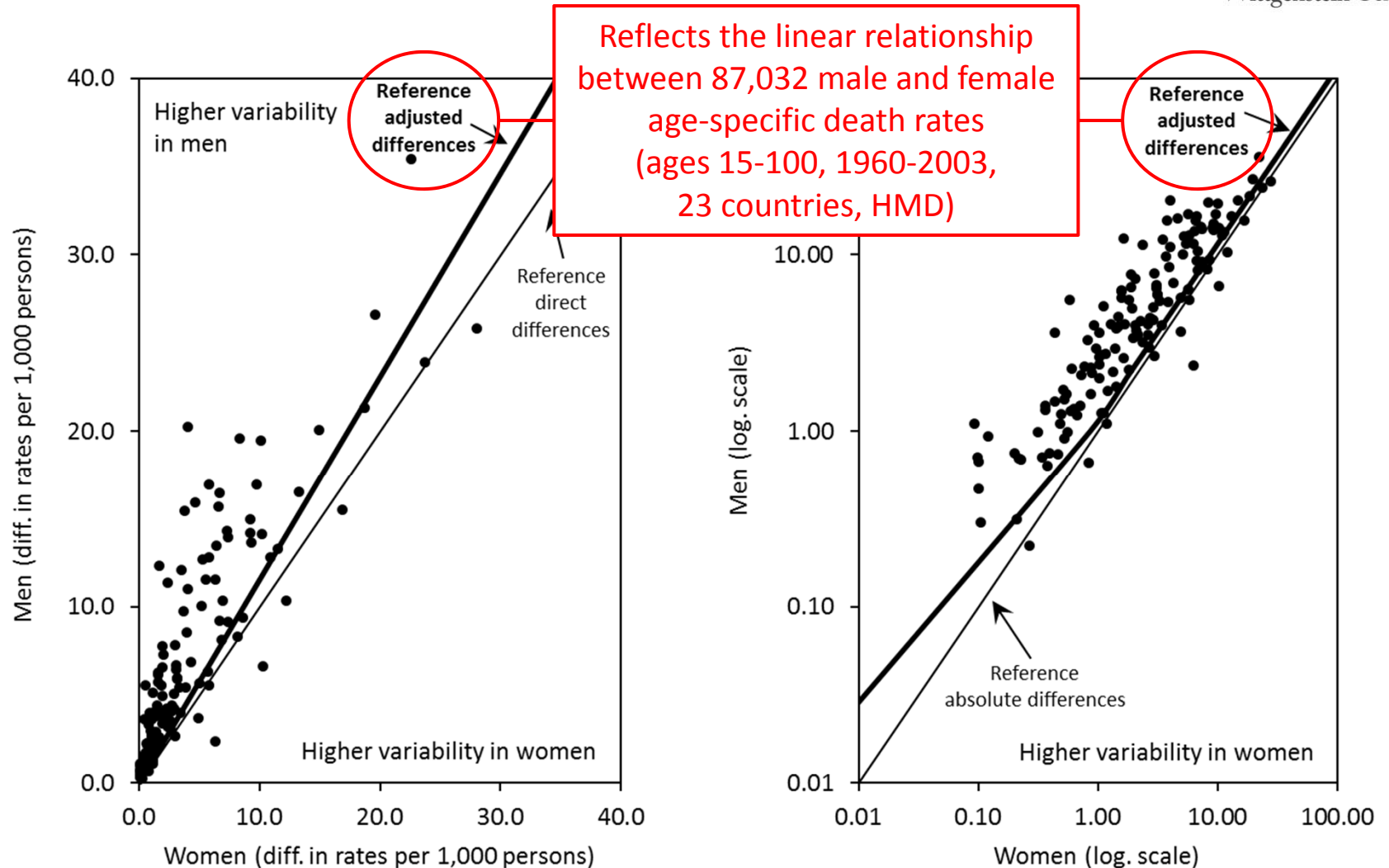
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Results

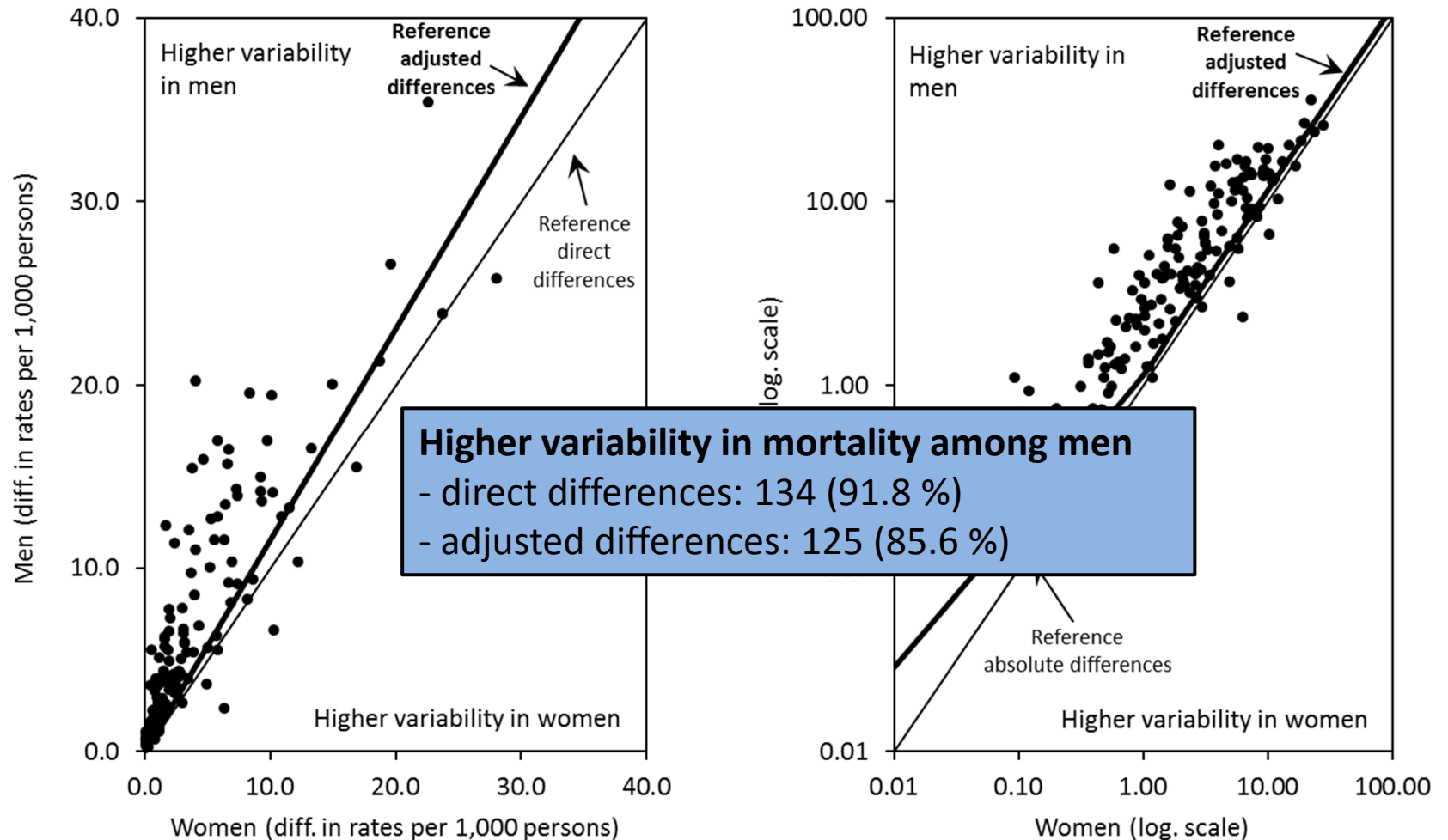
Maximum differences in death rates among women and men, 146 total effects



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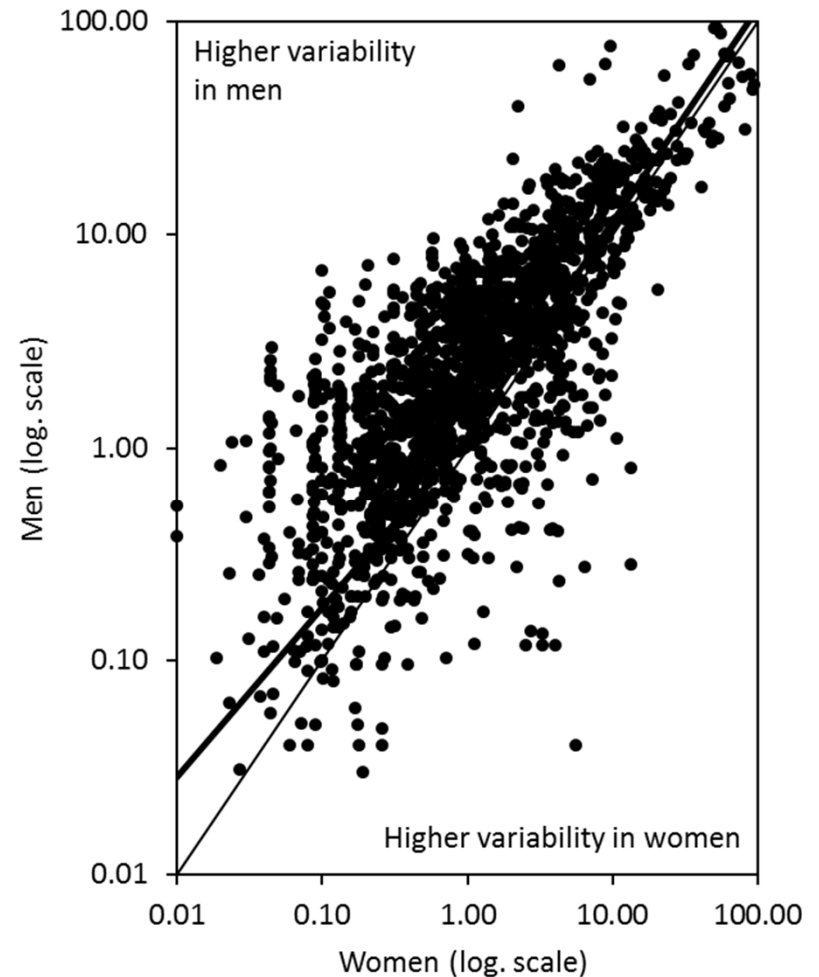
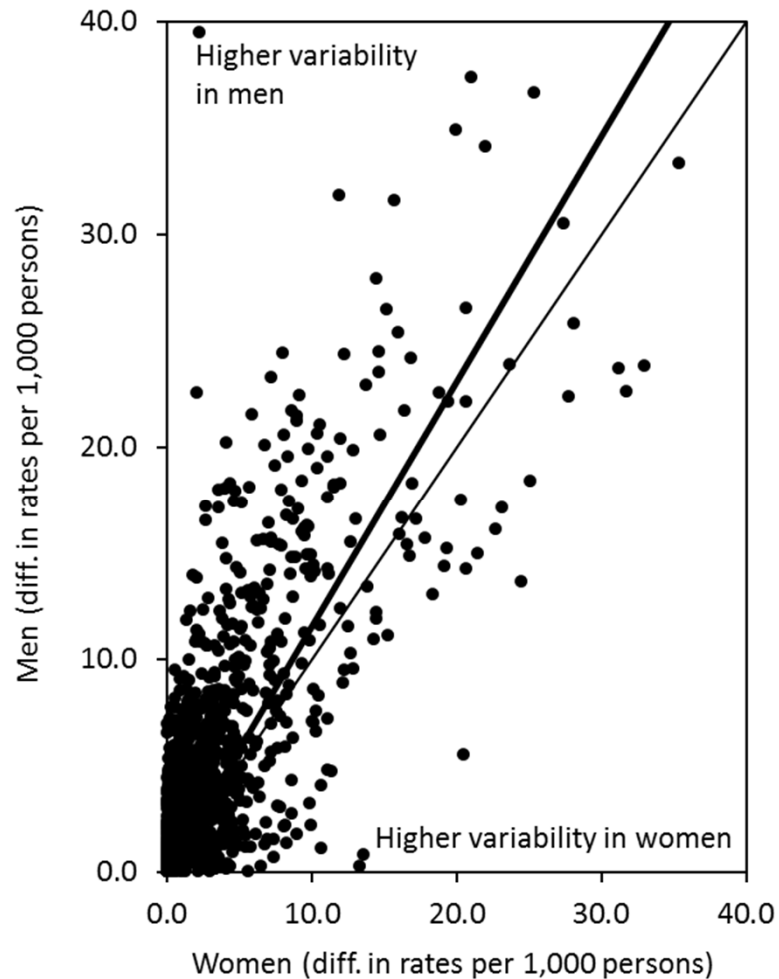
