SHORT REPORT

Cold related mortality in England and Wales; influence of social class in working and retired age groups

G C Donaldson, W R Keatinge

J Epidemiol Community Health 2003;57:790–791

Percentage increases in mortality in winter were generally higher among lower than higher social classes in 1970–72, but recent studies show no clear association with regional estimates of deprivation. We now assess cold related mortalities (always expressed as a fraction of baseline mortality) among social classes in England and Wales, in working and retired age groups, to look for any current effects of social class, and to see whether any such effects are work related.

METHODS AND RESULTS

Daily deaths 1998–2000 from the Office of National Statistics, for men and women in England and Wales aged 65–74 years and 50–59 years, were extracted by class (when recorded), as 1 (professional), 2 (managerial and technical), 3N (non-manual skilled), 3M (manual skilled), 4 (partly skilled), or 5 (unskilled), with between 896 and 66 477 deaths in each age, sex and class group. Married women with only domestic work related.

Cold related mortality in the retired (65–74) age group was generally higher in men of class 5 (unskilled) than class 1 (professional), or other classes, with little difference between men, and women or housewives, of any class (table 1). In the working age group (50–59), women in class 5 had significantly higher cold related mortality than those in class 1, but in men in class 5 cold related mortality was on average lower than in men of any other class. It was also significantly lower in class 5 among men than women, or housewives who represented 62% of these women (table 1), both in direct comparison and in relation to comparisons of men and women in class 1.

CONCLUSION

In men of working age (50–59) cold related mortality was low in class 5 compared with any other class, though it was high in class 5 men of the retired age group (65–74). In the class 5, but not class 1, men of working age cold related mortality was also low compared with women or housewives of the same class and age group. This implies a beneficial effect of work related factors in men of class 5 but not class 1, independent of home environment and income. The simplest explanation is that internal heat production from manual work protected class 5 men against daytime cold stress.

International surveys also point to an important role of out of home factors. Cold related mortality in eight regions of Europe varied inversely with the effectiveness of measures taken by the people in the different regions to avoid both outdoor and indoor cold.5 Home heating and insulation has received much attention in Britain, but less attention has been paid to out of home factors. We suggest increased emphasis on reducing exposure to outdoor cold stress, in campaigns to reduce winter mortality.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Cold related mortalities in 1998–2000; England and Wales, at ages 65–74 and 50–59 (as % change in mortality/˚C, and 95% confidence limits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>1</td>
</tr>
<tr>
<td>Age 65–74</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>1.196</td>
</tr>
<tr>
<td></td>
<td>(0.566 to 1.827)</td>
</tr>
<tr>
<td>Women</td>
<td>1.438</td>
</tr>
<tr>
<td></td>
<td>(0.312 to 2.565)</td>
</tr>
<tr>
<td>Housewives</td>
<td>1.428</td>
</tr>
<tr>
<td></td>
<td>(0.158 to 2.697)</td>
</tr>
<tr>
<td>Age 50–59</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>0.761</td>
</tr>
<tr>
<td></td>
<td>(–0.263 to 1.785)</td>
</tr>
<tr>
<td>Women</td>
<td>–0.385*</td>
</tr>
<tr>
<td></td>
<td>(–2.040 to 1.270)</td>
</tr>
<tr>
<td>Housewives</td>
<td>0.136</td>
</tr>
<tr>
<td></td>
<td>(–2.025 to 2.296)</td>
</tr>
</tbody>
</table>

Difference from men in same class; *p<0.05, **p<0.01. Men/women or men/housewife difference in class 5 differs from that in class 1, tp<0.05, tp<0.01. tp<0.01 for difference between class 1 and 5.
Key point

- Cold related mortality was generally low in class 5 men of working age (50–59) only, compared with men in other classes, and significantly compared with class 5 women or housewives. It implies a beneficial effect of work related factors, independent of home environment and income. The simplest explanation is that internal heat production from manual work protected against daytime cold stress.

Policy implications

- Physical exertion and other daytime protection against cold stress need emphasis in campaigns to prevent winter mortality.

REFERENCES


THE JECH GALLERY

Influential women in occupational health
Alice Hamilton, MD: gaining visibility for industrial medicine

27 February 1869–22 September 1970
Country of birth: USA

For me, the satisfaction is that things are better now, and I had some part of it.”

In addition to authoritative work on the dangerous lead trades (for example, smelting, refining, painting, manufacturing), Hamilton conducted studies on mercury, carbon monoxide, rubber, and the munitions industries. In a span of 40 years, she authored over 80 scientific reports. Her pace slowed only in old age (she died at age 101). The US OSHAct was enacted three months after her death in 1970.

The authors gratefully acknowledge the insight and generous contributions of Allen F Davis, Vilma R Hunt, Anne Firor Scott, Barbara Sicherman, and Myron Wegman.

photo credit: Schlesinger Library, Radcliffe Institute, Harvard University.
Cold related mortality in England and Wales; influence of social class in working and retired age groups
G C Donaldson and W R Keatinge

*J Epidemiol Community Health* 2003 57: 790-791
doi: 10.1136/jech.57.10.790

Updated information and services can be found at:
http://jech.bmj.com/content/57/10/790

These include:

**References**
This article cites 4 articles, 3 of which you can access for free at:
http://jech.bmj.com/content/57/10/790#BIBL

**Email alerting service**
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

**Topic Collections**
Articles on similar topics can be found in the following collections

- Epidemiologic studies (2838)
- Mortality and morbidity (1463)
- Sociology (974)

**Notes**

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/