Relative impact of childhood and adulthood socioeconomic conditions on cause specific mortality in men

Øyvind Naess, Bjøgulf Claussen, George Davey Smith

METHODS AND RESULTS

A cohort of all inhabitants in Oslo aged 30–54 years in 1990 was linked to the Census, Tax, and the Death Registers, for 58,751 people. Housing conditions from the 1960 census provided information on childhood social conditions. Six aspects of housing conditions were included in a housing index. This included information on rooms per household capita (0,1,2), type of dwelling (0,1,2), ownership (0,1), toilet (0,1), bath (0,1), and telephone in dwelling (0,1). This was summed for each individual and categorised to five approximately similar size groups. Income information for 1990, derived from taxation authorities, was used as the indicator of social conditions in adult age. Yearly wages, social security benefits, and other earnings were summed for the household, and divided by the number of consumers according to the following weights: 1.0 for the first adult person, 0.7 for spouse or child older than 16, and 0.5 under 16 years. The percentage of people across the five groups of housing conditions and income was fairly equal with 20% in the top and bottom income groups respectively. The age range for which 1960 census data provided evidence on childhood circumstances was determined by investigating age at marriage, because in Oslo at that time men would generally be registered as living in their parental home until marriage because of housing scarcity. The cut off point was chosen at the age where 97% were unmarried and this was evenly distributed across values of the housing index. Some did not answer all questions in the census, had zero income, or lived outside Norway in 1960 (34%). Age adjusted mortality rates were 37.1 among the excluded and 46.1 per 10,000 person years, suggesting small differences between the groups. To compare the relative influence of social conditions at two points in time a relative risk was calculated. Mortality in those with poor income in 1990 could represent reverse causality influencing various causes unevenly, such as with psychiatric causes. But with eight years of follow up this is not generally thought to be important. Because of fewer deaths from specific causes we did not analyse data for women in this report.

Various causes of death are thought to be differently related to social conditions across the life course because timing and duration of social and biological influences differ. These findings imply that future aetiological studies looking at specific causes should take into account how social determinants are experienced across the life course and

Key points

- The relative impact of childhood and adulthood social conditions varies by cause of death. This report presents further and more detailed evidence of this on the 10 most common causes of death.
interventions against social inequalities in health will have to
address this.

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Policy implications

The potential impact of measures in childhood and adulthood on health inequality at adult ages may vary by specific outcomes.

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Conflicts of interest: none declared.

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Table 1  Relative indices of inequality (RII) in 1960 and 1990 for cause specific mortality 1990–98 among male inhabitants in Oslo 1990 30–54 years old (n = 58 751)

<table>
<thead>
<tr>
<th>Causes of death</th>
<th>Number of deaths</th>
<th>1960 RII* (unadjusted)</th>
<th>1960 RII* (mutually adjusted)</th>
<th>1990 RII* (unadjusted)</th>
<th>1990 RII* (mutually adjusted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer large bowel and rectum</td>
<td>68</td>
<td>2.10 (0.91 to 4.83)</td>
<td>2.10 (0.91 to 4.85)</td>
<td>0.95 (0.40 to 2.24)</td>
<td>0.91 (0.38 to 2.17)</td>
</tr>
<tr>
<td>Lung cancer</td>
<td>104</td>
<td>2.48 (1.26 to 4.88)</td>
<td>2.36 (1.20 to 4.66)</td>
<td>3.88 (1.92 to 7.84)</td>
<td>3.77 (1.86 to 7.65)</td>
</tr>
<tr>
<td>Malignant melanoma</td>
<td>49</td>
<td>0.53 (0.19 to 1.45)</td>
<td>0.57 (0.21 to 1.58)</td>
<td>0.22 (0.07 to 0.67)</td>
<td>0.23 (0.08 to 0.69)</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>122</td>
<td>13.09 (5.91 to 28.98)</td>
<td>10.60 (4.79 to 23.45)</td>
<td>28.55 (11.86 to 68.73)</td>
<td>24.94 (10.31 to 60.33)</td>
</tr>
<tr>
<td>Alcohol related diseases</td>
<td>204</td>
<td>4.26 (2.57 to 7.05)</td>
<td>3.94 (2.38 to 6.51)</td>
<td>8.73 (5.15 to 14.81)</td>
<td>8.38 (4.93 to 14.26)</td>
</tr>
<tr>
<td>Coronary heart disease</td>
<td>338</td>
<td>2.73 (1.87 to 4.00)</td>
<td>2.62 (1.79 to 3.83)</td>
<td>2.99 (2.03 to 4.41)</td>
<td>2.89 (1.95 to 4.27)</td>
</tr>
<tr>
<td>Stroke</td>
<td>78</td>
<td>1.82 (0.84 to 3.95)</td>
<td>1.79 (0.82 to 3.88)</td>
<td>1.07 (0.75 to 1.72)</td>
<td>1.63 (0.73 to 3.64)</td>
</tr>
<tr>
<td>Other cardiovascular causes</td>
<td>108</td>
<td>1.24 (0.64 to 2.39)</td>
<td>1.19 (0.62 to 2.31)</td>
<td>2.45 (1.23 to 4.87)</td>
<td>2.43 (1.22 to 4.84)</td>
</tr>
<tr>
<td>All causes</td>
<td>2147</td>
<td>1.77 (1.23 to 2.55)</td>
<td>1.45 (1.15 to 2.38)</td>
<td>4.22 (2.87 to 6.19)</td>
<td>4.12 (2.80 to 6.06)</td>
</tr>
</tbody>
</table>

* Age adjusted relative indices of inequality (95% confidence intervals).

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