CORRESPONDENCE

A critical review of the effect of factory closures on health

Sir,—We read, with interest and dismay, the critical review by Morris and Cook, of the studies on factory closures and health (1991;48:1-8). The authors' statement that "none of the studies fulfil all the criteria for an ideal study..." is sanctimonious when their report itself is peppered with flaws.

By using Index Medicus from 1980 only as their reference source they give a foreshortened perspective. The study by Fisher in 1959, reported in 1965¹, and that by Ziegler in 1964, reported in 1979,² have been overlooked. The Michigan study (authors' references^{6,8,9}) is not, therefore, the "... earliest study reported..." although the field work was started in 1965 and not, as stated, in 1967.

In the Danish factory study (authors' reference¹⁰) there was, in fact, a control group although the investigator referred to it only in a later report.³ Neither do the authors register the unique feature of the Sardine factory study (authors' reference¹¹)—namely, that 81% of the study group were female employees.

When appraising the Calne study (authors' references¹⁸⁻²⁶) they continue to report inaccurately. We had data on our study group for four years before they could have had any suspicions of job losses (not two years as stated). The study group did have to tolerate, however, two years of insecure employment after the management "rationalised" the plant. In fact the authors seem to fail, repeatedly, to distinguish the phase between the announcement of redundancies and factory closure (often only a few weeks) from the preceding phase of insecure employment which, often in the face of denials by management, workers are able to sense when their employer is in financial difficulties. Both these periods need to be demarcated and contrasted with an even earlier phase of relatively secure employment, which can be the only true baseline in a longitudinal study.

In this light the authors' use of the terms "anticipatory" and "pre-closure" as in their table 2 seems obtuse and confusing.

Although we would have preferred it, the control employees in the Calne study did not all work at "... a similar factory..." and that we reported on spouses and children of employees seems to have been ignored.

We would, however, concur with the listed advantages and disadvantages of factory closure studies although advantage (3) is inadequately expressed. It is possible to recognise and incorporate several distinct phases in the process of job loss as it affects individual workers: (a) that of secure employment in a stable, successful, enterprise; (b) that of insecure employment in a failing industry—a study phase of paramount importance; (c) that between formal announcement of mass redundancy and plant closure; (d) that of actual unemployment; (e) that of continued unemployment or of reemployment (secure or insecure).

That these serial events are each uniquely important in longitudinal research of this nature is now acknowledged and features in study designs.^{5,6}

Perhaps, at a time of deepening economic recession in the United Kingdom we could expect that the authors, as professional academics, turn to gamekeeping rather than poaching and perform the large scale factory closure study to which they allude in such idealistic terms. At the very least they owe those, some only amateurs, who have given them the data they dissect, the duty of reporting their studies accurately.

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- 1 Fisher A. Psychiatric follow-up of long-term industrial employees subsequent to plant closure. *International Journal of Neuropsychiatry* 1965;11:267-74.
- 2 Ziegler H. Sante et licenciement collectif (Health and mass lay-off of workers). *Prevenir* 1979;1:44-53.
- 3 Jacobsen K. Arbejdsloshed og afsked som sygdomsfremkaldende faktorer (unemployment and dismissal as disease-producing factors). *Ugeskr Laeger* 1974;136:1650-2.
- 4 Beale N, Nethercott S. Job-loss and family morbidity: a study of a factory closure. *J R Coll Gen Pract* 1985; 35:510-4.
- 5 Iversen L, Damsgaard M, Sabroe S. Hospital admissions before and after a

shipyard closure with special reference to cardiovascular diseases. *BMJ* 1989;299:1073-6.

- 6 Mattiasson I, Lindgarde F, Nilsson J, Theorell T. Threat of unemployment and cardiovascular risk factors: longitudinal study of quality of sleep and serum cholesterol concentrations in men threatened with redundancy. *Br Med J* 1990;301:461-6.

Authors' reply

We did not intend our conclusions to sound sanctimonious, and we are fully aware of the major difficulties involved in carrying out factory closure studies. The perfect study is unapproachable but this should not blind us to the qualifications that need to be placed on the conclusions of those studies that have been reported. Without such critical evaluation, studies carried out in the current recession are likely to have the same deficiencies.

We thank Beale and Nethercott for pointing out some errors in our review, but would stand by our conclusions. In table 1, the study population of the Sardine factory (Norbest Canning Co) should have been 72 women and 13 men, rather than 72 men and 13 women. In the Calne study it was incorrectly stated that data were collected for only two years before any knowledge about the closure, instead of four years. The control group should have been described as coming from several other local firms. We did attempt to distinguish between data collected at a time when jobs were relatively secure and data collected at a time when there was awareness of the possibility of the factory closure being decided. Finally, in carrying out the review it was our intention to focus on the effects of the last recession and that was the reason for reviewing studies published since 1980. Fortuitously this criterion allowed us to include the Michigan study, which was the forerunner of all the other studies reviewed.

Asbestos and cancer: history and public policy

Sir,—The issues discussed by Castleman (1991;48:427-432) indicate that many problems associated with asbestos dust were known before industrialists responded. Lung cancer and mesothelioma should be put in the context of knowledge of overall risk.

Despite the excellent points made