

# Job-loss and morbidity: the influence of job-tenure and previous work history

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**SUMMARY.** *As part of a longitudinal study on the consequences of job-loss on health the modifying influence of job-tenure on a group of factory workers made redundant when a meat products factory closed was examined. The older workers, both men and women, were divided into two groups which were comparable in all respects except for job-tenure. Statistically significant differences in morbidity were found when comparing the two groups of male employees and their families.*

*However, the men with longer job-tenure (mean 30 years) had, with few exceptions, served the company since leaving school. All of the other men (mean job-tenure 11 years) had previously worked elsewhere or been unemployed. The uptake of medical services before and after factory closure was therefore compared in two groups of workers and their families. One group who had previous experience of the job market showed a significant rise in morbidity only during the unsettling three years before factory closure. The other group, whose working lives had been spent wholly with the company, showed only a slight anticipatory effect but then demonstrated statistically significant increases in consultation rates after job-loss. Three years later they still showed no signs of adapting to their situation.*

*The results suggest that previous experience of having no job or of having to change jobs may be just as influential as job tenure on the outcome of health before and after compulsory redundancy.*

## Introduction

**I**NDUSTRIAL employees are no longer required to work 12 hours per day for six days a week as they were at the beginning of the industrial revolution. Nevertheless, the 40-hour week means that over a third of an employee's waking hours can be spent operating or servicing machinery and being in the same spot in the same building for many years. The familiarity of the surroundings and the oppressive monotony of the tasks may cause boredom but, if tolerated at all, eventually give rise to feelings of security. It therefore seems clear that when a group of industrial workers are made redundant, those who have held their jobs longest will suffer most from the abrupt change in their lives. This axiom is often mentioned by investigators though usually only as a characteristic for which they have controlled.<sup>1-4</sup>

In practice it is difficult to isolate the factor of job-tenure. Long-standing employees tend to have more stable home lives, more loyalty to and trust in their employers and stronger job-attachment. They will have earned more respect from their colleagues and will be older. The circumstances of a factory closure in a small town in north Wiltshire have been described.<sup>5</sup> The

effect of job-insecurity and job-loss on the health of the employees and their families was found to be concentrated among the older cohorts.<sup>6</sup> This paper reports the effect of job-loss on the health of workers differentiated by length of service and occupational biography.

## Method

The remaining 302 productive and clerical employees in the meat products factory of C. and T. Harris (Calne) Ltd were made redundant in June/July 1982 when the factory closed. There had been a clear threat of this after earlier mass redundancies in June 1979 and March 1980.

Of this residual workforce 133 employees (men aged 60 years and less and women aged 55 years or less) were registered as patients in the author's practice and had been full-time workers in the factory for at least six years prior to losing their jobs in 1982. Of these employees 128 remained registered with the practice for a further three years.

Consultations, episodes of illness and referrals to and attendances at hospital outpatient departments were monitored as the indices of morbidity. Each of these features was recorded for each employee and for his/her dependent relatives (spouses and children under 16 years of age) for six years from 1 July 1976 until 30 June 1982 when the factory closed and for the next three years ending on 30 June 1985. The nine years of the study period were denoted as years one to nine. Comparison with control families as in previous studies<sup>5,6</sup> was not possible since there were insufficient control employees to match the long-term Harris employees with respect to job-tenure. Data were obtained exclusively from practice records. Full details of the study method are given in a previous paper.<sup>5</sup>

## Differentiation by age and job-tenure

The older male and female employees (men aged 41–60 years and women aged 36–55 years) were divided into two cohorts — those who had worked continuously in the factory for more than the median number of years for their group and those who had been employed continuously for less than the median number of years for their group.

## Differentiation by previous work history

From the original study group of 128 employees two further groups were identified — those who had spent their whole working lives with Harris, and in July 1982 were unemployed for the first time, and those who had previously worked elsewhere or been unemployed. Married women were omitted from both of these groups since their social situation would have allowed them to opt out of the job market at any time.

## Statistical testing

The Mann-Whitney U-test was used to analyse the data for consultations and episodes and the Wilcoxon signed rank test to analyse the data on visits to hospital outpatient departments.

