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Work disability following major organisational change: the Whitehall II study

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Abstract

Background

Privatisation and private sector practices have been increasingly applied to the public sector in many industrialised countries. Over the same period, long-term work disability has risen substantially. We examined whether a major organizational change - the transfer of public sector work to executive agencies run on private sector lines - was associated with an increased risk of work disability.

Methods

The study uses self-reported data from the prospective Whitehall II cohort study. Associations between transfer to an executive agency assessed at baseline (1991–1994) and work disability ascertained over a period of approximately 8 years at three follow-up surveys (1995–1996, 1997–1999, 2001) were examined using Cox proportional hazard models.

Results

In age- and sex-adjusted models, risk of work disability was higher among the 1263 employees who were transferred to an executive agency assessed at baseline (1991–1994) and work disability ascertained over a period of approximately 8 years at three follow-up surveys (1995–1996, 1997–1999, 2001) were examined using Cox proportional hazard models.

Conclusions

Increased work disability was observed among employees exposed to the transfer of public sector work to executive agencies run on private sector lines. This may highlight an unintentional cost for employees, employers and society.

Over the past three decades, increases in long-term work disability have been seen in many industrialised countries.1 –4 Over the same period there were substantial changes in the labour market, with widespread downsizing, outsourcing, mergers, and job insecurity; results of the quest for efficiency. In the public sector these changes have taken the form of privatisation of services or the implementation of private sector practices. In the United Kingdom privatisation of the public utilities, which commenced in 1984, was followed by the “Next Steps” programme, through which the executive functions of government were transferred to executive agencies. These agencies are run on private sector lines and periodically have to bid for their own work through competitive tender.5,6 Few studies have been able to conduct a methodologically rigorous analysis of the associations between major organizational changes in the public sector and health outcomes. The Whitehall II study of civil servants originally designed to take advantage of the stability of jobs in the British Civil Service provided an opportunity to observe work disability associated with major organizational changes. Screening on recruitment to the Whitehall II study (1985–88) was complete before the gradual implementation of “Next Steps” commenced and thus provides data on health not only prior to the change itself but also prior to widespread rumour of change. Existing work using

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these data has shown major organizational change to be associated with poor self-reported health and greater increases in blood pressure and weight for employees transferred to executive agencies compared to those who remained in the Civil Service, and the health effects were seen even during the anticipating phase of change.7 This and other earlier work on the association between major organizational change, such as outsourcing and mergers, and impaired health of employees,8 suggests that the association may also be found for work disability, that is, being unable to work because of illness or injury.

The present analyses focus on the question of major organizational change in Whitehall II. By using data collected across a number of phases and continued follow-up, we aimed to examine whether transfer to an executive agency is associated with long-term work disability-over a period of 10 years at maximum, as it was previously shown to be the latent period to observe plausible health effects for psychosocial factors at work.9

METHOD

Participants

The target population for Whitehall II was all London-based office staff aged 35–55 working in 20 civil service departments. Baseline screening (Phase 1, 1985–1988) involved a medical examination and a self administered questionnaire.10 With a response rate of 73%, the baseline cohort consisted of 10 308 participants (6895 men and 3413 women), covering a wide range of white-collar employment grades. Since Phase 1 there have been seven further data collection phases. The University College London ethics committee reviewed and approved the study, and written informed consent was obtained from each participant.

Major organizational change

A question on transfer to an executive agency was included at Phase 3 (1991–1994, n=8637), the baseline for our analysis. The statement “change of your department into an agency” was followed by the options: (1) has happened, (2) is planned, (3) not certain what will happen, and (4) is not planned. At phase 3, 7148 were still employed in the Civil Service, including executive agency, and 5259 participants selected options 1 or 4. Participants who selected options 2 or 3 (n=1889), those with missing data for any of the baseline variables collected at phase 3 (n=172) and those who had taken voluntary early retirement or had missing data on outcome (n=405) were excluded. Thus, the analytic sample comprised 4682 participants aged 39 to 62 years.

Work disability

Data on work disability were collected over a period of approximately 7.7 years (S.D. 2.0, range 2.0–10.1) via surveys at phase 4 (1995–1996), phase 5 (1997–1999), and phase 6 (2001). We considered cases of work disability to be those participants who retired from the Civil Service due to health reasons or left the Civil Service and subsequently classified themselves as longterm sick. Participants who were in the labour force (working, job-seeking, training etc.), and those who had retired at age 60 (mandatory retirement age in the Civil Service) formed the comparison group.

Covariates

Baseline covariates measured at Phase 3 included socio-demographic characteristics (age, sex, marital status [married/cohabited/not], and occupational grade11), measures of health status (suboptimal self-rated health [yes/no], pre-existing CHD, elevated blood pressure [systolic/diastolic≥140/90 mm Hg]12), psychological distress13 measured as General Health Questionnaire (GHQ-30)14 caseness, overweight [≥25 kg/m²]15), and health behaviours (smoking and alcohol use). Survey data on unemployment periods (yes/no) were available at phases 5 and 6 but not at phase 4. In this variable, those with missing data were classified as “missing”.

Statistical analysis

Chi-squared statistics were used to compare the baseline characteristics of employees who were transferred to an executive agency with those who were not. The start of the follow-up was the date of Phase 3 screening and the end date was either the date of the phase where work disability was first reported or the date of the last phase where non-case status was confirmed. Cox proportional hazard models were used to estimate the association between transfer to an executive agency and the occurrence of work disability. Results were expressed as Hazard Ratios (HR) and 95% confidence intervals (CI). The interaction term between sex and transfer into an agency (p = 0.086) did not suggest different effects of organizational change on work disability in men and women. Thus, we did not stratify the analysis by sex and all analyses were adjusted for sex. Models were sequentially adjusted for age, demographics, health status, health behaviours and unemployment periods during the follow-up. Analyses were performed using SAS software version 9.1.

