



# Psychosocial Working Conditions in Great Britain in 2005

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# 1 EXECUTIVE SUMMARY

## Introduction

This report is based on a survey of Psychosocial Working Conditions in Great Britain in 2005, and has two aims: to summarise the position in 2005, and to provide a comparison with the corresponding 2004 survey (<http://www.hse.gov.uk/statistics/causdis/pwc2004.pdf>). HSE's Management Standards for work-related stress were launched on 3 November 2004. Therefore, comparison between 2004 and 2005 data allows assessment of psychosocial working conditions before and shortly after the Management Standards were launched. Analyses of this and future surveys in this series will assist the evaluation of these Management Standards. To this effect analysis focuses on industry sectors where HSE is targeting efforts to increase uptake of the Management Standards. The measurement of psychosocial working conditions is by a stress indicator tool, that enables an overall assessment of working conditions by the six areas of role, relationships, change, demand, control and support, that comprise the Management Standards.

## Main Findings

- Overall the survey results were similar to those from the corresponding survey in Spring 2004. However, since the Management Standards were only launched four months prior to the 2005 survey it would be too early to detect a significant impact.
- Despite the overall similarity of the 2004 and 2005 survey results, there was evidence that employees are being made more aware of Changes occurring in the workplace, and weaker evidence that Relationships are improving, although not for those employees working in the worst conditions.
- There was limited evidence that Support (in particular employer support) may be improving. However, this conclusion was based solely upon a single question.
- There were indications that the level of work related stress was decreasing, but there was no change in the proportion of workers reporting their job to be extremely stressful.
- Targeted industry sectors had poorer psychosocial conditions in the six areas of interest compared to non-targeted industry sectors in both 2004 and 2005. However, there was evidence, at least for some of the Management Standards, to suggest that there may be some improvement.

## Recommendations

No firm recommendations can be made based upon an analysis of the 2004 and 2005 survey data as it is too early to assess the full impact of the implementation of the Management Standards in reducing work-related stress. The data from the planned Spring 2006 surveys will give a much better indication of the impact of the HSE stress programme, since the programme will have been running for approximately 18 months as opposed to 6 months.

Sample sizes should be re-evaluated for future surveys because conclusive findings, on account of the target sectors' low sample numbers, could not be drawn from the 2005 survey. This will be compounded by the reduced sample size of 2100 private addresses (down from 3000) used in the omnibus survey from April 2005 onward.

## 2 INTRODUCTION

### 2.1 BACKGROUND

Work-related stress is the second most commonly reported work-related ill-health problem, with just over half a million workers expressing they have experienced stress at a level that makes them ill, HSE (2005). Stress, depression and anxiety accounted for an estimated 12.8 million working days lost in 2004/2005, HSE (2005). Work-related stress not only causes high levels of sickness related absence, but also contributes to a high turnover of staff and reduced performance in organisations.

The Health and Safety Executive (HSE) launched the Management Standards for work-related stress (<http://www.hse.gov.uk/stress/standards/index.htm>) at the end of 2004 and will assist in the delivery of the Health and Safety Commission's (HSC) wider strategy on revitalising health and safety by 2010 (<http://www.hse.gov.uk/revitalising/index.htm>). The aim of the Management Standards was to contribute to a reduction in work-related stress across the working population in Great Britain (Mackay *et al.* (2004)) by raising awareness of work-related stress and encouraging organisations to work towards reducing the risk of this illness in their workplace. The process involves promoting the self-regulation of both large and small organisations by providing user-friendly tools for conducting risk assessments for work related stress, with a view to the organisations recognising the psychosocial hazards that can contribute to work-related stress in their workplace and working to reduce these risks. Good management practices are key to the success of the stress programme.

The Management Standards, described in Mackay *et al.* (2004), are split into six standards. These are all psychosocial hazards associated with work-related stress, namely

- Demands – Includes issues such as workload, work patterns and the work environment.
- Control – How much say the person has in the way they do their work.
- Support – Includes the encouragement, sponsorship and resources provided by the organisation, line management and colleagues.
- Role – Whether people understand their role within the organisation and whether the organisation ensures that the person does not have conflicting roles.
- Relationships – Includes promoting positive working to avoid conflict and dealing with unacceptable behaviour.
- Change – How organisational change (large or small) is managed and communicated in the organisation.

An indicator tool was developed using the six standards, enabling organisations to obtain an indication of the psychosocial hazards within the working environment and highlighting areas that need to be targeted. However, the Management Standards approach does not enforce the use of this particular indicator tool, but can be seen as a more holistic risk assessment method (Cousins *et al.* (2004)) that encourages the use of all sources of information available to an organisation in order to identify the psychosocial hazards responsible for problems.

## **2.2 AIM**

This report analyses a survey undertaken in Spring 2005 providing an indication of psychosocial working conditions in the British workplace. The survey follows the launch of HSE's Management Standards in November 2004. Comparisons are made between these data and data collected in Spring 2004 when the survey was first run, prior to the launch of the Management Standards.

The survey and subsequent surveys aim to provide information that can be used to evaluate the Management Standards and more widely HSE's stress programme.

## **3 METHODOLOGY**

### **3.1 OMNIBUS SURVEY**

In 2005 HSE commissioned a series of questions in two of the Office for National Statistics (ONS) Omnibus Surveys, carried out in March and April 2005. The Omnibus survey is a multi-purpose survey developed by the ONS for use by Government departments and other public bodies. It is a vehicle for questions on topics too brief to warrant a survey of their own and also for topics of immediate interest. Since April 2005, interviewing has been carried out every month (previously the survey was run in two months out of every three – eight months of the year in all). Each month's questionnaire covers a variety of modules each sponsored by a Government department (or public body) and a core of demographic questions. The number of questions contained within a module is limited by ONS, and each sponsor is limited to a single module within any given survey. Due to these restrictions, HSE ran questions in consecutive (March and April) Omnibus surveys.

#### **3.1.1 Sample**

The Omnibus sample is a random probability sample stratified by region, the proportion of households with no car, the proportion of households where the household reference person is in the National Statistics Socio-economic Classification (NS-SEC) categories 1-3, and the proportion of people who are aged over 65 years. The Office for National Statistics website <http://www.statistics.gov.uk/about/services/omnibus/sample.asp> provides a fuller description of the stratification. The Royal Mail's Postcode Address File (PAF) of 'small users' provided the sampling frame used. The PAF contains the addresses of approximately 27 million private households in the UK, which receive fewer than 50 items of mail per day, and is the most complete and up to date address database in the UK.

Until March 2005, the Omnibus survey was based upon 100 postal sectors, and within each sector 30 addresses were selected at random. However, from April 2005, when the Omnibus survey became a monthly survey rather than running in 8 months of the year, the survey consisted of 67 postal sectors, with 30 addresses selected at random from each of these sectors. The postal sectors were selected with probability proportionate to size (number of addresses within the postal sector).

In the cases where an address contained more than one household, the interviewer used a standard ONS procedure to randomly select a single household. Within households containing more than one adult member (aged 16 years or above), a single participant was selected using random tables.

#### **3.1.2 Weighting**

As only one household member was interviewed, the likelihood of being selected was higher in households containing few adults than those with many adults. A weighting factor was therefore applied to correct for this unequal probability of selection. Resultantly, some frequencies and totals presented in the report may not be whole numbers nor perfectly match the sample numbers reported.

#### **3.1.3 Fieldwork**

All interviews were carried out face-to-face by interviewers trained to carry out ONS surveys. Advance letters were sent to all selected households giving a brief account of the survey. And interviewing was completed within a two-week period in both months. Interviewers called at all

selected addresses unless refusal had been made beforehand in response to the advanced letter. The interviewer made at least three calls at an address at different times of the day before abandoning the attempt to contact and interview the selected household member. The interviewer only interviewed the selected household member with no proxy interviews taken.

## **3.2 QUESTIONNAIRE**

The psychosocial working conditions questions were developed as part of an indicator tool to support the Management Standards. Full details of the development of this tool are given in Clarke (2004). The indicator tool comprises of seven separate scales of Demand, Control, Managerial Support, Peer Support, Role, Relationships and Change that map onto the six Management Standards. In order to ensure the results from the 2004 and 2005 surveys were comparable, the questions to be used in the latter survey were partitioned in the same manner as used in the earlier survey. Originally it was intended to use questions that mapped onto the Role, Relationships and Change standards in the March survey, and questions that mapped onto the Demand, Control and Support (Management Support and Peer Support) standards in the April survey. Secondly, both HSE modules were intended to contain six key questions, termed first pass questions (HSE (2004b)), which were thought to best represent each of the six standards. Additionally, both surveys were intended to contain core questions that aimed to identify eligible respondents (discussed further in section 3.3.1) and questions related to stress.

Due to an error in the implementation of the April Omnibus survey, questions scheduled for the March module were also used in the April survey. Since all the modules in subsequent Omnibus surveys were allocated, it was not possible to run the correct module until December 2005, and given that it has been suggested that responses relating to some working conditions have a seasonal effect (HSE (1995)), the 2004 and 2005 studies may not in that case have been comparable. Resultantly, the module was not run in 2005, and the only information on the Demand, Control and Support standards was contained in the responses to the first pass questions. Therefore, a full comparison of all six Management Standards and how these were related to stress, has not been possible. In this report, the first pass questions on Demand, Control and Support have been used as a surrogate for the full set of questions on these standards. Since it has been shown that the first pass questions do not measure all aspects of the standards they map onto (HSE (2004b)), results have been presented for these separately and hence conclusions based solely upon these single first pass questions need to be viewed with some caution. The questions from the March module are included in Appendix A.

### 3.3 RESPONSE RATE

Response rate was calculated as the percentage of the number of interviews achieved from the total number of eligible addresses. Response rates of 62% and 69% were achieved for the March and April surveys respectively.