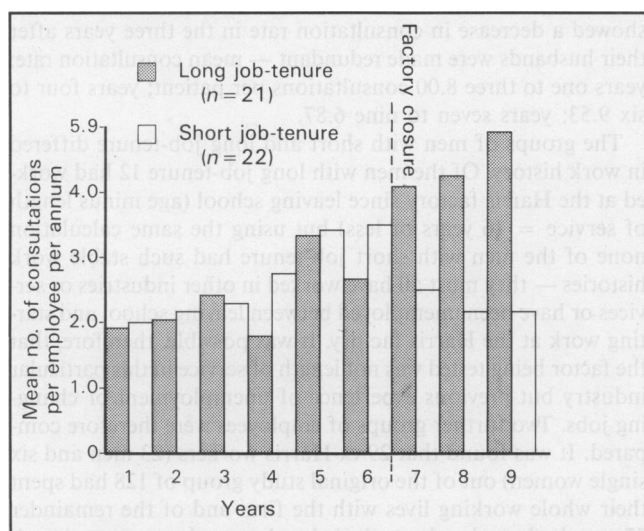
## Results

The characteristics of the older study groups with long and short job-tenure are shown in Table 1. There were no significant differences in the mean ages of those with long and short job-

**Table 1.** Characteristics of male employees aged 41–60 years and female employees aged 36–55 years.

Job tenure	Mean age (±SD) (years)	No. married	No. with dependent children	No. of high consulters <sup>a</sup>	Mean job-tenure (±SD) (years)
<i>Male employees</i>					
Long (n = 21)	50.5 (±5.9)	18	11	8	29.8 (±7.1)
Short (n = 22)	52.5 (±5.7)	19	11	9	10.6 (±3.4)
<i>Female employees</i>					
Long (n = 17)	48.4 (±4.8)	9	1	6	21.0 (±7.7)
Short (n = 17)	45.4 (±5.5)	14	13	6	10.2 (±2.1)

SD = standard deviation.<sup>a</sup> High consulters were employees who consulted at more than the mean rate for his/her peers in the first four years of the study period (ref. 6).



**Figure 1.** The mean number of consultations per annum for male employees aged 41–60 years with long and short job-tenure.

tenure. The two groups of men consulted at different rates after job-loss (Figure 1). The men with long job-tenure consulted, on average 13.1 times in the three years after job-loss whereas the men with short job-tenure consulted only 6.9 times during the same period, a difference which was significant ( $P < 0.05$ ). The two groups of women showed no such disparity.

To test the hypothesis that previous indices of morbidity change after job-loss the consultation rates in years one to six (aggregated) were compared with the consultation rates in years seven to nine (aggregated) for both groups of men. The consultation rates for the men with long job-tenure were significantly higher ( $P < 0.05$ ) after job-loss but there was no significant difference for the men with short job-tenure. Unexpectedly, the latter showed an increase in consultation rates in the period before closure of the factory but immediately after job-loss returned to their former rates of consulting (Figure 1). The mean consultation rate in years five and six (aggregated) was significantly greater than the mean rate in years one to four (aggregated) ( $P < 0.05$ ) and years seven to nine (aggregated) ( $P < 0.05$ ) for this group but the mean rate in years one to four was not significantly different from the rate in years seven to nine.

A large increase in consultation rate was observed between years three and four for the men with short job-tenure (Figure 1). The mean consultation rate in years four to six (aggregated) was significantly greater than the mean rate in years one to three (aggregated) ( $P < 0.05$ ) and years seven to nine (aggregated) ( $P < 0.05$ ) for this group but the mean rate in years one to three was not significantly different from the rate in years seven to nine.

It can therefore be concluded at this stage that the men with short job-tenure began to feel insecure from the time of the very earliest set-backs in the company in the summer of 1979.<sup>5</sup>

The similar consultation rates in the two groups of men prior to 1979 (years one to three) can also be seen in Figure 1. Therefore, in order to compare the two groups directly, all the data were subsequently analysed over the three triennial periods

**Table 2.** The influence of job-tenure on the number of consultations, episodes of illness and referrals to and attendances at hospital outpatient departments: comparison between years 1–3 (jobs secure), years 4–6 (jobs insecure) and years 7–9 (jobs lost).

