

The nature of unemployment morbidity.

2. Description

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SUMMARY. *A longitudinal, controlled study on job loss and health using general practice records has concluded that unemployment morbidity among men made redundant can be identified as an increase in those episodes of illness which are associated with many consultations. The possibility that these episodes represent chronic ill health has been tested using the same data base. If chronic illnesses are defined as those requiring active management after one year, their incidence among unemployed men was over six times that among controls ($P < 0.001$). Cardiovascular disorders were frequently detected in the unemployed men and several of the other chronic complaints they suffered may also have had a psychosomatic aetiology related to stress. The consequent workload in terms of consultations, investigations, referrals, outpatient attendances and drug therapy increased significantly after job loss. More frequent, short-lived illnesses showed continuing downward trends in study and control men.*

The results suggest that unskilled men face a serious health hazard if made redundant. Investigating and treating their chronic disabilities leads to an increased medical workload and must further burden the health service.

Introduction

IN an accompanying paper¹ a measure of the number of consultations per illness episode was used to decipher the complex patterns obtained when morbidity data were analysed by diagnosis in relation to secure, insecure and lost employment. The study men, having lost their jobs, attended their general practitioners significantly more often for episodes of illness requiring four or more consultations than when they were in secure employment.

Although the distinction between a common, short-lived illness which results in few consultations and an infrequent, protracted disease resulting in many consultations is familiar, there seems to be no differential definition of 'acute' and 'chronic' which incorporates an accepted time limit. However, adopting a definition of these terms permits a reanalysis of the earlier data¹ to determine whether job loss leads to greater chronic ill health in male industrial employees.

Method

Of 302 workers made redundant when a meat products factory closed in July 1982, 122 had been patients at Calne Health Centre since July 1976 and were still patients in July 1986. This group, with their immediate relatives, formed the study population. The general practice records of these patients covered a 10-year period (denoted as years 1 to 10) comprising four years of secure

employment (years 1–4), two years of insecure employment (years 5 and 6) and four years after redundancy (years 7–10) when new jobs were obtained by some.² Further details of the study population and study period are contained in a previous paper.^{1,3} An analogous group of men who remained in stable employment in other local industries served as a control cohort.

The episodes of illness presented in each of the study years by all the male employees and their control counterparts were classified using the following definitions: (1) chronic — an episode still requiring active medical management more than one year after presentation (at least one consultation during the year in question); (2) acute — an episode fully resolved or inactive within one year of presentation; (3) indeterminate — an episode not falling clearly into either category.

In order to establish the consequent medical workload the following parameters were determined for each acute or chronic episode: the numbers of consultations with general practitioners; clinical investigations — laboratory and radiological procedures; referrals to specialists; outpatient attendances; and days of therapy for each drug prescribed.

Statistical testing

The chi-square test and, where there were sufficient individual data, both the Wilcoxon signed rank test and the Mann–Whitney U test² were used to test for significant differences between the three time periods in the numbers of acute and chronic episodes of illness and for significant differences in the measures of workload. Fisher's exact test was used to test for significant differences in the incidence of chronic diseases.

Results

The 76 Harris male employees had a median age at 1 July 1982 of 41 years (interquartile range 37–53 years) and a median job tenure of 15 years (10–23 years) while the 69 control men had a median age of 40 years (33–49 years) and a median job tenure of 13 years (10–17 years). Not all the Harris men remained unemployed and on average they worked for 19 of the 48 months after redundancy. Very few episodes of illness were classified as indeterminate in length and the highest proportion in either group in any year was 4.0%.

The two groups reported acute illnesses at similar rates (Table 1). The downward trends in prevalence (effectively equal to incidence for acute illnesses) were parallel and appeared to be unaffected by job loss among the Harris male employees.

There were, however, large differences in the rates of chronic disease, the Harris men suffering significantly more episodes when threatened with, and after redundancy (Table 1). In the four years when jobs were secure for all employees six Harris men developed six chronic diseases while eight control men developed eight diseases. In the two years when jobs were insecure for Harris employees five Harris men developed six chronic diseases while three control men developed three diseases. In the four years after job loss 14 Harris men developed 19 chronic diseases compared with three control men ($P < 0.01$) who developed three diseases ($P < 0.001$) (Table 2).