**Table 1: Response rates from March survey**

	Number	Percentage of all addresses	Percentage of eligible addresses
Selected addresses	3,000	100	
Ineligible addresses	238	8	
Eligible addresses	2762	92	
Refusals	739		27
Non-Contacts	320		12
Interviews Achieved	1,703		62

**Table 2: Response rates from April survey**

	Number	Percentage of all addresses	Percentage of eligible addresses
Selected addresses	2,010	100	
Ineligible addresses	191	10	
Eligible addresses	1819	90	
Refusals	440		24
Non-Contacts	127		7
Interviews Achieved	1,251		69

The overall response rate to the questions on Role, Relationships and Change was 64.5%.

### **3.3.1 Response to HSE modules**

The questions in the HSE modules were largely based on work-relationships and structures that would be of little relevance to self-employed people who worked largely on their own and with complete control over their own work. Therefore, only responses from employees and self-employed respondents who worked as though they were employees were asked the questions from the HSE modules. Resultantly, of the 1703 and 1252 interviewees from the March 2005 and April 2005 surveys, 845 and 631 answered the HSE module, respectively.

## **3.4 ANALYSIS**

A previous survey reported in HSE (2004b) was conducted in March/April 2004, prior to the launch of the Management Standards in November 2004. The survey provided a benchmark with which to compare the results of subsequent surveys. The analysis of responses to the 2005 survey had a different focus. It aimed to assess how working conditions had changed from 2004 to 2005, with respect to the Management Standards and to stress in general. Changes were to be assessed as a whole and also for specific target sectors. In order to ensure the 2004 and 2005 surveys were comparable, whenever possible the same methodology as used in 2004 has been repeated in the analysis within the current report.

### **3.4.1 Responses to HSE questions**

Ordinal responses were obtained for all of HSE's psychosocial working conditions questions, using one of two balanced 5-point Likert scales. The scale that was used depended on the nature of the question. The first scale related to the frequency with which the interviewee was exposed to specific working conditions with responses ranging from 1 = 'Never' through to 5 = 'Always'. The second scale was a measure of agreement, with 1 = 'Strongly Disagree' through to 5 = 'Strongly Agree'. For each question the interviewees also had the additional options of 'Don't know' and 'Refuse'.

For ease of comparison the responses were realigned in the analysis so that a score of 1 was associated with the most unfavourable working conditions and a score of 5 with the most favourable working conditions. Resultantly questions related to the Demand and Relationships standards had their scores derived from reverse coding.

An overall score for each respondent was calculated for each of the Role, Relationships and Change Management Standards by summing the scores for each question within the standard and dividing by the number of questions. A mean score, ranging between 1 and 5, was derived in this manner for each respondent for the Role, Relationships and Change Management Standards. When the interviewee did not answer a question (either because the answer was unknown or the interviewee refused to answer the question), the mean value of the Management Standard was taken as the sum of the scores from the questions on the standard that were answered, divided by the number of questions on the standard that were answered. An integer score ranging between 1 and 5, based on the first pass questions, was recorded for each respondent for the Demand, Control and Support standards.

All the interviewees were asked three additional questions about stress. The first asked the interviewee how stressful they found their job to be and was answered using a balanced 5 point Likert scale, with responses ranging from 1 = 'Not at all stressful' to 5 = 'Extremely stressful'. The remaining questions asked about initiatives to reduce stress in the workplace and discussion of job stressors with managers and required yes/no/don't know responses.

### 3.4.2 Other Derived Variables

Three variables were derived using information from core questions, namely gender (male, female); age ( $\leq 40$ ,  $> 40$ ); job type (manual, non-manual). Responses were analysed against these variables in HSE (2004b). In the present survey, differences in these variables were of secondary interest, and were instead controlled for (see section 4.4.1), to ensure consistency in the demographic of the two survey populations and to ensure that the results reflect true changes in workplace stress.

### 3.4.3 Occupational Analysis

The occupations of each of the interviewees were coded by the ONS using the four digit Standard Occupation Classification (SOC) for both the 2004 and 2005 studies. Although the 2004 study collected information on occupation, this was not included in the published report HSE (2004b). However, since the 2004 report, specific efforts have been made at improving working conditions with regard to stress within the target *industry* sectors of Financial intermediation; Public administration & defence; Education; and Health & social work, corresponding to sections J, L, M and N of the Standard Industrial Classification (SIC) of Economic Activities, ONS (2003). These target sectors were selected for initiatives to reduce stress in the workplace since they had the highest incidence rates or sickness absence rates from work related stress, as found in the 2001/2002 Self Reported Work Related Illness (SWI) survey (HSE (2003)).

One objective of the current report was to assess whether HSE initiatives had been successful in improving working conditions, as measured by the Management Standards, and in reducing stress levels within the target sectors. In order to make such an assessment a recoding from the 4 digit SOC codes, recorded by ONS to the top level SIC codes was required. It is not possible to perform an exact recoding from SOC occupation codes to SIC industry codes. However it was possible, using information obtained from questions from the 2001 census, to calculate the probability that an individual of a given gender and with a given occupation (as described by the 4 digit SOC code) worked within each of the 17 sectors covered by the top-level SIC codes. Individuals were classified using these probabilities – full details below. General comparisons between the target and non-target sectors and a detailed comparison of the four target sectors are included in this report, such that:

- The first of these comparisons gave an overview of how working conditions in the target sectors differed from those in the non-target sectors. Reclassification was simple in this case; each respondent was classified as being in the target sector group if the sum of the respective probabilities of the respondent working within the Financial Intermediation; Education; Public Administration and Defence; and Health and Social Work sectors was in excess of 0.5, and classified as non-target sector if this sum was below 0.5.
- The second of the comparisons involved a detailed analysis of how working conditions within the four target sectors differed from each other. A respondent was adjudged to work within a specific target sector if the probability of correct inclusion was  $\geq 0.5$ . For example, if the probability that a respondent with a given SOC code worked within the health sector was 0.51, the respondent would be classified as working within the health sector, whereas if this probability was 0.49, the respondent would not be classified as working within the health sector.

In each of these comparisons the classification scheme used 0.5 as the cut-off so that the probability of misclassification was less than the probability of correct classification. However, for a large proportion of jobs (indexed by SOC codes) the probability that the respondent was within a target sector was either close to one or close to zero: for example the probabilities that a teacher worked within education and a doctor worked within the health sector were both in excess of 0.90.

### **3.5 STATISTICAL TECHNIQUES**

Files of the 2005 data were received from ONS and combined with 2004 data. The data were filtered such that only the subjects that adhered to HSE's criteria (described in 2.3.1) were included.

Contrasts between groups were assessed using chi-squared tests or Fisher's exact test for nominal data. Mann-Whitney U tests were used to assess contrasts between two groups for ordinal responses. The Kruskal-Wallis test was used to assess differences between more than two ordinal groups. Pairwise correlations between ordinal responses were calculated using Kendall's tau-b. Cuzick's trend test was used in a secondary analysis to assess for a trend in the Management Standards across the five ordered levels of stress, with this analysis included in Appendix B. STATA (STATA, 2004) was used to carry out all statistical analyses. Summaries (such as medians) are not in general included in the main text of the report, however for the ordinal comparisons these are included in Appendix C. When hypothesis tests have been performed the results are presented in Appendix D.

## 4 2005 RESULTS

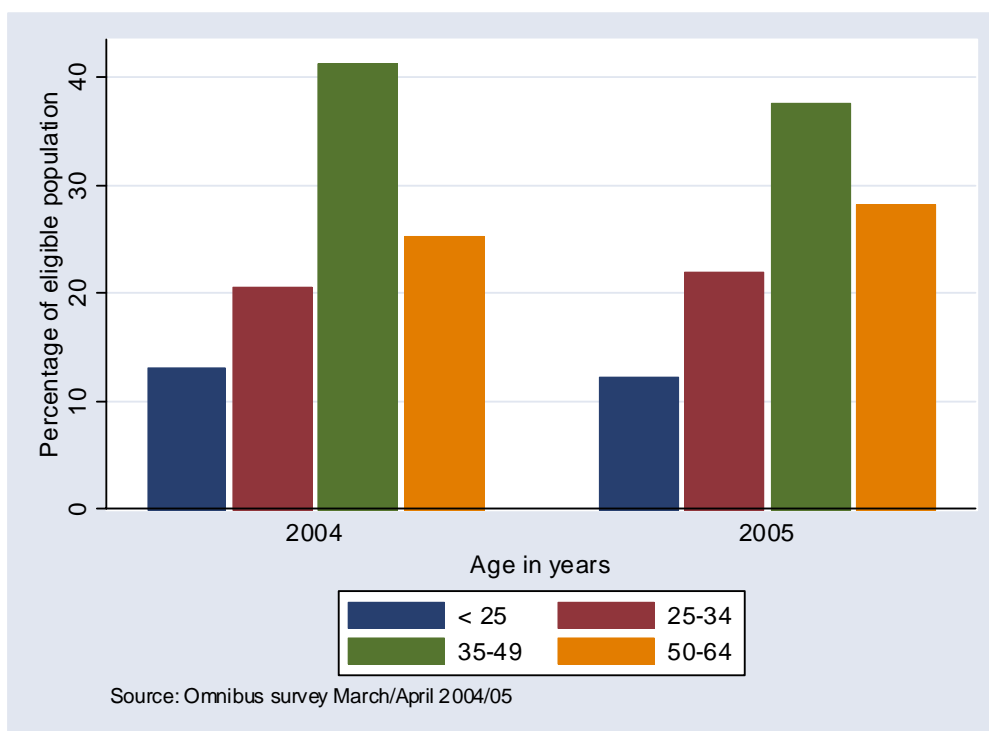
### 4.1 DEMOGRAPHICS

ONS achieved a total of 2954 interviews, including 1703 from 3000 selected addresses in March and 1251 from 2100 selected addresses in April, and from these 1476 interviewees answered HSE's module on Role, Relationships and Change.

