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Gender and Mortality with Regard to Marital Status in 19th Century Sweden

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Ever since the beginning of the collection of national vital statistics in mid-eighteenth century Sweden excess male mortality has been the rule in practically all ages. Yet there have been considerable variations in mortality over time and space with regard to the magnitude of the sex ratio as well as to different marital status and age groups. The focus here will be on the role of marital status for gender differentials in mortality.

From the western world of today we know that married people, particularly men, usually have lower death rates than unmarried persons of the corresponding sex. Two major theories have been used in order to explain the unfavourable death rates for unmarried people. The first focuses on the protective effects of marriage. Marriage is claimed to give social support and to prevent unhealthy behaviour. The other theory emphasises the selective mechanisms on the marriage market. Factors like economic weakness, low health status and unhealthy behaviour (excessive drinking for example) are supposed to be a disadvantage on the marriage market and to increase mortality risks. Results from modern studies indicate that both kind of mechanisms influence the marital status differentials of mortality.1

In Sweden sex- and age-specific mortality by marital status has been calculated since the 1870s. Like the situation of today unmarried persons, especially men, generally had higher mortality rates than those who were married (Figure 1).

The great importance of marital status for male mortality is underlined by the fact that death rates of married males in most ages were relatively close to those of females irrespective of their marital status, while bachelors had considerably higher death rates than other
groups. In reproductive ages, however, married women had somewhat higher levels than spinsters, reflecting the risks of maternal mortality.

Figure 1. Mortality per 1,000 by sex and marital status. Sweden 1871–1880.

a) 20-49 years of age

[Graph showing mortality rates for different groups by age and marital status]

b) 50-74 years of age.

[Graph showing mortality rates for different groups by age and marital status]

Sources: G. Sundbärg (1970), Bevölkerungsstatistik Schwedens 1750–1900, tab. 57. The more disadvantageous death rates of spinsters in post-reproductive ages may be a reflection of a miserable socioeconomic situation of many single woman, when driven out of the labour market (as housemaids) about the age of 40 and having to rely on casual work and poor relief.

The relatively high death rates of young widows and widowers might be an effect of high incidence of tuberculosis in certain families. The fact that widowers in general had more disadvantageous mortality rates compared to married males than was the case for widows compared to married females, with the exception of the youngest ages, indicates the importance of protective effects of marriage for males.
Even selective mechanisms might however have contributed to the relatively high mortality levels among widowed persons. Unhealthy environmental or lifestyle factors shared by certain spouses could have affected the risks of premature death for both the deceased and the surviving spouse. Selective mechanisms influencing remarriage patterns may also have contributed to this result.

Figure 2. Mortality per 1,000 by sex and marital status, 20–59 years of age. Rural parishes of the Sundsvall district.

a) 1803–1859

N (person years): married men=131 166, married women=131 848, unmarried men=60 334, unmarried women=62 897.

b) 1860–1892.

N (person years): married men=172 741, married women=177 042, unmarried men=84 869, unmarried women=64 800.

Sources: The Demographic Data Base, Umeå University.

As mentioned there are no ready-made data for mortality by marital status in Sweden before 1870. From local aggregates of individual data, provided by the Umeå Demographic Data Base, death rates by marital status have been calculated for the rural parts of the Sundsvall district even for the early 19th century (Figure 2).
Without going into detail it can be noted that mortality patterns were partly the same for the pre-industrial (1803–59) and the industrial period (1860–92). Unmarried men and women suffered from higher mortality than married members of the corresponding sex in most age groups. As was the case on national level the sex differentials in mortality diminished over time. Of course these results cannot be generalized to all of Sweden.

Figure 3. Mortality per 1,000 by sex and marital status, 20-64 years of age, 1871–1880.

a) Rural Sweden

![Graph showing mortality trends for rural Sweden.]

b) Urban Sweden.

![Graph showing mortality trends for urban Sweden.]

Sources: Bidrag till Sveriges Officiella Statistik A, Befolkningsstatistik 1890:1, Bihang, tab. N.