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Maximum differences in death rates among women and men, 1,718 single effects



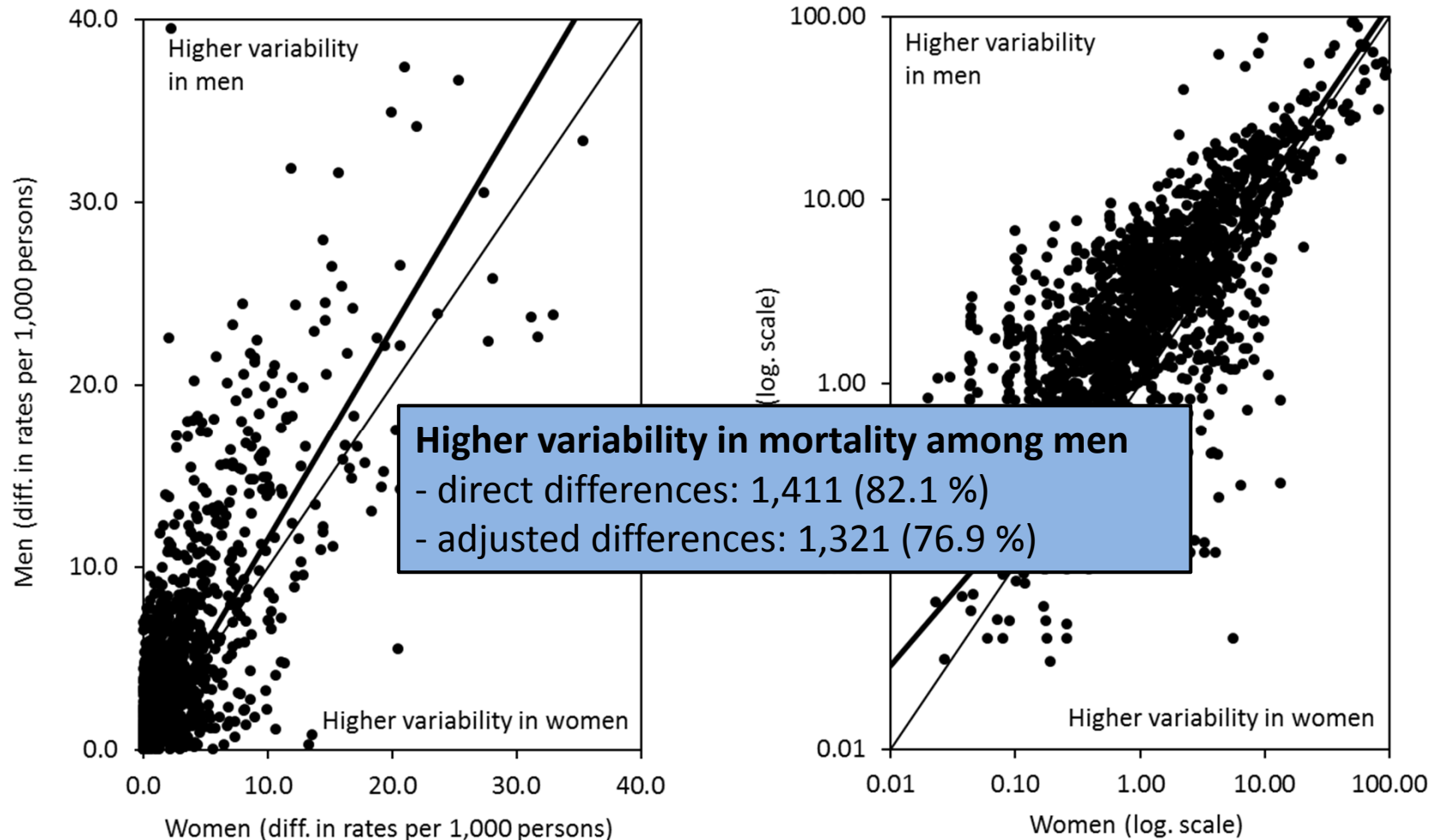
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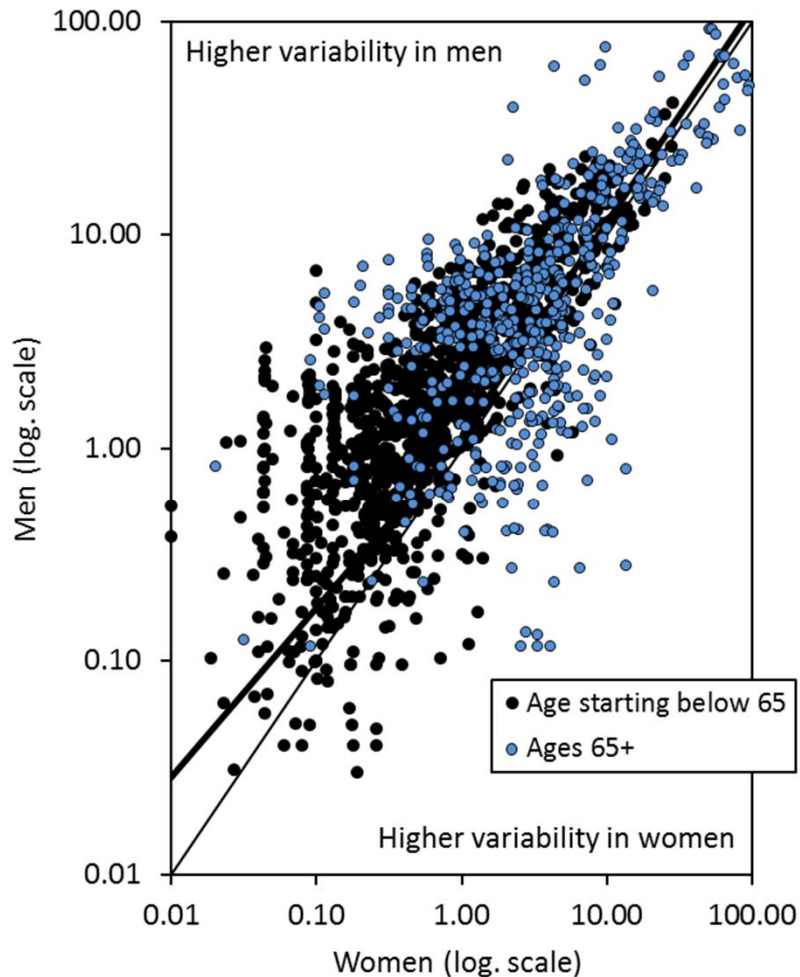
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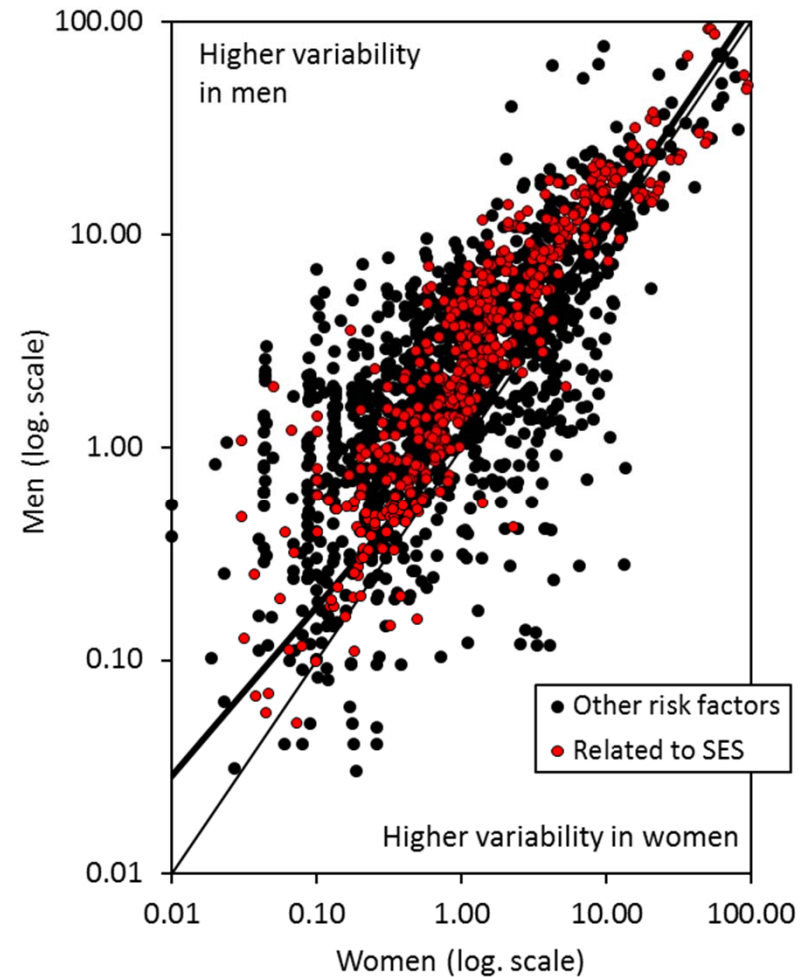
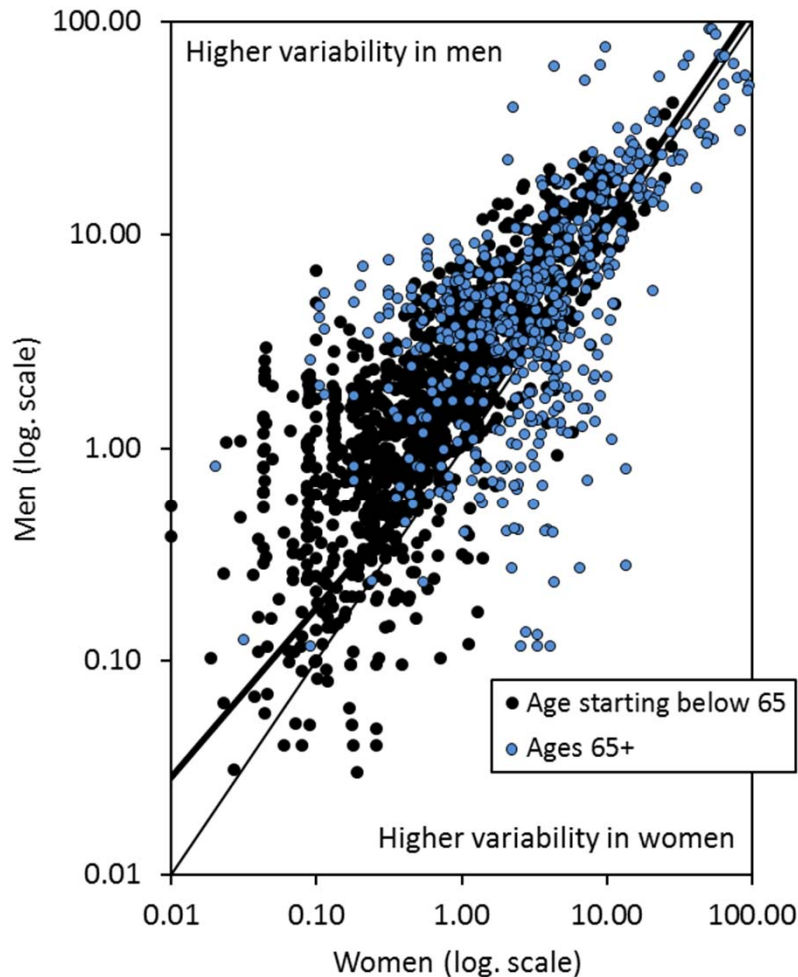
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Summary and conclusions



Summary

- In 86% of all total effects and 77% of all single effects the variability in mortality among men was higher than among women (adjusted sex differences line as ref.)
- The corresponding figures for the direct differences in the variability between male and female mortality are 92% and 82%, respectively
- Risk factors with higher variability in women (20-40% of cases): place of residence, smoking, obesity, race → age effect
- Risk factors related to SES show almost exclusively a higher variability of mortality in men)



Conclusions

- The findings support our hypothesis that overall male excess mortality is caused to a large extent by specific subpopulations of men with particularly high mortality
- It is likely that the subgroups with the highest mortality in the different risk factors contain to a large extent the same individuals
- The almost exclusively higher mortality variability among men in all effects connected to SES indicates that the particularly disadvantaged male subpopulations can be found in this layer of population subdivisions
- Consequently, our study provides support for the hypothesis of Nathanson & Lopez (1987) that the extent of male excess mortality is mainly determined by the harmful lifestyles of blue-collar men



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Thank you very much.

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