Of the 1476 respondents, 47% were male and 53% female, figures that were almost identical to those from the 2004 study, which also rounded to 47% and 53% male and female respectively. The ratio of male to female respondents did not vary between March and April.

The age distribution of respondents is shown in Figure 1, for both years of the study, 2004 and 2005.

**Figure 1: Distribution of respondents age 2004/05**



The largest groups were employees aged 35-49 followed by 50-64 in both years, with 2005 having a slightly larger proportion of the oldest group of employees than 2004. The proportions of respondents aged less than 25 years and those aged 25-34 very similar between 2004 and 2005. Both populations were comparable with the age distribution of the working population as measured by the Labour Force Survey (LFS).

The geographical distribution of the respondents is tabulated in Table 3 below.

**Table 3: Distribution of respondents by Government office region**

Region	Percentage of respondents	
	2004	2005
North East	4.0	3.7
North West	10.7	11.3
Yorkshire and the Humber	8.6	8.6
East Midlands	8.7	10.0
West Midlands	8.6	8.5
East of England	10.5	9.8
London	8.9	12.0
South East	17.7	16.0
South West	8.6	8.6
Wales	6.2	3.5
Scotland	7.5	8
Total	100	100

The regional breakdown of the respondents was comparable between the surveys in 2004 and 2005, and with the working population, as measured by the LFS (HSE (2004b)).

In terms of age and location the respondents were consistent across 2004 and 2005 studies, and appeared to be broadly representative of the working population. However, a comparison of the responses from the survey with figures from Wilson *et al.*, 2004 suggested that there was a gender bias in the response rate, with more women successfully interviewed than would be expected. Whilst in this regard the responses were not representative of the working population, they were consistent across studies, and therefore comparable.

#### **4.1.1 Consistency**

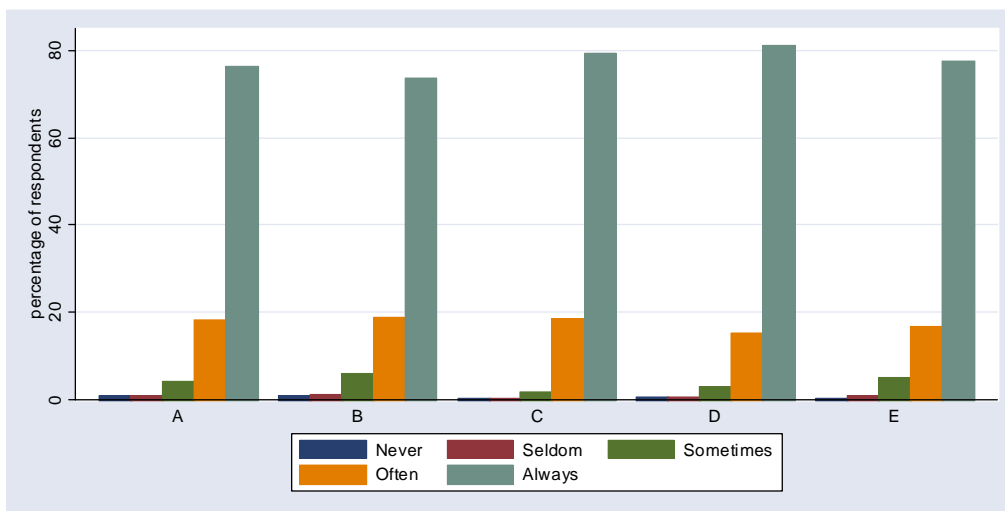
In order to ensure consistency between the surveys conducted in 2004 and 2005, it was also necessary to assess if the two respondents to the two surveys were comparable with regard to age, gender and job type. Log linear models with age, gender, job status and year as explanatory variables were used to test for differences between the demographic of respondents to the two surveys. Study year was not found to be significant and resultantly any differences found between studies were not an artefact of different demographics in the two studies.

## 4.2 MANAGEMENT STANDARDS

### 4.2.1 Responses to questions on Role, Relationships and Change

Responses to the five questions that map onto the Role standard are given in Figure 2; responses to the four questions that map onto the Relationships standard are given in Figure 3; responses to the 3 questions that map onto the Change standard are given in Figure 4. A question key accompanies each of the 5 questions, and this also shows the response rates to each question.

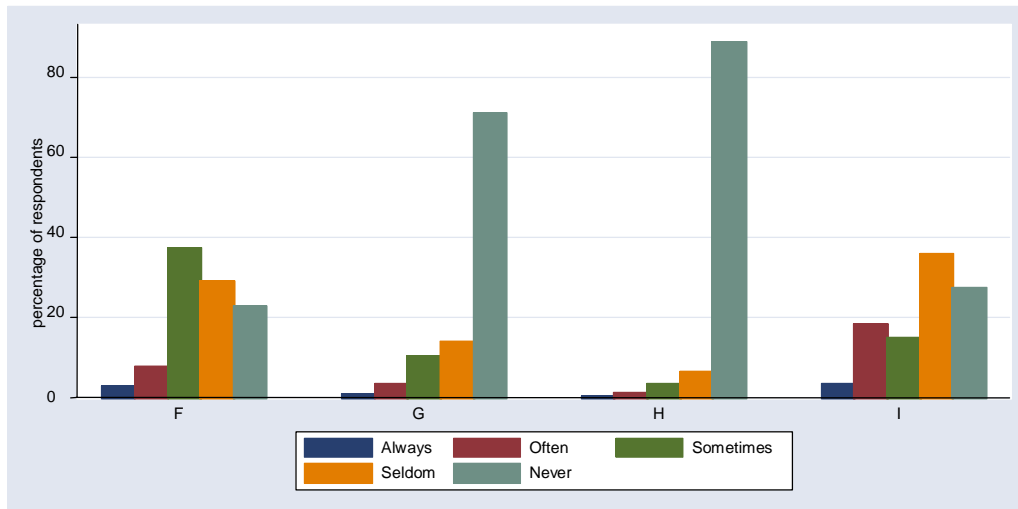
**Figure 2: Responses to the questions on Role**



#### Question Key and Non-Responses

Letter	Question	Percentage non-responses
A	I am clear what is expected of me at work	0.34
B	I am clear about the goals and objectives for my department	0.55
C	I know about how to go about getting my job done	0.34
D	I am clear what my duties and responsibilities are	0.34
E	I understand how my work fits into the overall aim of the organisation	0.55

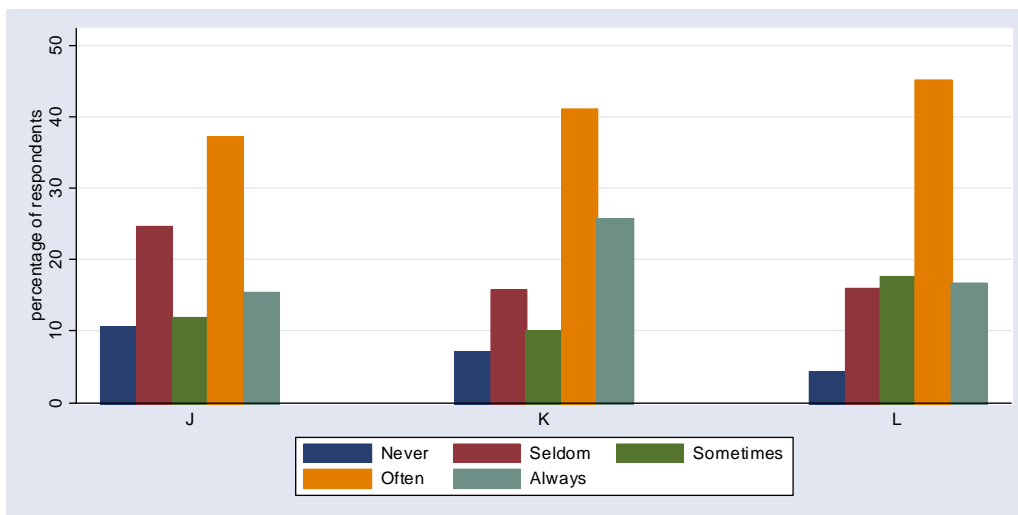
**Figure 3: Responses to the questions on Relationships**



**Question Key and Non-Responses**

Letter	Question	Percentage non-responses
F	There is friction or anger between colleagues	0.61
G	I am subject to personal harassment	0.41
H	I am subject to bullying at work	0.48
I	Relationships at work are strained	0.81

**Figure 4: Responses to the questions on change**



**Question Key and Non-Responses**

Letter	Question	Percentage non-responses
J	Staff are consulted about change at work	1.29
K	I have sufficient opportunities to question managers about change	0.95
L	I am clear how changes will work in practice	0.95

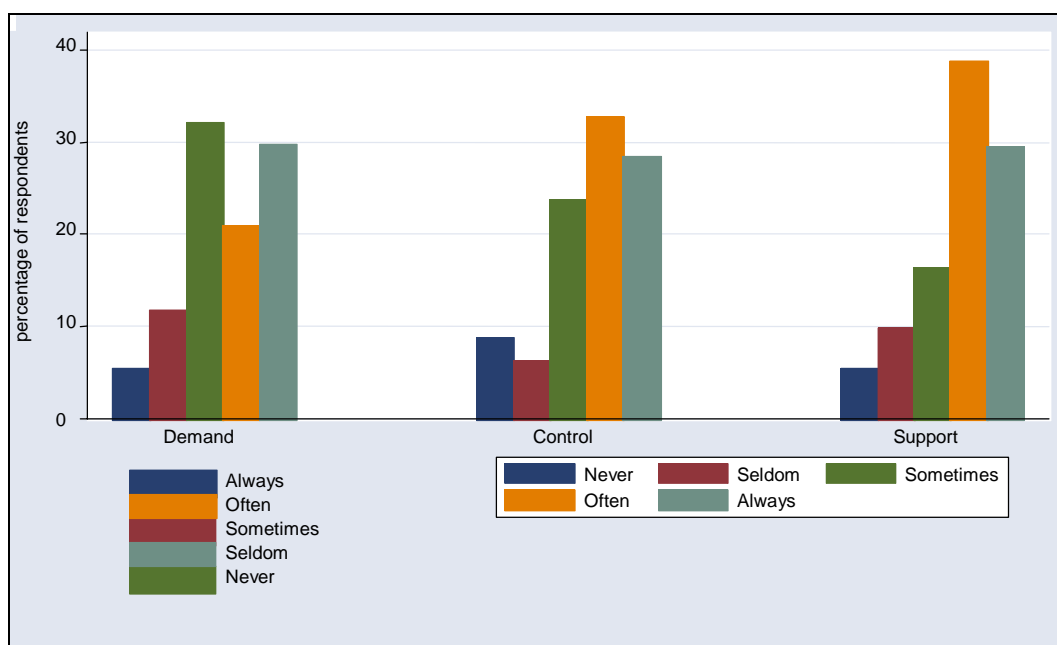
Responses to the five questions that mapped onto the Role standard were highly correlated, likewise for the questions that mapped onto the Relationships and Change standards. Responses to questions mapping onto different standards were weakly correlated. These results were consistent with the more detailed analysis conducted in HSE (2004b).

