

# Socio-economic Status Triggers Mortality Differences by Marital Status and Living Arrangement.

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## 1 Background and Research Questions

In 1853 William Farr was probably the first who recognized that marital status is a predictor of life expectancy. Since then a long line of research has confirmed that marriage is a positive health factor (e.g. Johnson et al. (2000); Verbrugge (1979)). A recent review paper that pooled more than 50 independent publications that were published between 1994 to 2007 concluded that the relative mortality risk for married versus non-married individuals was 0.88 (Manzoli et al., 2007). Several possible pathways were proposed to explain the observed survival differences by marital status. Possible explanations include health selection, the consequences of marital dissolution in terms of material resources, differences in health behaviors and different levels of social support and social relationships.

There are some indications that the relative mortality differences between married and non-married increased in the last decades because mortality of the married declined faster than of the non-married persons (e.g. Valkonen et al. (2004)). At the same time various demographic developments such as the emergence of below-replacement-fertility, increasing divorce rates and the postponement of marriage and parenthood were observed all over Europe. Therefore recent studies argue that due to this social-structural changes, marital status does not reflect today's social reality because more and more individuals are classified as never-married, widowed, or divorced although they are living together with a partner. Today's studies thus have to incorporate both partnership situation and household composition (Joutsen-niemi et al., 2006; Koskinen et al., 2007). Denmark is one of the forerunners of this social-structural changes and Danish data are especially suitable to study these phenomena because it is one of only very few countries where administrative sources provide information on cohabitation and other non-traditional living arrangements on the individual level and for the whole population.

With Finnish register data excess mortality for cohabiters of about 67% was observed among men and women aged 30–64 when compared to married people (Koskinen et al., 2007). If adjusted for indicators of socio-economic status excess mortality for the non-married was reduced to 21–31% for people aged 30–64.

This study aims to extend previous research and investigate the interaction between socio-economic status and living arrangement in more detail.

## **2 Data and Methods**

We apply hazard regression models on individual-level Danish register data. In total we studied 1,984,402 men and 1,903,670 women aged 18 to 65 who lived in Denmark between 1st January 1990 and 31st December 2004. Danish registers are considered as a source of detailed and very exact information with a very low percentage of missing data. The information collected for every individual are events such as birth, death, migration, as well as a variety of very detailed demographic background information such as education, income, wealth, marital status, parity, and family type.

## **3 First Results**

Relative to the married, excess mortality among men and women aged 18–65 was observed for all non-married living arrangements. Lowest excess mortality was found for cohabiters (30%), highest for households of 3 or more singles (350%). Adjusting for the three indicators of socio-economic position reduced the excess mortality of non-married groups remarkably. For men excess mortality of cohabiters was not statistically significant anymore. Additional interaction models revealed that married individuals have the lowest relative mortality differences by income, education and wealth of all types of living arrangements. We also found that they do not automatically and in all cases experience the lowest risk of dying. For both sexes we observed a lower risk of dying for highly educated cohabiters and cohabiters with high income than for their married counterparts. The results are statistically significant at the 0.001 level.

## **4 Discussion**

We used a longitudinal approach on individual-level Danish register data to investigate the relation between living arrangement and socio-economic characteristics.

We showed that married individuals do not always have the lowest mortality of all living arrangements. Cohabitors of high socio-economic status experience a significantly lower risk of dying among men and women. Further results will be available in time for the PAA meeting.

## References

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