

Mortality among the unemployed differs greatly by the magnitude of workplace downsizing: a register-based follow-up study of Finnish men and women

Netta Mäki Phd
University of Helsinki

EXTENDED ABSTRACT

Unemployment is related to increased mortality. According to longitudinal studies the excess mortality among the unemployed varies from 1.2–1.3-fold in England and Wales (Moser et al. 1984) and 1.6–1.7 -fold in Denmark (Iversen et al. 1987) to even twofold in Finland (Martikainen 1990). Later it has been shown that the size of the excess mortality greatly depends on the phase of the economic cycle, e.g. in Finland excess mortality among the unemployed was over double compared to the employed during the economic expansion in the latter part of the 1980s, while it was only 30 per cent larger during the recession in the first part of the 1990s (Martikainen, Mäki & Jäntti 2007).

However, it is not fully established whether this association between unemployment and mortality results from selection into unemployment or from negative causations that unemployment has on health. Information on the extent of workplace downsizing of those employees who have been made redundant can be used to increase our understanding of the association, since downsizing and, especially, workplace closure results in unselective unemployment. A Swedish study (Eliason & Storrie 2009) showed that mortality was 44 per cent higher during the first four years among those who had been working in closed establishments. However, this excess mortality stemmed completely from external causes of death.

In this study, we analyze mortality among the unemployed by the magnitude of establishment downsizing, aka the workplace that has made them redundant. We do this in order to gain a fuller understanding of the relative contributions of selection and causation as explanations of excess mortality among the unemployed. The rationale of our study design is that the chances of being laid off when establishment staffing levels are drastically reduced, and especially when the establishment shuts down altogether, are unlikely to strongly depend on the characteristics of the employed individuals. Such naturally occurring ‘experiments’ provide a powerful study design when the random experimental allocation of subjects to exposure is impossible. A comparison of the ‘naturally’ exposed group - in this study those who became unemployed because of workplace downsizing - to an unexposed reference group closely resembles a controlled experiment. Under such conditions, inferences about causality are strong.

However, previous analyses of workplace closures have suffered from a lack of power in terms of mortality analysis. In order to overcome the limitations of previous studies on factory closure and downsizing, we used

register-based individual-level data on Finnish men and women, linked with data on the establishment level. We followed the individuals for establishment downsizing, experience of unemployment and mortality. The unique contribution of our study is in the use of establishment-level information on changing staffing levels. By comparing the mortality of those who became unemployed from strongly downsized establishments to those who became unemployed from more stable establishments, we were able to assess the importance of the selection effect as an explanation of the high excess mortality of the unemployed more effectively than previous studies.

Because of the data-protection regulations of Statistics Finland covering both individuals and workplaces, we did not have access to the total population, as this would have been a violation of the regulations of data provision. To obtain a data set that had sufficient power to analyse mortality, the research team designed a three-part sample of the target population, with over-sampling of deaths and those in strongly downsized workplaces: (1) a 50-percent random sample of people who had worked at a workplace between 1988 and 1994 and had died before the end of 2002; (2) a 20-percent random sample of workers whose workplace had reduced its workforce by at least one half between two adjacent years during the period 1988-1994; and (3) a 10-percent random sample of the whole population in the period 1988-1994. To obtain results that are representative for the population, we used sampling weights, constructed from the known sampling probabilities, in the analyses.

For the purposes of this study, we included those unemployed who were 35–64 years old in 1989 and 1994. The first study cohort – the 1989 cohort – included all of the sample participants who were alive on the 1st of January 1989, working in an establishment and aged 35-64 years. For this cohort, we measured unemployment and establishment downsizing for the year 1989, and followed mortality from the beginning of 1990 to the end of 1994. Similar data set was created for the 1994 cohort with mortality follow-up for the time period 1995–1999. These two datasets were then merged. Altogether 793 deaths were recorded among the unemployed. We used Cox regression model and adjusted for age, sex, education, time period as well as branch of industry.

Hazard ratio for mortality was 1.93-fold (95% CI 1.43–2.59) among those unemployed who had been working in secure establishments and 1.80-fold (95% CI 1.31-2.47) among those in moderately downsizing workplaces compared to those unemployed who had been working in severely downsizing workplaces or in establishments that had closed altogether. HRs were similar for diseases and for accidents and violent causes of death.

By showing that mortality among the unemployed is much smaller in the context of workplace downsizing or closure – when unemployment is unselective - this study suggests that the association between unemployment and mortality is largely non-causal by nature.