Urban environments generally produced higher mortality than rural ones in the 19th century (Figure 3). This “urban penalty” was especially marked among bachelors in ages over 30 years, while the urban–rural differential was much smaller among females, as can be seen from the figures. Probably the urban lifestyle, for example the more common occurrence of excessive drinking habits than in rural areas, was more
devastating for the health of single men. Health problems connected to unsanitary and overcrowded lodging houses and hostels in big cities like Stockholm, may also have contributed to the higher death rates of unmarried males.

During the last decades of the 19th century the urban excess mortality declined. A slight “rural penalty” came into existence for women in early 20th century, for married females in reproductive ages and for their never married sisters even in postreproductive ages, while an “urban penalty” still existed among males, though at a lower level than before.

Figure 4. Percentage change of mortality by sex and marital status in 1901–10 compared to 1871–80, 20–74 years of age. Urban and rural Sweden.

a) Men

b) Women.

This more advantageous development for urban areas was probably to a large extent an effect of public health reforms, regarding water and sanitation etc, which primarily affected the environment of urban residents (Figure 4).

Females in reproductive ages, particularly women in towns, benefitted from the introduction of antiseptic techniques in late 19th century, which resulted in the disappearance of the former excess urban death rates for maternal mortality (childbed fever). Furthermore fertility rates started to decline in towns around the turn of the century, which implied that excess of rural fertility rates over urban areas became even greater than before.

Selection mechanisms might also be part of the explanation. Females who remained in the countryside, especially those who never married, may on the average have been less healthy than their sisters who sought job in urban areas.

Middle-aged bachelors in urban environments experienced the most favourable development of mortality during this period. Part of this may have been an effect of declining alcohol consumption, but also of the public health reforms improving sanitary and living conditions in general. It should also be remembered that mortality rate among urban single men started to decline from a very high level.

With the exception of suicidal rates there are no national statistics for Sweden on cause-specific mortality with regard to marital status and age. From the late 19th century, however, we have some data from the small town of Linköping (circa 15 000 inhabitants in 1900), situated in the county of Östergötland in southeastern Sweden (Figure 5).

Excess male mortality is the rule for most causes of death. This is particularly pronounced for alcohol-related deaths and accidents, reflecting gender related differences in behaviour and occupational roles.

Death rates for accidents are typically higher for males according to almost all available international and historical data. One reason for this is that traditional male jobs are generally more hazardous. The fact that this sex differential in mortality exists even in childhood strongly indicates that males commonly exhibit more risky behaviour than females.
Figure 5. Major causes of death for married and unmarried males and females. Linköping 1861–1891. Mortality per 1,000.

a) 20–49 years of age.

N (person years): married males=24 961, unmarried males= 25 134, married females=27 935, unmarried females=43 176

b) 50–69 years of age.

(N (person years): married males=11 037, unmarried males= 3 905, married females=9 846, unmarried females=16 194)

Sources: Computerized parish registers of Linköping 1861–1891, Historical Database of Linköping / Demographic Database, Umeå University.

Comments: The figures are standardized for age, based on the proportion of 5-year age groups for all population in the actual age interval. Denominator (N) is person years.

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In most cases unmarried people experienced higher death rates than married persons of the same sex. In reproductive ages however married women had higher mortality in *tuberculosis* than their husbands and unmarried sisters, probably an effect of higher fertility rates and risks connected to pregnancy. Deaths from tuberculosis and *maternal mortality* (direct obstetrical deaths) are the dominant causes of mortality among married women. Ulf Högb erg has demonstrated that infectious diseases like tuberculosis and pneumonia had a considerable impact on indirect maternal deaths in 19th century Sweden.\(^7\)

For *water- and food-borne diseases*, particularly cholera and typhoid, there is no consistent pattern of excess mortality for unmarried males and females. National mortality data specified for marital status from the Netherlands (1869–1872), calculated by Frans van Poppel and Inez Joung, are roughly in line with this result concerning typhoid.\(^8\) One reason may have been that the there were more potential carriers who could transmit infection by food and drink in families than in single or smaller households.