The proportion of respondents who failed to answer the questions either because they refused or could not answer the question were very low and noticeably lower than the corresponding figures from the survey conducted in 2004 (HSE (2004b)).

#### 4.2.2 Responses to questions on Demand, Control and Support

Responses to the first pass questions on Demand, Control and Support are shown in Figure 5.

**Figure 5: Responses to first pass questions for Demand, Control and Support**



#### Question Key and Non-Responses

Letter	Question	Percentage non-responses
Demand	I have unrealistic time pressures	0.3
Control	I have a choice in deciding how I do my work	0.2
Support	My line manager encourages me at work	1.9

The responses were weakly correlated, which is consistent with HSE (2004b).

The proportions of non-responses were again generally very low, although noticeably larger for the first pass question relating to Support. Response rates were higher for all three first pass questions than in 2004 (HSE (2004b)).

### 4.2.3 Analysis of mean scores

A mean score was calculated for each respondent for the Role, Relationships and Change standards. The mean value corresponds to a subject's Management Standard score. Histograms of the Management Standard scores are shown in Figure 6.

**Figure 6: Distribution of Management Standard scores for Role Relationships and Change**



Results showed that respondents were, in general, very clear about their Role within their organisation, with over 60% of respondents always aware of all aspects of their Role and approximately 95% always or often aware of all aspects of their Role. A very small proportion (less than 1%) were seldom or never aware of all aspects of their Role.

The results from the 2005 survey also showed that respondents, in general, had positive Relationships in the workplace with a large proportion, approximately 60%, feeling that all aspects of work Relationships were often or always positive, although only 15% felt that all aspects of Relationships were always positive. A much smaller proportion, approximately 15%, had low scores to the questions 'There is friction or anger between colleagues' and 'Relationships are strained' which are measures of general work relationships. Few respondents suffered the problems of harassment or bullying hence less than 2% of respondents felt that all aspects of Relationships were often or always negative.

The scores for the Change standard were the lowest and most variable, with only 10% of respondents always aware of all aspects of Change and approximately 15% seldom or never aware of all aspects of Change in the workplace.

### 4.3 STRESSFULNESS

Respondents from both the March and April surveys were asked to rate how stressful they found their job using a balanced 5-point Likert scale. The results are shown in Table 4.

**Table 4: Responses to the question on Stressfulness**

Stress level	Number	Percentage
Not at all stressful	246	16.7
Mildly stressful	518	35.1
Moderately stressful	487	33.0
Very stressful	175	11.9
Extremely stressful	48	3.3
Total	1693	100

Table 4 shows that approximately 15% of respondents found their job very or extremely stressful, with the 'very stressful' category accounting for the largest proportion of these. A slightly larger proportion, an estimated 17%, reported working in an almost stress free environment. The vast majority of workers, over 66% of respondents, reported working in an environment where there was some degree of stress involved, although not the extreme levels.

#### 4.3.1 Stressfulness by standard scores

Results of the survey conducted in 2004 indicated an association between higher stress levels and more negative psychosocial conditions derived from the Role, Relationships, Change, Demand, Control and Support (both management and peer support) Management Standard scores, HSE (2004b). For comparison, a similar analysis was performed on the data from the 2005 survey for the Role, Relationships and Change Management Standards, with similar conclusions. Results of this analysis are given in Appendix B.

## 5 EMERGING TRENDS

The data from the surveys carried out in early 2004 and 2005 were compared in order to determine whether differences had occurred in the intervening 12 months since the first survey, and in particular since the launch of the Stress Management Standards in November 2004.

### 5.1 MANAGEMENT STANDARDS

#### 5.1.1 Role, Relationships and Change

A mean score was calculated for each respondent from both 2004 and 2005 studies for the Role, Relationships and Change Management Standards. Histograms of Management Standard scores are given in Figure 7.

**Figure 7: Distribution of Management Standard scores for Role, Relationships and Change by year**



Although the 2004 and 2005 distributions for Role, Relationships and Change scores look similar, the Change scores were significantly higher in 2005 ( $p = 0.017$ ). A detailed analysis of the responses showed that the two years were very similar for those scoring less than 3 and any changes largely occurred in workplaces with above average conditions where there was an improvement from 2004 to 2005.

There was weaker evidence to suggest that Relationship scores had increased from 2004 to 2005 ( $p = 0.068$ ). A more detailed examination of the data suggested that the changes were limited to the scores of 4 or above, such that only the respondents already working in conditions with above average Relationships experienced any improvement.

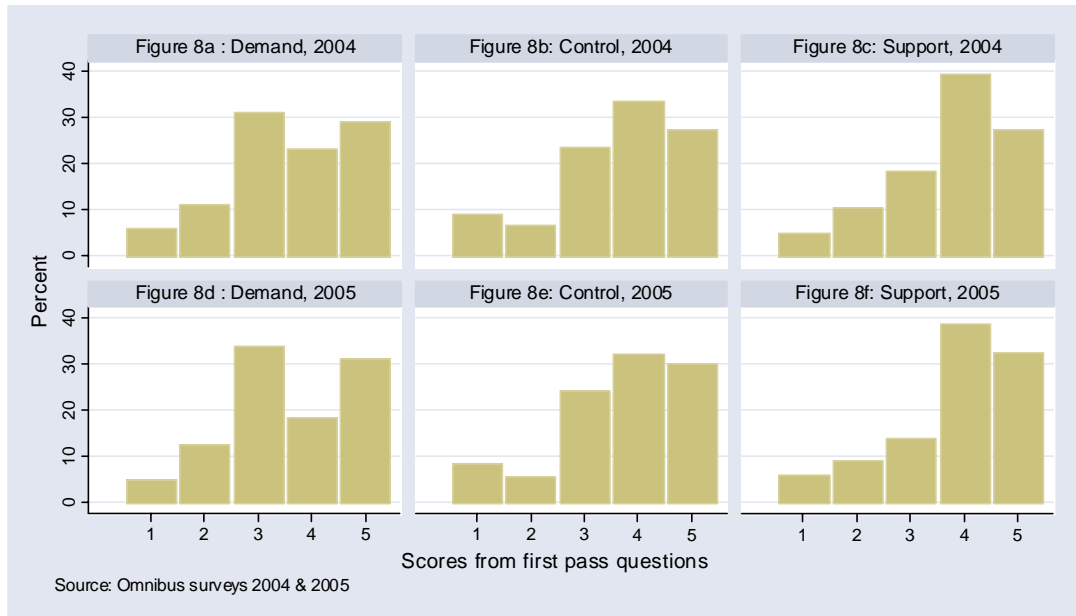
There was no indication that Role scores had changed from 2004 and 2005 ( $p = 0.688$ )

Further comparisons were made on the data from both surveys but no significant differences for gender, age or job-type were observed. All test results are given in table D2.

### 5.1.2 Demand, Control and Support

Responses to the first pass questions for Demand, Control and Support for the 2004 and 2005 surveys are given in Figure 8.

**Figure 8: Distribution of first pass question scores for Demand, Control and Support by year**



A clear improvement was observed from 2004 to 2005 in the responses to the first pass question on Support ( $p = 0.003$ ). A detailed analysis showed the proportion of respondents working in the least favourable conditions was unchanged and that the improvements occurred in respondents who scored Support at 3, 4 or 5.

There was no evidence that Demand and Control scores had changed from 2004 to 2005.

The 2004 and 2005 responses were investigated further in order to assess whether trends were more pronounced for any of the identified sub-groups. Statistical tests were performed and results are given in Table D4. The analysis of responses to the first pass question on Support showed that the scores of non-manual workers and females increased significantly from 2004 to 2005. The analysis of Control showed that respondents aged over 40 and non-manual workers had significantly increased scores from 2004 to 2005. The responses to the question on Demand were unchanged for any of the groups.

## 5.2 STRESSFULNESS

### 5.2.1 Stress levels

Each respondent from the 2004 and 2005 surveys was asked about how stressful their work environment was. The responses are displayed in Table 5.

**Table 5: Responses to the question on Stressfulness by year**

Stress level	2004		2005	
	Number	Percentage	Number	Percentage
Not at all stressful	270	16.0	246	16.7
Mildly stressful	544	32.1	518	35.1
Moderately stressful	599	35.4	487	33.0
Very stressful	219	12.9	175	11.9
Extremely stressful	61	3.6	48	3.3
Total	1693	100	1474	100

There was a general shift towards the ‘not stressful’ end of this scale between 2004 and 2005, and a statistical test showed a mildly significant change in the distribution of responses, in a positive direction ( $p = 0.065$ ).

