

The Whitehall Study

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The Whitehall study examined mortality rates over 10 years among male British Civil Servants aged 20-64. The study was an attempt to avoid some of the problems created by the use of general social class groupings, e.g., the heterogeneity of occupations within a single class leaves room for differing interpretations. The Whitehall study concentrates on one "industry" in which there is little heterogeneity within occupational grades and clear social divisions between grades (Marmot, Kogevinas and Elston, 1987).

An inverse association between grade (level) of employment and mortality from CHD and a range of other causes was observed (78). Men in the lowest grade (others = messengers, doorkeepers, etc.) had a three-fold higher mortality rate than men in the highest grade (administrators) (Marmot, Shipley and Rose, 1984).

Grade is also associated with other specific causes of death, whether or not the causes were related to smoking (Marmot, Kogevinas and Elston, 1987). While low status was associated with obesity, smoking, less leisure time physical activity, more baseline illness, higher blood pressure, and shorter height (78), controlling for all of these risk factors accounted for no more than 40% of the grade difference in CHD mortality (Marmot, Shipley and Rose, 1984; Marmot, Kogevinas and Elston, 1987). After controlling for standard risk factors, the lowest grade still had a relative risk of 2.1 for CHD mortality compared to the highest grade (Marmot, 1994).

One possible explanation of the remaining grade differences in CHD mortality is grade differences in job control and job support (Marmot, Kogevinas and Elston, 1987). In addition, blood pressure at work was associated with "job stress", including "lack of skill utilization", "tension", and "lack of clarity" in tasks. The rise in blood pressure from the lowest to the highest job stress score was much larger among low grade men than among upper grade men. Blood pressure at home, on the other hand, was not related to job stress level (78).

Thus, a second longitudinal study of British Civil Servants (Whitehall II) was initiated to investigate occupational and other social influences on health and disease (Marmot, 1994). The final sample was 6900 men and 3414 women aged 35-55 in the London offices of 20 civil service departments (Marmot et al., 1991). Employment grade was strongly associated with work control and varied work (measures of decision latitude) as well as fast pace (a measure of job demands) (Marmot et al., 1991; Marmot, 1994). Lack of control on the job is related to long spells of absence (> 6 days) (Marmot, 1994).

In addition, there was no decrease in the difference in prevalence of ischemia depending upon employment category over the 20 years separating Whitehall I and Whitehall II (Marmot et al., 1991). Plasma cholesterol concentrations did not differ by job category, and the small inverse association between job status and blood pressure in men was reduced from that seen in the Whitehall I study. There was a significant inverse relation between BMI and job status, but, especially in men, the differences were small. The risk factor that differed most between employment categories was smoking. Moderate or vigorous exercise was less common among subjects in lower status jobs (Marmot et al., 1991).

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