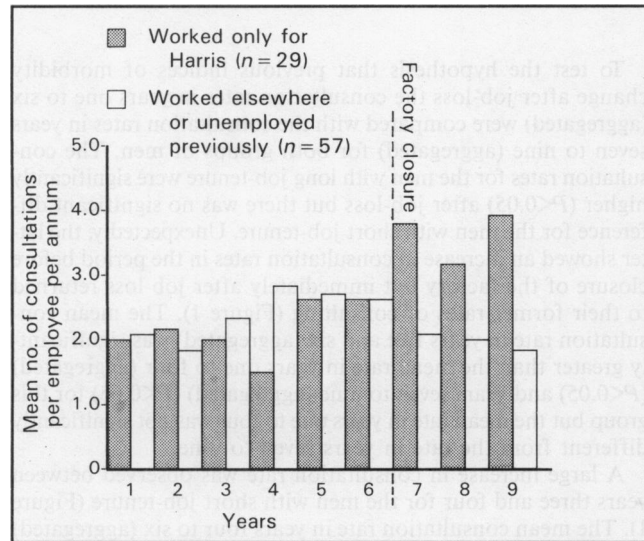
	Years			% change		
	1–3	4–6	7–9	Years 4–6 vs. 1–3	Years 7–9 vs. 4–6	Years 7–9 vs. 1–3
<i>Long job-tenure male employees (n = 21)</i>						
Mean no. of consultations per employee over 3 years	6.4	7.8	13.1	+22.4	+67.6	+105.0*
Mean no. of episodes per employee over 3 years	3.5	3.3	4.1	-5.4	+21.6	+15.1
Mean no. of referrals per 100 employees over 3 years	42.8	57.1	80.9	+33.0 <sup>a</sup>	+41.7 <sup>a</sup>	+89.0 <sup>a</sup>
Mean no. of attendances per 100 employees over 3 years	71.4	90.5	219.1	+26.7 <sup>a</sup>	+142.0 <sup>a</sup>	+207.0 <sup>a</sup>
<i>Short job-tenure male employees (n = 22)</i>						
Mean no. of consultations per employee over 3 years	6.4	9.8	6.9	+51.5*	-29.3*	+7.1
Mean no. of episodes per employee over 3 years	4.0	4.2	3.8	+5.7	-9.7	-4.5
Mean no. of referrals per 100 employees over 3 years	31.8	45.4	18.2	+42.8 <sup>a</sup>	-60.0 <sup>a</sup>	-42.9 <sup>a</sup>
Mean no. of attendances per 100 employees over 3 years	40.9	95.5	72.7	+133.0 <sup>a</sup>	-23.8 <sup>a</sup>	+77.8 <sup>a</sup>

\* $P < 0.05$ . <sup>a</sup>Not statistically tested.

**Table 3.** Characteristics of employees who have spent all their working lives at the Harris factory and of those who have previously worked elsewhere or been unemployed.

	Mean age (±SD) (years)	No. married	No. with dependent children	No. of high consulters <sup>a</sup>	Mean job-tenure (±SD) (years)
Worked only for Harris (n = 29)	40.4 (±10.7)	22	15	8	25.2 (±10.8)
Worked elsewhere or unemployed previously (n = 57)	45.3 (±9.3)	49	53	27	13.5 (±6.2)

SD = standard deviation. <sup>a</sup>High consulters were employees who consulted at more than the mean rate for his/her peers in the first four years of the study period (ref. 6).



**Figure 2.** The mean number of consultations per annum for employees who have worked only for Harris and for those who have previously worked elsewhere or been unemployed.

— when the jobs were secure (years one to three), when jobs were insecure (years four to six) and after jobs were lost (years seven to nine). The results of the statistical analysis are shown in Table 2. It was also found that the families of the 21 men with long job-tenure (n=48 members) showed a significant increase (P<0.05) in consultation rates during years seven to nine

(mean 9.53 consultations per family per annum) compared with years one to three (mean 6.77). However, the wives of these men showed a decrease in consultation rate in the three years after their husbands were made redundant — mean consultation rate: years one to three 8.00 consultations per patient; years four to six 9.53; years seven to nine 6.87.

The groups of men with short and long job-tenure differed in work history. Of the men with long job-tenure 12 had worked at the Harris factory since leaving school (age minus length of service = 16 years or less) but using the same calculation none of the men with short job-tenure had such stable work histories — they must all have worked in other industries or services or have been unemployed between leaving school and starting work at the Harris factory. It was possible, therefore, that the factor being tested was not length of service in this particular industry but previous experience of unemployment or changing jobs. Two further groups of employees were therefore compared. It was found that 29 ex-Harris workers (23 men and six single women) out of the original study group of 128 had spent their whole working lives with the firm and of the remainder 57 men had previously worked elsewhere or been unemployed. The characteristics of these two groups are compared in Table 3 and their consultation rates shown in Figure 2. The results of the statistical analysis are given in Table 4.

**Discussion**

It is said that battle-hardened troops sense the presence of the enemy as quickly as any general. When compared with raw recruits they suffer more torment on the eve of battle but, in

**Table 4.** The influence of work history on the number of consultations, episodes of illness and referrals to and attendances at hospital outpatient departments: comparison between years 1–3 (jobs secure), years 4–6 (jobs insecure) and years 7–9 (jobs lost).