The 2004 and 2005 responses were investigated further to assess whether more pronounced changes occurred for by the grouping variables of age, gender and job type. Non-manual workers and workers less than 40 years of age showed significantly reduced stress levels from 2004 to 2005 ( $p = 0.0356$  and  $p = 0.0105$  respectively).

### 5.2.2 Initiatives to reduce stress

The 2004 and 2005 responses were analysed to assess whether the prevalence of initiatives to reduce stress had changed from 2004 to 2005, both overall and when examining responses by age, gender and job type. No changes were found.

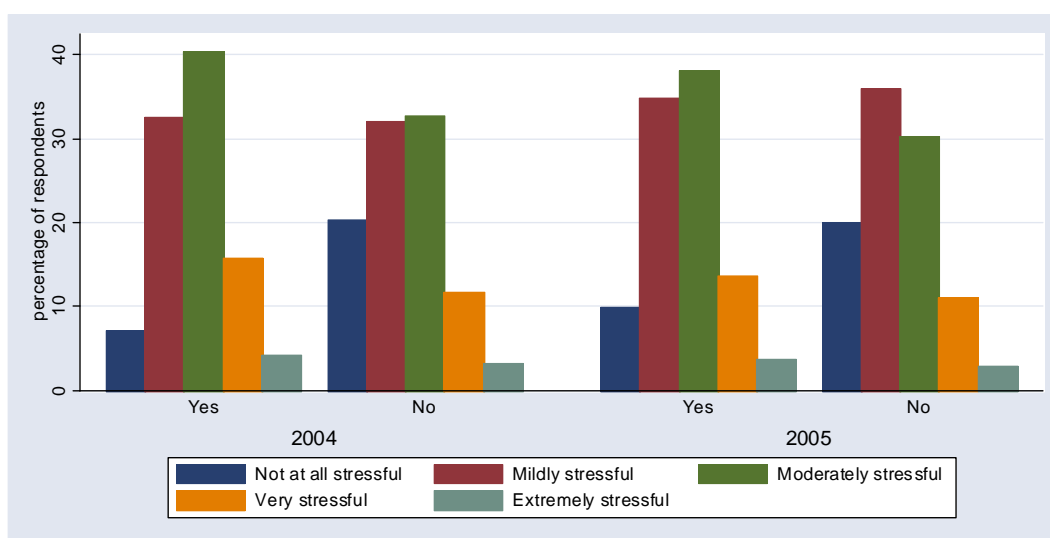
### 5.2.3 Discussion of stress with line manager

The 2004 and 2005 responses were analysed to assess whether the prevalence of discussions with a line manager about stress had changed from 2004 to 2005. No change was found.

The 2004 and 2005 responses were investigated further to assess whether changes occurred by age, gender and job-type. No changes were found. However an analysis of just the 2005 results found that females were more likely to discuss stress with a line manager than males and non-manual workers were more likely to discuss stress with a line manager than manual workers. Similar results were reported in HSE (2004b).

The proportions of respondents who had and had not discussed stress with a line manager by the 5 levels of stress are given in Figure 9.

**Figure 9: Responses to discussed stress with line manager by stress level and survey year**



The distributions of the 'yes' responses were broadly consistent for 2004 and 2005, only differing in proportions of the 'Mildly stressful' and 'Moderately stressful' responses. Similarly the 'no' responses for the two years only differed in the 'Mildly stressful' and 'Moderately stressful' responses. The changes from 2004 to 2005 were consistent with the changes in stress levels shown in Table 5.

## 6 TARGET SECTORS

Each respondent was attributed to the target or non-target group using the methodology described in section 3.4.3. The breakdown of the respondents for 2004 and 2005 using this methodology is given in Table 6.

**Table 6: Breakdown of respondents into target and non-target sectors**

Sector	2004		2005	
	Number	Percentage	Number	Percentage
Target	1203	69.65	1081	73.23
Non-target	524	30.35	395	26.77
Total	1727	100	1476	100

The breakdown of respondents into the four individual target sectors is given in Table 7. The classification scheme was once again described in section 3.4.3.

**Table 7: Breakdown of respondents into individual target sectors**

Sector	2004		2005	
	Number	Percentage	Number	Percentage
Finance	41	9	33	9.6
Government	59	13.1	55	16
Education	138	30.5	102	29.7
Health	214	47.4	154	44.7
Total	452	100	344	100

The number of respondents from the target sectors was relatively small, especially from the government and finance sectors in both 2004 and 2005.

The totals in Table 7 do not match the totals of those attributed to the target sectors in Table 6 due to the conservative classification scheme that was used. This was described in detail in section 3.4.3.

## 6.1 MANAGEMENT STANDARDS

### 6.1.1 Role, Relationships and Change

The distributions of Management Standard scores for Role, Relationships and Change by year for target and non-target sectors are given in Figure 10 (non-target sectors) and Figure 11 (target sectors).

**Figure 10: Distribution of Management Standard scores for Role, Relationships and Change for non-target sectors by year**



**Figure 11: Distribution of Management Standard scores for Role, Relationships and Change for target sectors by year**



The differences between target and non-target sectors were formally assessed using statistical tests for 2004 (results given in Table D11) and 2005 (results given in Table D12), and tests were also used to assess for significant changes within each standard between 2004 and 2005 (results given in Table D13).

An analysis of responses from the 2004 and 2005 surveys showed that the non-target sectors had significantly higher Relationship scores for both 2004 and 2005. Figures 10 and 11 indicate that relationships may well have improved over the last 12 months for both target and non-target sectors however the increases in scores were not statistically significant ( $p = 0.29$  and  $p = 0.21$  respectively).

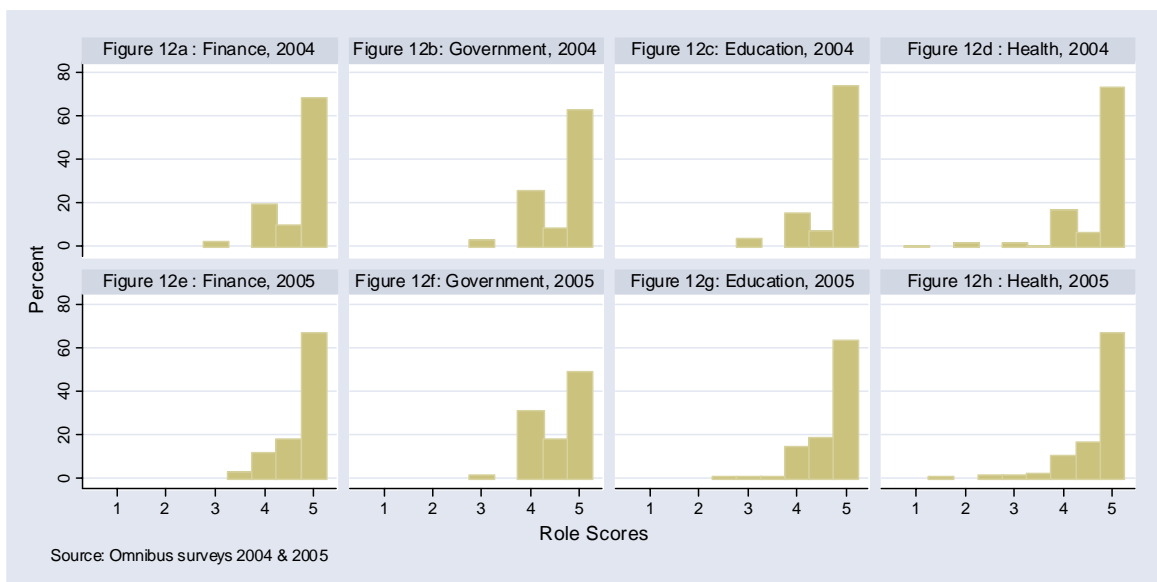
An analysis of the Change scores showed that the non-targets had an increase in scores between 2004 and 2005. As a result of this increase, the target and non-target sectors were significantly different with respect to Change scores in 2005, with the target sectors having significantly lower scores than the non-target sectors; those respondents not working within the target sectors were more aware of changes occurring in the workplace than those working within the target sectors.

An analysis of Role scores from the 2004 and 2005 surveys showed no differences between target and non-target sectors in either 2004 or 2005 and no changes in scores between 2004 and 2005 for target or non-target sectors.

A more detailed analysis of the target sectors was then performed in order to assess any differences in scores between the four target sectors for both 2004 and 2005, and to assess whether there was evidence to suggest that scores were changing in any of the four sectors over time.

The distribution of Role scores for the four target sectors are given in Figure 12.

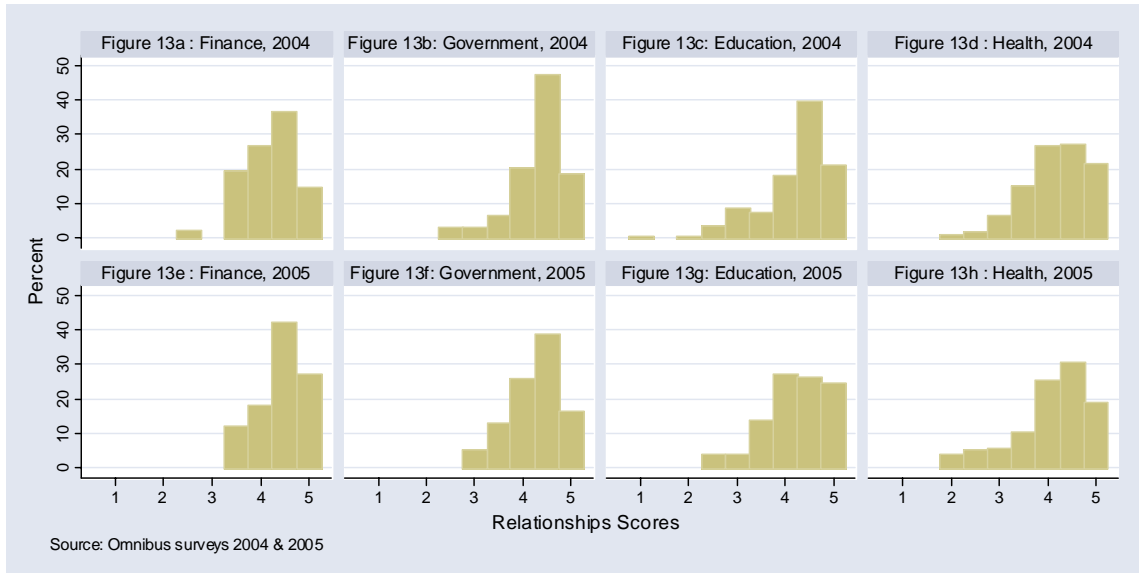
**Figure 12: Distribution of Role scores, for target sectors, by year**



No differences were found between the four target sectors in 2004 or 2005 and there was no evidence that Role scores had changed from 2004 to 2005 for any of the target sectors.