RESULTS

Of the 4682 participants in the analysis, 1263 (27%) reported having been transferred to an executive agency. Characteristics of the participants as a function of the transfer to an executive agency are presented in table 1. Transferred employees were slightly older, more
likely to be men, married or cohabited, and in higher occupational grades than those not transferred. They also had more psychological
distress and were more likely to have high blood pressure than nontransferred employees. Altogether 239 new cases of work disability
occurred during 36115 person-years of follow-up time, a rate of 6.6 per 1000 person-years. Work disability was more common among
those with older age, the low grades, and participants with non-optimal selfrated health, psychological distress, or CHD (results not
shown).

Table 2 shows the association between transfer to an executive agency and subsequent work disability. In the age- and sex-adjusted
model, employees who experienced major organizational change were at greater risk of subsequent work disability (hazard ratio 1.90, 95%
confidence interval (CI)1.46–2.48), compared to those not transferred. Additional adjustment for marital status and occupational grade
made little difference to the hazard ratio. Further adjustment for health, health behaviours and unemployment periods somewhat attenuated
the hazard ratio, 1.61 (95% CI 1.23–2.10). Addition of an interaction term between sex and transfer to an agency showed some evidence (p
=0.086) for a higher hazard ratio in men, 1.93 (95% 1.37 to 2.73), compared with women, 1.22 (95% CI 0.78 to 1.91).

DISCUSSION

In this study from the Whitehall II cohort, we found an increased risk of work disability among employees who had previously
experienced major organizational change - the transfer of public sector work to executive agencies run on private sector lines. Our findings
are also consistent with our earlier study of this cohort which used the measure of organizational change but focussed on self-reported
psychological and physical morbidity.7 The adjustment for health status assessed at the beginning of the follow-up and unemployment
periods after the baseline suggests that our results were not attributable to pre-existing morbidity or unemployment experiences during the
follow-up period.

To our knowledge, this study is unique in terms of its prospective design and the ability to take account of a range of covariates. We
treated our exposure group (employees experiencing major organizational change) in the same way as an “intention-to-treat group” in a
clinical trial, that is, those reporting the exposure at phase 3 remained in the exposure group regardless of what happened to them after
that. This approach is to minimise bias caused by exposure changes related to the outcome of interest; particularly appropriate when data
on exposure during the follow-up are incomplete, as is the case in the present study. Although differential loss to followup among those
transferred to agencies is possible, major bias is unlikely as the analyses controlled for differences in pre-existing health. We therefore
believe that our findings are likely to be generalisable across the Civil Service and probably beyond to other office-based public sector
employees.

It remains to be investigated whether there is a direct causal link between major organizational change, in terms of a transfer into an
executive agency, and work disability. The unintentional drawbacks related to such changes may involve job insecurity, increased
workload, and perceived injustice, especially if the process is insensitively managed and leads to major disruption of established social
support networks. Many of these adverse psychosocial factors have been shown to be associated with poor health outcomes.8 ,9 ,16 –18

The intensity by which organizational change and job insecurity is perceived by individuals may be dependent on the labour market
context.8 Work in the British Civil Service was believed to be secure “for life” and changes that took place during late 1980s and 1990s
were most likely to be experienced as fundamental and beyond one's control due to the change from secure to an insecure job.19

Empirical evidence from the UK has shown that increases in the unemployment rate result in increases in applications for incapacity
benefit, suggesting that part of the rise in the incapacity rate is actually “hidden unemployment”.20 Therefore, transfer of employees into
executive agencies may have put higher demands on the capacities of transferred employees, competition for jobs, and unstable careers,
eventually resulting in withdrawal from the labour market since they no longer “fit in”.

Conclusions

As the outsourcing and privatisation of public sector services become more common worldwide, our observation that the risk of work
disability was greater among employees who experienced major organizational change highlights an important potential cost attendant on
moves toward privatisation of the public sector.

What is already known on this topic

• Major organizational changes, such as outsourcing and privatisation, have been shown to be associated with impaired health among
  affected employees.

• Whether this impaired health subsequently translates into long-term work disability is unclear.

What this study adds
Risk of subsequent work disability was higher among civil servants transferred to an executive agency (a form of outsourcing) than among those not transferred.

This may highlight an unintentional cost for employees, employers and society.

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References:

4. OECD. Transforming disability into ability: policies to promote work and income security for disabled people. Paris OECD Publishing ; 2003 ; 16 - 176
Table 1
Characteristics of the participants at baseline in relation to a transfer to an executive agency. Figures are numbers (percentages) unless otherwise stated.

<table>
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<tr>
<th>Characteristics at baseline</th>
<th>All (n=4682)</th>
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<th>Yes (n=1263)</th>
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<td>3335 (71.2)</td>
<td>2376 (69.5)</td>
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<td>710 (56.2)</td>
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<th>Table 2</th>
<th>Association between major organisational change (transfer to an executive agency) and subsequent work disability</th>
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* Model 1: adjusted for age and sex.
† Model 2: as model 1 and additionally adjusted for marital status and occupational grade.
‡ Model 3: as model 2 and additionally adjusted for health status, health behaviours and unemployment periods.