	Years			% change		
	1–3	4–6	7–9	Years 4–6 vs. 1–3	Years 7–9 vs. 4–6	Years 7–9 vs. 1–3
<i>Worked only for Harris (n = 29)</i>						
Mean no. of consultations per employee over 3 years	6.2	6.7	10.9	+8.2	+62.2	+75.7*
Mean no. of episodes per employee over 3 years	3.3	3.5	3.9	+3.3	+13.0	+16.8
Mean no. of referrals per 100 employees over 3 years	13.8	41.4	55.2	+200.0 <sup>a</sup>	+33.3 <sup>a</sup>	+300.0 <sup>a</sup>
Mean no. of attendances per 100 employees over 3 years	17.2	65.5	158.6	+281.0 <sup>a</sup>	+142.0 <sup>a</sup>	+822.0 <sup>a</sup>
<i>Worked elsewhere or unemployed previously (n = 57)</i>						
Mean no. of consultations per employee over 3 years	6.2	8.1	5.8	+30.4	-28.0*	-6.1
Mean no. of episodes per employee over 3 years	3.5	3.6	3.2	+4.6	-11.6*	-7.5
Mean no. of referrals per 100 employees over 3 years	36.8	49.1	29.8	+33.4	-39.3	-19.0
Mean no. of attendances per 100 employees over 3 years	63.1	101.8	75.5	+61.3	-25.8	+19.6

\*P<0.05. <sup>a</sup>Not statistically tested.

the event, perform better, adapting to conditions more easily and suffering fewer casualties.<sup>7</sup> Perhaps a military analogy is too dramatic but the findings presented here suggest that it is at least apposite. Those men having previous experience of changing jobs or unemployment have more sensitive antennae and during an insecure phase at work they make more use of health services than in an earlier period but then adapt quickly to redundancy. Their counterparts, who have spent their whole working lives with one firm, show a significant increase in morbidity only after losing their jobs and, after three years, their health is still deteriorating.

In previous articles<sup>5,6,8</sup> the original intention had been to compare six years before factory closure with two years after. Ultimately the first four years of the study period were compared with the second four years as there had been an abrupt change in morbidity not at the time of factory closure but at the time of an earlier mass redundancy at the end of year four for all previous groupings (by sex, age and previous morbidity). In this study, however, the apparent changes in morbidity, particularly in the group who had previously worked elsewhere or been unemployed, occurred after year three of the study. It was, in fact, at that time that the first rumours that the firm might be in difficulty were reinforced. The company had spent £300 000 refurbishing the abattoir<sup>5</sup> and then, three weeks after it reopened, it was closed down and 79 slaughtermen and skilled butchers were fired. For the study group acquainted with having to find new work, this sort of event seems immediately stressful. This group of industrial employees showed a significant increase in morbidity during, and only during, a period of anxiety prior to job-loss. Their behaviour dispels the theory that the unemployed make more use of health services only because they have free time at their disposal.<sup>9,10</sup>

Critics might say the term 'short job-tenure' has been misused when this group had, in fact, worked in their jobs on average for over 10 years. Indeed it might be that workers who had been in their posts for only five years and suffered the same vicissitudes of a declining industry would have demonstrated even more significant changes. Moreover, the experience of the job-market of the group who had previously changed jobs or suffered unemployment would have been in the early 1970s when unemployment was only a third of present rates. Therefore, the results of this study may be an underestimate of the global experience.

Once again there is a gender difference: the female employees show no consistent changes in morbidity and seem better able to adapt than their male colleagues. The obvious explanation — that women turn to their other, traditional roles as mothers and housewives — is easy to accept. It is more difficult to explain why the wives of the men with long job-tenure show morbidity trends opposite to their husbands. Fagin and Little<sup>11</sup> have also noted that the wives of unemployed men present fewer symptoms when they realize that their husbands' unemployment is likely to be permanent. They propose that the 'sick-role serves to convey unexpressed conflict in the wives, especially the feeling of being taken for granted'. It seems that when their partners become unemployed, the wives receive a boost to their self-esteem.

It has often been suggested that the impact of stress on health might be buffered by the differing psychological resources of different individuals. One specific psychological resource is the 'locus of control belief'<sup>12</sup> — the extent to which people think that events in their lives are under their own control ('internals') or are determined by forces beyond their power ('externals'). However, the prevailing view that externals cope less ably with stress<sup>13</sup> is not supported by our results if it is accepted that the group who had previously worked elsewhere or been unemployed

represent the externals.

Many people in the dole queue will confirm the adage 'last hired, first fired'. Those Harris employees with the longest job-tenure might well have felt that their positions were guaranteed, even if only in a streamlined company having a smaller workforce. Their counterparts with shorter job-tenure seem to suffer no such illusions, having lost jobs, for whatever reasons, before. Whatever the details and possible explanations, these findings once again prove that different individuals, when subjected to the trauma of job-loss — actual or threatened — suffer different degrees of stress at different times. This study provides a further example of groups whose changes in morbidity would cancel out if they were not carefully differentiated and examined over a sufficiently long time span. Indeed, the outcome of research could be otherwise falsely reassuring for those controlling the nation's economy.

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