The distribution of Relationship scores for the four target sectors are given in Figure 13.

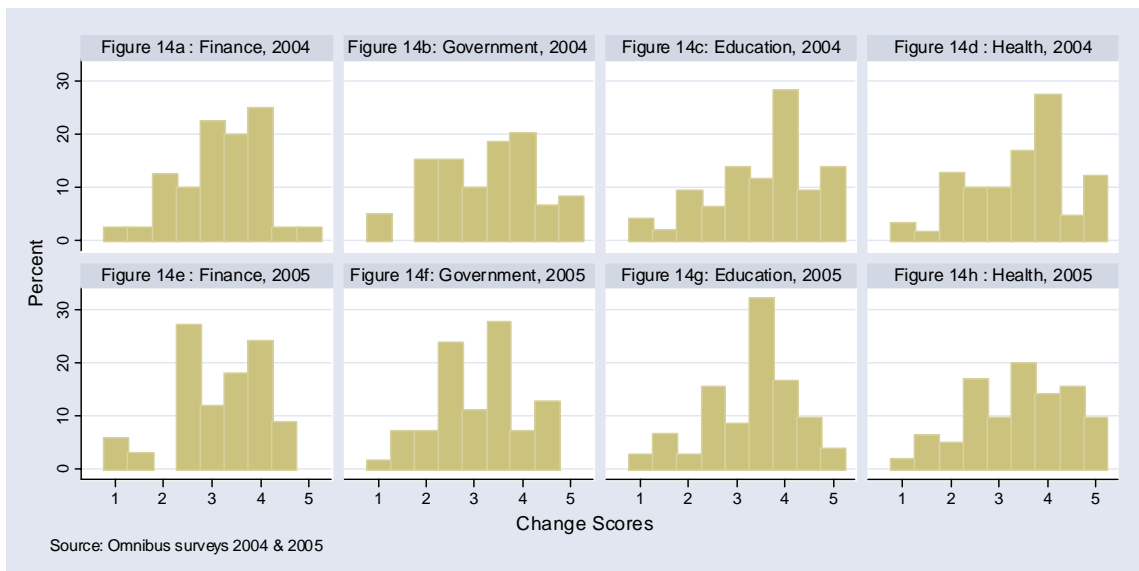
**Figure 13: Distribution of Relationships scores for target sectors by year**



No differences were found between the four target sectors in 2004 or 2005. However there was evidence that Relationship scores increased from 2004 to 2005 in the Finance sector.

The distribution of Change scores for the four target sectors are given in Figure 14.

**Figure 14: Distribution of Change scores for target sectors by year**

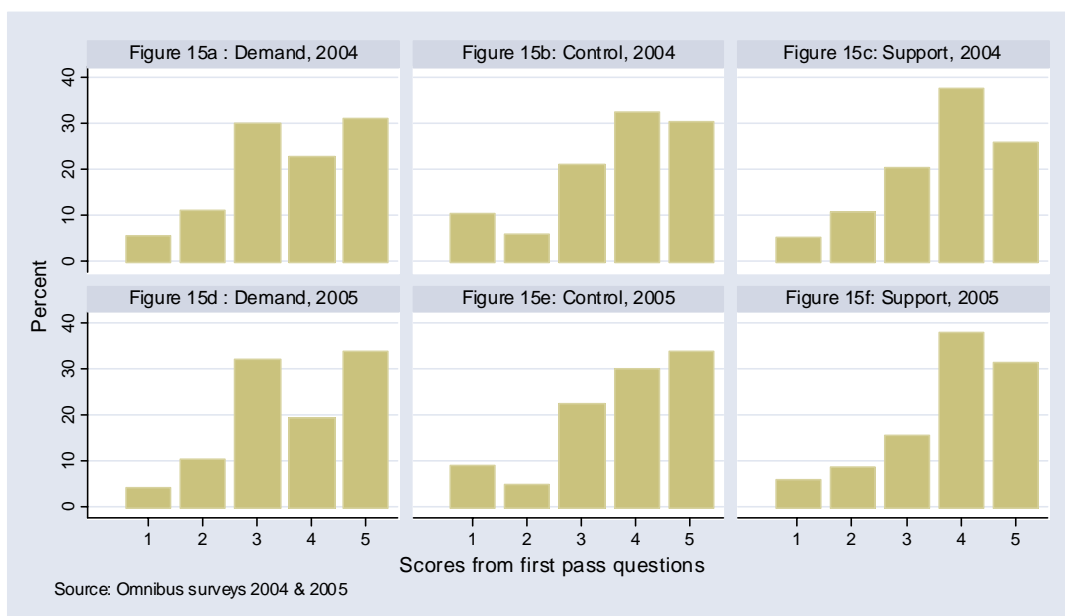


No differences were found between the four target sectors in 2004 or 2005 and there was no evidence that Change scores had changed from 2004 to 2005 for any of the target sectors.

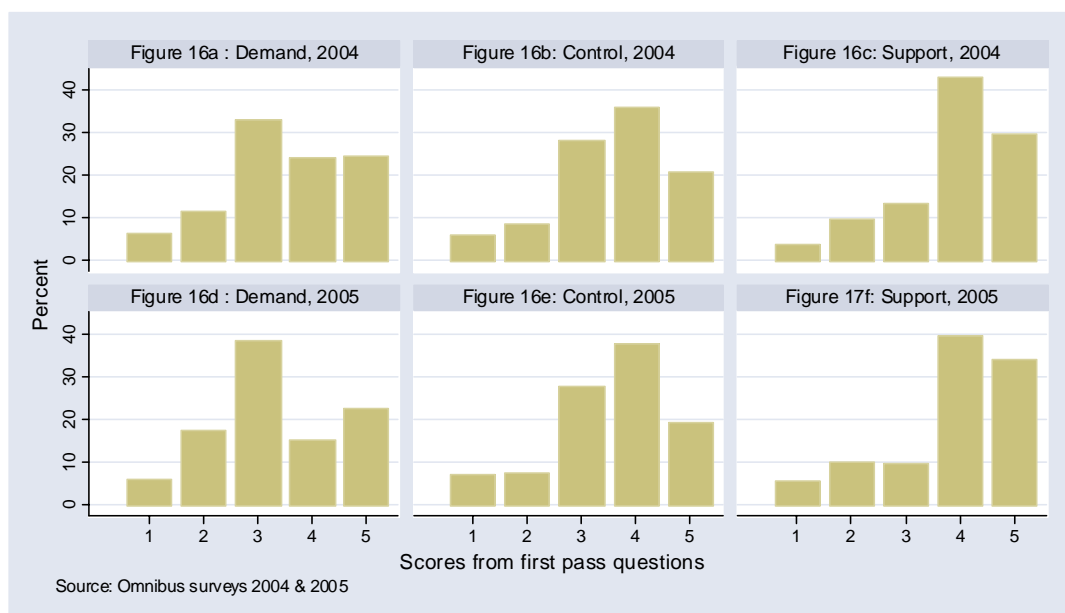
## 6.1.2 Demand, Control and Support

Scores for the first pass questions on Demand, Control and Support are plotted in Figure 15 (the non-target sectors) and Figure 16 (target sectors).

**Figure 15: Distribution of first pass question scores for Demand, Control and Support for non-target sectors by year**



**Figure 16: Distribution of first pass question scores for Demand, Control and Support for target sectors by year**



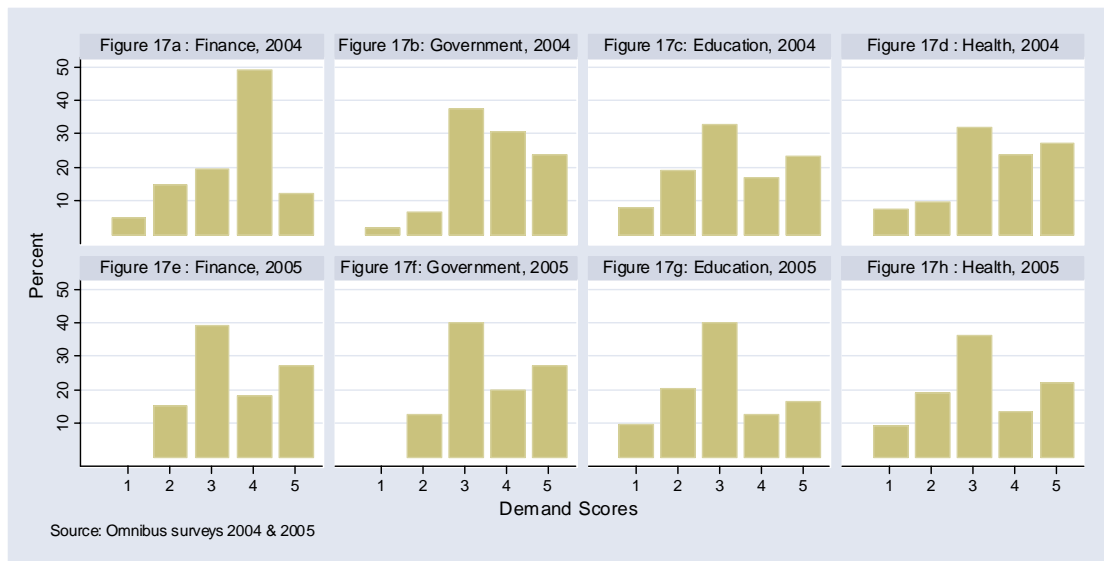
The differences between target and non-target sectors were formally assessed using statistical tests for 2004 (results given in Table D17) and 2005 (results given in Table D18), and tests were also used to assess for significant changes within each standard between 2004 and 2005.