The medical workload arising from acute episodes of illness remained steady over the three periods but for chronic diseases the workload increased significantly in all categories among Harris male employees (Table 3).

Table 1. Mean prevalence rates for acute and chronic episodes of illness among the 76 Harris male employees and 69 male control employees.

| | Mean no. of episodes per 100 patients per year | | | Percentage change | |
|-------------------------|--|---------------|------------|--------------------------|-----------------------|
| | Years 1-4 | Years 5 and 6 | Years 7-10 | Years 5 and 6 versus 1-4 | Years 7-10 versus 1-4 |
| <i>Acute episodes</i> | | | | | |
| Harris employees | 97 | 92 | 81 | - 5 | - 16 |
| Control employees | 117 | 93 | 76 | - 21 | - 35 ^a |
| <i>Chronic episodes</i> | | | | | |
| Harris employees | 9.2 | 18.4 | 24.7 | + 100 ^b | + 168 ^c |
| Control employees | 14.9 | 18.8 | 17.4 | + 26 | + 17 |

^a $P < 0.01$, Wilcoxon signed rank test, Mann-Whitney U test. ^b $P < 0.05$, chi-square test. ^c $P < 0.05$, chi-square test, Mann-Whitney U test; $P < 0.01$, Wilcoxon signed rank test.

Discussion

In an accompanying paper¹ it is claimed that ill health relating to unemployment can be recognized in redundant men. We have now attempted to give a description of that morbidity in terms of pathological entities.

Our detailed study of unemployment and health, based in general practice, would appear to overcome some of the methodological flaws frequently found in this field of research. In particular it fulfils all the criteria recently recommended by Wagstaff⁴ for longitudinal studies on unemployment and health. Although a longitudinal study is theoretically attractive,

it is difficult to obtain an adequate sample. It can, however, result in meaningful conclusions even if the numbers are restricted, as they are here.

Our earlier, numerical analyses of unemployment morbidity^{2,3,5-8} suggested that men, especially those over 40 years of age, were the 'at risk' group. This is now seen to be the result of chronic diseases appearing in these patients after redundancy — even if they soon find another job. However, this conclusion was not possible until the chronic problems had been distinguished from the more common, acute illnesses and analysed separately. Obviously, type of morbidity must be added to the list of factors² to be defined precisely in studies of this kind.

It seems that no single diagnosis presents as unemployment morbidity but, rather, a series of chronic diseases whose appearance in susceptible subjects may occur up to six years after redundancy was first threatened. Although there is some chronic psychiatric disease among the sample of unemployed men, the most frequent disorders are cardiovascular — sustained hypertension and myocardial ischaemia (including one fatality). Other recent reports^{9,10} have also argued that hypertension and atherosclerosis can result from psychosocial stress. This is particularly alarming when other workers have described increased cigarette smoking¹¹⁻¹³ and decreased physical activity^{13,14} among the long-term unemployed. The bowel disorders among the study sample may also have a stress-induced aetiology.

The increase in workload resulting from the chronic problems of the study men affects both primary and secondary care. By the end of the study the ex-Harris men were seeing their general practitioners more often for major diseases than for supposedly more common, acute problems and attending outpatient hospital sessions four times more frequently than controls. This has obvious fiscal implications and suggests that the provision

Table 2. Chronic diseases incident among 76 Harris male employees and 69 control male employees in years 7-10 (July 1982-June 1986).