The fact that unmarried males experienced relatively more deaths caused by *accidents and alcohol consumption* than married men indicates the importance of marital status in relation to differentials associated with behavioural and lifestyle factors. Other possible factors contributing to the general pattern of excess male mortality are sex differences in mobility and social contacts, as well as biological factors. Males on average had a more mobile life and more contacts with others than females. This also meant that men ran a larger risk of contracting various infectious diseases.\(^9\)

Biological factors, like body fat distribution, chromosomal differences between females and males and sex-hormones, may also have contributed to sex differential mortality, favouring female longevity.\(^10\) On the other hand these effects were counteracted by risks connected to the female reproductive system and functions.

Among contemporary observers it was believed that the problem of excessive drinking was more acute for unmarried males than married. Data on short-term variations in alcohol consumption and yearly death rates of late 19th century indicate that excessive drinking was primarily a problem for bachelors in urban environments, but to some extent it also affected married men in the towns, while rural males and females in general were more or less unaffected (Figure 6).\(^11\)
Figure 6. Alcohol consumption per capita on national level and mortality for never married urban population 40–59 years of age. Sweden 1870–1899. Annual percentage deviation from trend values.

a) Men.

Regression data

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<th></th>
<th>Reg. Coeff.</th>
<th>p-value</th>
<th>r²</th>
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Rural

<table>
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<td>Married females</td>
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<tr>
<td>Unmarried females</td>
<td>0.08</td>
<td>0.47</td>
<td>0.02</td>
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</tbody>
</table>

Sources: Bidrag till Sveriges Officiella Statistik, Ser. A & V.
Alcohol consumption is probably not the only explanation for the mortality fluctuations illustrated by the figures. The peaks or increases in short term alcohol consumption as well as the death rates coincide with the upswings or peaks in business cycles in 1870s and 1890s, and this is most probably not mere coincidence. Rising real wages tended to stimulate alcohol consumption. Times of industrial prosperity during early industrialisation also meant increased migration into urban areas, with the worsening of problems of overcrowding and bad sanitation. Many of the in-migrants to towns during industrial booms were males.

At least concerning Stockholm we know that a large proportion of those living in overcrowded and extremely unsanitary habitations, like lodging houses and hostels, were single males. These miserable living conditions probably contributed to the excess male mortality from different infections, such as the typhus epidemics in Stockholm in the 1870s, which struck adult males in particular.

These results are in accordance with contemporary narrative sources (for example official reports of county governors and provincial doctors), that claim that alcohol consumption and problems of excessive drinking during the last half of the century were largely concentrated to urban areas.

Conclusion

Today’s mortality differentials by marital status also existed in nineteenth-century Sweden.

Married persons usually had lower mortality rates than single members of the same sex. This differential was particularly accentuated among males.

“Lifestyle factors” are of great importance for explaining this mortality pattern. Single men seem to have been more prone to excessive drinking and were often living a less orderly life than those who married.

Socio-economic factors might also have contributed to the mortality differentials related to marital status. Bachelors were probably on average poorer than married men. A large proportion of those living in overcrowded and extremely unsanitary habitations were single men.

Among females in reproductive ages fertility rates and maternal mortality largely contributed to higher death rates of married women.
The more disadvantageous death rates of spinsters in post-reproductive ages were probably to some extent an effect of the unfavourable economic conditions of older single women.

Selective mechanisms as well as the protective effects of marriage probably played a role for the marital status related differentials in the demographic and socio-economic patterns of both sexes.

General excess male mortality as well as excess mortality of single men was more pronounced in towns, indicating that urban lifestyle was more devastating for males in general and for bachelors in particular. The urban–rural differential in mortality rates, however, diminished over time, eventually resulting in a slight “rural penalty” for females in early 20th century.

Notes
5. *Bidrag till Sveriges Officiella Statistik* A 1904:4, tab Q.
15. K. A. Tengdahl (1897).
16. K. Linroth (1892), pp 26
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