The non-target sectors had significantly higher Demand and Control scores than the target sectors in both 2004 and 2005 indicating better working conditions with respect to these standards in non-target sectors. The target sectors had higher Support scores in 2004, however from 2004 to 2005 the scores in the non-target sectors increased, and in 2005 there was no longer a difference between target and non-target sectors.

A more detailed analysis of the target sectors was performed to assess any differences in scores between the four target sectors for both 2004 and 2005, and to assess whether there was evidence to suggest that scores were changing in any of the four sectors over time.

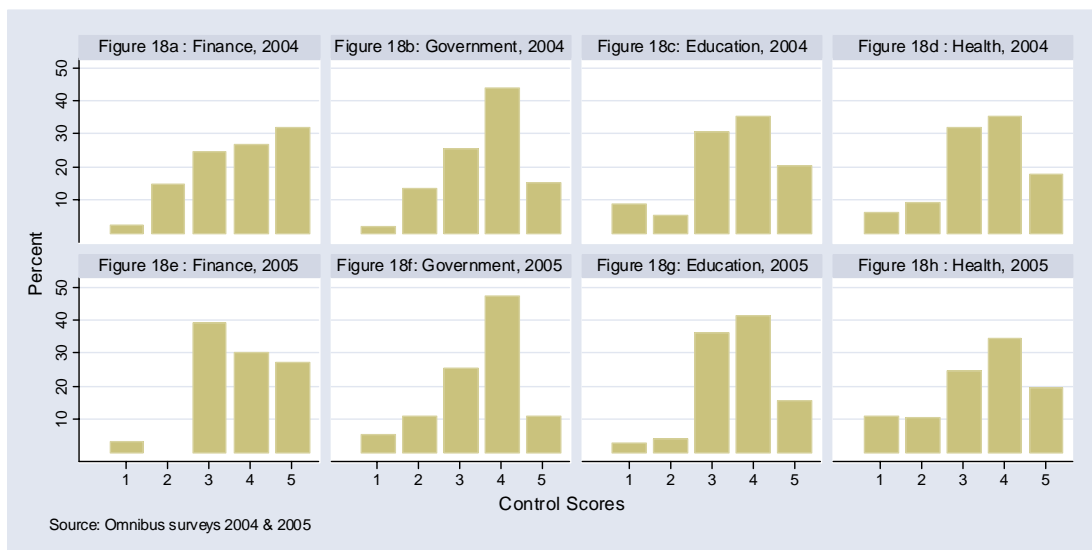
Responses to a first pass question on Demand are given for the four target sectors in Figure 17.

**Figure 17: Distribution of Demand scores for target sectors by year**



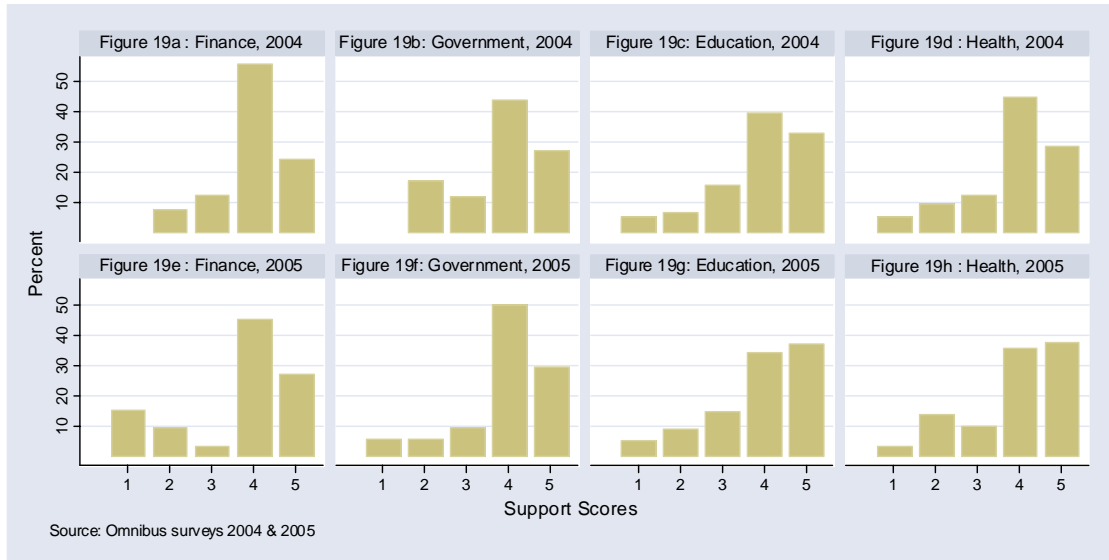
Responses to a first pass question on Control are given for the four target sectors in Figure 18.

**Figure 18: Distribution of Control scores for target sectors by year**



Responses to a first pass question on Control are given for the four target sectors in Figure 19

**Figure 19: Distribution of Support scores for target sectors by year**



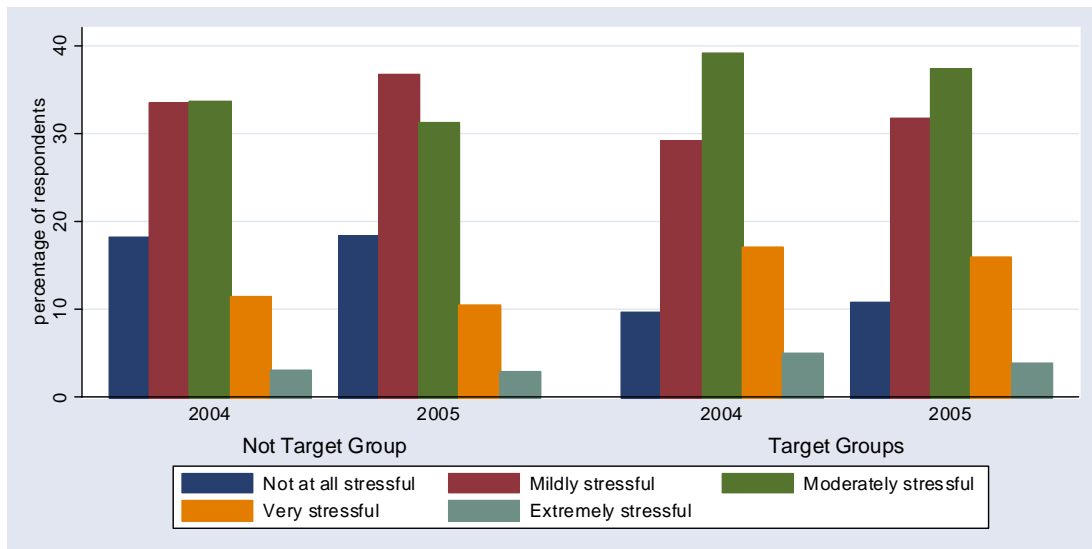
The analysis by sector of the first pass questions, found that in terms of Control and Support, the four sectors had comparable scores for both 2004 and 2005. Moreover, there was no evidence to suggest that Control or Support scores had improved from 2004 to 2005 for any of the target sectors. However, there was evidence of differences in Demand scores, with the Health sector having significantly worse (lower) Demand scores in 2005 than in 2004, and the Education and Health sectors having worse (lower) Demand scores than the Finance and Government sectors in 2005.

## 6.2 STRESSFULNESS

### 6.2.1 Stress levels

Responses to the question on how stressful respondents found their workplace to be are shown in Figure 20 by target/non-target group and by year.

**Figure 20: Stress level by target/non-target sector and by year**



Those respondents working within the target sectors had, in general, higher stress levels than those working in the non-target sectors. There was some evidence to suggest that stress levels were changing over time in both target and non-target sector; there was no change in the proportions of respondents answering 'Not at all stressful', 'Very stressful' and 'Extremely stressful' however there were differences between 2004 and 2005 in the 'Mildly stressful' and 'Moderately stressful' responses, for both target and non-target sectors. In the non-target sectors the largest proportion of respondents reported that their work was 'Mildly stressful' in 2005 whereas the largest proportion reported their work was 'Moderately stressful' in 2004. The largest proportion of respondents who worked within the non-target sectors reported that their work was 'Moderately stressful' in both 2004 and 2005 however if the current trend were to continue in 2006 the largest proportion of respondents would work within a 'Mildly stressful' environment.

## 6.2.2 Initiatives to reduce stress

The percentages of respondents from the target and non-target sectors who were aware/unaware of initiatives to reduce stress are tabulated in Table 8 for 2004 and 2005.

**Table 8: Initiatives to reduce stress by target and non-target sectors**

Sector	2004		2005	
	Yes	No	Yes	No
Target	47.1	52.9	42.1	57.9
Non-target	29.2	70.8	31.5	68.5

The percentages of respondents who were aware/unaware of initiatives to reduce workplace stress for each of the 4 target sectors are tabulated in Table 9 for 2004 and 2005.