| Patient (age at presentation in years) | Diagnosis | Date of presentation | No. of months work after redundancy |
|--|--|----------------------|-------------------------------------|
| <i>Harris employees</i> | | | |
| A (55) | Bronchial asthma | August 1982 | 0 |
| (56) | Extensive macular haemorrhage, central scotoma | January 1984 | |
| (57) | Nasal polyposis | July 1984 | |
| B (46) | Alcoholism — attempted suicide (twice) | October 1982 | 6 |
| C (60) | Diabetes mellitus type 2 | January 1983 | 0 |
| D (39) | Sustained hypertension | February 1983 | 48 |
| E (28) | Irritable bowel syndrome | April 1983 | 38 |
| (30) | Depression with anxiety | September 1985 | |
| F (54) | Traumatic arthropathy (knee) | November 1983 | 0 |
| G (56) | Myocardial infarct, subsequent angina pectoris | February 1984 | 0 |
| (56) | Oesophagitis | June 1984 | |
| (58) | Ulcerative colitis | November 1985 | |
| H (54) | Anxiety state, anxiolytic dependency | August 1984 | 21 |
| I (49) | Prolapsed lumbar intervertebral disc | December 1984 | 25 |
| J (61) | Sustained hypertension | May 1985 | 42 |
| K (52) | Sustained hypertension | September 1985 | 42 |
| L (59) | Bronchopneumonia, bullous cavitation | February 1986 | 41 |
| M (41) | Sustained hypertension | February 1986 | 0 |
| N (51) | Sudden death — extensive myocardial infarct at post-mortem | April 1986 | 0 |
| <i>Control employees</i> | | | |
| A (45) | Head injury sequelae | September 1983 | — |
| B (59) | Diabetes mellitus type 2 | February 1984 | — |
| C (38) | Anxiety state | May 1984 | — |

Table 3. Medical workload arising from episodes of acute and chronic episodes of illness among the 76 Harris male employees and the 69 control male employees.

| | Harris employees | | | Control employees | | |
|---|------------------|---------------|-------------|-------------------|---------------|------------|
| | Years 1-4 | Years 5 and 6 | Years 7-10 | Years 1-4 | Years 5 and 6 | Years 7-10 |
| <i>Acute episodes</i> | | | | | | |
| No. of consultations per 100 patients per year | 170.4 | 168.4 | 120.7 | 186.5 | 141.3 | 120.3 |
| No. of investigations per 100 patients per year | 30.0 | 32.9 | 31.2 | 34.0 | 32.6 | 23.2 |
| No. of referrals per 100 patients per year | 8.9 | 9.9 | 9.5 | 9.4 | 10.1 | 6.5 |
| No. of outpatient attendances per 100 patients per year | 11.2 | 14.5 | 14.5 | 11.2 | 18.1 | 10.5 |
| No. of days of drug therapy per patient per year | 10.7 | 9.1 | 10.5 | 12.8 | 7.9 | 8.7 |
| <i>Chronic episodes</i> | | | | | | |
| No. of consultations per 100 patients per year | 23.4 | 78.3***† | 129.3***††† | 49.6 | 55.1 | 56.2 |
| No. of investigations per 100 patients per year | 7.2 | 14.5 | 33.2***† | 13.4 | 7.2 | 5.4 |
| No. of referrals per 100 patients per year | 1.6 | 5.3 | 7.9* | 5.8 | 5.1 | 4.7 |
| No. of outpatient attendances per 100 patients per year | 4.9 | 10.5 | 26.6*** | 13.0 | 4.3* | 6.2 |
| No. of days of drug therapy per patient per year | 7.5 | 25.9 | 58.9††† | 21.7 | 32.9 | 50.4†† |

For years 5 and 6 or 7-10 versus years 1-4: *** $P < 0.001$, ** $P < 0.01$, * $P < 0.05$, chi-square test; ††† $P < 0.001$, †† $P < 0.01$, † $P < 0.05$, Wilcoxon signed rank test.

of health services needs to be enhanced in areas of high unemployment.

Helping patients to adjust to major life changes, such as redundancy, may be the only means of preventing the onset of such intractable diseases. Doctors, especially, must try to imagine the enforced inactivity and demoralizing boredom which is the lot of increasing numbers of patients and invoke the therapeutic effects of awareness and sympathy even if they cannot 'prescribe' a job. The resultant pathology should interest us as much as that relating to poor diet or exposure to carcinogens or to the human immunodeficiency virus. Perhaps all those fortunate enough to have secure jobs should ponder the future of work; technological advances threaten full employment for most of us.^{15,16}

Studies of unemployment and health in the 1930s examined both somatic illnesses in those out of work^{17,18} and also the psychological consequences of redundancy.^{19,20} Few reports were published when the problem of unemployment virtually disappeared during and after the Second World War. There is now a resurgent interest in the debate about unemployment and health but the most active participants have been psychologists and sociologists. We hope that this study from general practice makes a useful contribution.

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