**Table 9: Initiatives to reduce stress by target sectors**

Sector	2004		2005	
	Yes	No	Yes	No
Finance	33.3	66.7	34.6	65.4
Government	46.3	53.7	34.6	65.4
Education	54.9	45.1	0.5	0.5
Health	45.2	54.8	42.8	57.2

Initiatives to reduce stress were far more prevalent within the target sectors than the non-target sectors in both 2004 and 2005 and there was no evidence to suggest that the prevalence of initiatives to reduce stress was changing over time. Table 9 appears to show some variability in the prevalence of initiatives to reduce stress in the different target sectors, however these differences were not significant.

### 6.2.3 Discussion of stress with line manager

The percentages of respondents from the target and non-target sectors who had/had not discussed stress with a line manager are tabulated in Table 10 for both 2004 and 2005.

**Table 10: Whether discussed stress with line manager, by target and non-target sectors**

Sector	2004		2005	
	Yes	No	Yes	No
Target	47.5	52.5	44	56
Non-target	30.8	69.2	33.3	66.6

The proportions of respondents who had/had not discussed stress with a line manager for each of the 4 target sectors are tabulated in Table 11 for 2004 and 2005.

**Table 11: Whether discussed stress with line manager, by target sectors**

Sector	2004		2005	
	Yes	No	Yes	No
Finance	42.1	57.9	30.3	69.7
Government	42.2	57.8	47.1	52.9
Education	45.9	54.1	44	56
Health	54.2	45.8	48.4	51.6

Stress was discussed with a line manager in the target sectors more frequently than in the non-target sectors in both 2004 and 2005 and there was no evidence to suggest that the prevalence of discussions with a line manager was changing over time. There were no differences between the four target sectors.

## 7 DISCUSSION

This report presents and analyses responses from HSE modules relating to psychosocial working conditions which may affect work related stress, included in the March and April Omnibus surveys in 2004 and 2005. The first of the surveys was run prior to the launch of the Stress Management Standards in November 2004, the latter survey approximately 4 months after the launch. A previous HSE report (HSE (2004b)) assessed responses from 2004 alone, and provided a benchmark for the Management Standards prior to the official launch. The focus of the current report was primarily to assess what improvements, if any, had taken place since spring 2004.

In all the report had three objectives:

- To analyse the data from the 2005 Omnibus survey, calculating the scores for the six Management Standards, devised by MacKay *et al.* (2004), and analyse the responses from the questions on stress.
- To compare responses from the 2004 and 2005 surveys in order to test for changes in Management Standards scores, stress levels, prevalence of discussions with a line manager about stress and the initiatives to reduce stress in the workplace.
- To assess how the target sectors of Health and Social Work; Public Administration and Defence; Education; and Financial Intermediation compared with one another, and with the non-target sectors.

In order to achieve the latter of these objectives a recoding from the four digit SOC codes recorded by ONS to the top level SIC codes was required. It was not possible to perform an exact recoding since the four digit SOC codes were not precise enough to allow for this. The procedure used in this report was to adopt a classification scheme based on probabilities derived from the 2001 census.

Some misclassification errors were inevitable in any reclassification scheme. However, in the case of the general comparison between target and non-target sectors, the analysis based on the reclassification seems to be robust to errors, partly due to the relatively large numbers in both target and non-target sectors but also since by grouping the 4 sectors together the probability of misclassification was, in general, much reduced. The differences between target/non-target sectors that were found after hypothesis tests were robust to misclassification errors, especially for highly significant results (indicated by very small p-values). The comparison of the four target sectors was based on far smaller sample sizes, especially for the Finance and Government sectors, and the probability of misclassification error was greater than in the more general analysis. Resultantly, the hypothesis tests performed were sensitive to misclassification error and the results from the by sector analysis should be viewed with some caution.

### 7.1 MANAGEMENT STANDARDS

Due to problems encountered in the implementation of the survey in 2005, it was not possible to complete a thorough analysis of all six Management Standards. However, for the three Management Standards that it was not possible to calculate, the first pass questions have been used as an approximation in order to provide indications about the current working climate with respect to the Management Standards. Results based solely upon these need to be viewed with some caution.

The results for the Role, Relationships and Change Management Standards were similar to those with the corresponding study from 2004 reported in report HSE (2004b), which is not entirely unexpected given that the formal launch of the standards was not until November 2004, four months prior to the 2005 survey. However, despite the overall similarity of the responses from the 2004 and 2005 surveys, there was evidence that small improvements had already been made with respect to the Change and Relationship standards. The improvements in working conditions were not global; the proportion of respondents working in the most unfavourable conditions has seen no change from 2004 to 2005 for the Role, Relationships or Change Standards.

Significant differences were found in the general comparison between the target and non-target sectors in both 2004 and 2005 with respondents in the target sectors working, in general, in less favourable conditions. This was not unexpected given that the target sectors were selected because they had the highest absence rates from work related stress as found in the 2001/2002 Self Reported Work Related Illness (SWI) survey. There was no evidence that working conditions were improving over time in the target sectors relative to the non-target sectors. The detailed analysis of the four target sectors found that working Relationships had improved from 2004 to 2005 in the Finance sector. Although this analysis was based upon only a small number of respondents, the improvement was highly significant in this sector.

The first pass questions for the Demand, Control and Support were compared with the responses to the first pass questions from the spring 2004 survey. Responses to these indicated that some aspects of Support had improved significantly from 2004 to 2005, and these may be an indication that Support has improved with respect to the Management Standards scores. However, as noted previously, the significant differences that were found in responses to the first pass questions do not always imply differences in the Management Standards scores. Responses to the first pass questions on Demand and Control were very similar to those from 2004. The first pass questions once again indicated that the proportion of respondents working in the most unfavourable conditions, with scores of less than 2, has seen no change from 2004 to 2005.

A comparison of the responses to the first pass questions by target/non-target sector was performed. For all three first pass questions the non-target sectors scored higher in 2004. The poorer working conditions in the target sectors were consistent with the target sectors having higher absence rates from work related stress in the 2001/2002 SWI survey. There was no evidence of improvements in the target sectors with respect to the Demand and Control standards however there was evidence of substantial improvements in terms of the Support standard.

Overall, there have been some small improvements with respect to the psychosocial working conditions from 2004 to 2005. The forthcoming survey in Spring 2006, run 16 Months after the launch of the management Standards, will no doubt be a better indicator of trends.

## **7.2 STRESS**

The responses to the three specific questions on stress that were included in the 2004 and 2005 surveys were broadly similar. In 2004, approximately 16.5% of respondents were working in a very or extremely stressful job and approximately 16% in a job that was not at all stressful, whereas in 2005 approximately 15% of respondents from both March and April surveys were working in a very or extremely stressful job and approximately 16.5% of respondents were working in a job that was not at all stressful. However, whilst the differences in the extreme categories of stress were small there was a noticeable change from 2004 to 2005 in the 'Mildly stressful' and 'Moderately stressful' classifications, with the largest proportion of respondents

working in a 'Mildly stressful' environment in 2005. The responses to this question were consistent with the responses to the Management Standards questions; when improvements were made from 2004 to 2005 those working in the worst conditions did not seem to benefit. The results from the question on stress were consistent with 2001/2002 SWI survey, where the respondents from the target sectors were working in a more stressful environment.

The prevalence of initiatives to reduce stress and discussions of stress with a line manager was unchanged from 2004 to 2005. In both years of the study these were more prevalent in the target sectors than the non-target sectors, with initiatives to reduce stress and discussions about stress with a manager both about 50% more prevalent in target sectors relative to the non-target sectors. It seems reasonable to conclude that both initiatives to reduce stress and discussions about stress with a line manager were in reaction to excessive stress rather than as a preventative measure.

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## APPENDIX A

### *NATIONAL STATISTICS OMNIBUS SURVEY – March/April 2005*

#### Filter Question

Earlier, you indicated that you were self-employed. Some self-employed people may be working like employees, for example they may work for the same company for a long period of time, be managed by employees of that company and work with others in that company as work colleagues. Even though you are self-employed, do you work as though you are an employee?

- (1) Yes
- (2) No
- (3) Don't know

The following questions are asked on behalf of the Health and Safety Executive. I am going to read out some statements about working conditions in your current (main) job. Each statement relates to your current job and asks you to indicate on a scale of never to always how often certain circumstances or conditions apply at work.

I am clear what is expected of me at work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

I am clear about the goals and objectives for my department at work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

I know how to go about getting my job done at work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

There is friction or anger between colleagues at work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

I am clear what my duties and responsibilities are at work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

I understand how my work fits into the overall aim of the organisation.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

I am subject to personal harassment in the form of unkind words or behaviour at work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

I am subject to bullying at work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

I have unrealistic time pressures at work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

I have a choice in deciding how I do my work.

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) Often
- (5) Always

Now, I am going to read some statements about your work or workplace in your current (main) job and would like you to indicate how strongly you agree with these statements on a scale of strongly disagree to strongly agree.

Staff are consulted about change at work.

- (1) Strongly disagree
- (2) Tend to disagree
- (3) Neutral
- (4) Tend to agree
- (5) Strongly agree

Relationships at work are strained.

- (1) Strongly disagree
- (2) Tend to disagree
- (3) Neutral
- (4) Tend to agree
- (5) Strongly agree

I have sufficient opportunities to question managers about change at work.

- (1) Strongly disagree
- (2) Tend to disagree
- (3) Neutral
- (4) Tend to agree
- (5) Strongly agree

When changes are made at work, I am clear how they will work out in practice.

- (1) Strongly disagree
- (2) Tend to disagree
- (3) Neutral
- (4) Tend to agree
- (5) Strongly agree

My line manager encourages me at work.

- (1) Strongly disagree
- (2) Tend to disagree
- (3) Neutral
- (4) Tend to agree
- (5) Strongly agree

In general, how do you find your job?

- (1) Not at all stressful
- (2) Mildly stressful
- (3) Moderately stressful
- (4) Very stressful
- (5) Extremely stressful

(As far as you are aware...) has your employer in your main job undertaken any initiative in the last 12 months to reduce stress at work?

- (1) Yes
- (2) No
- (3) Don't know

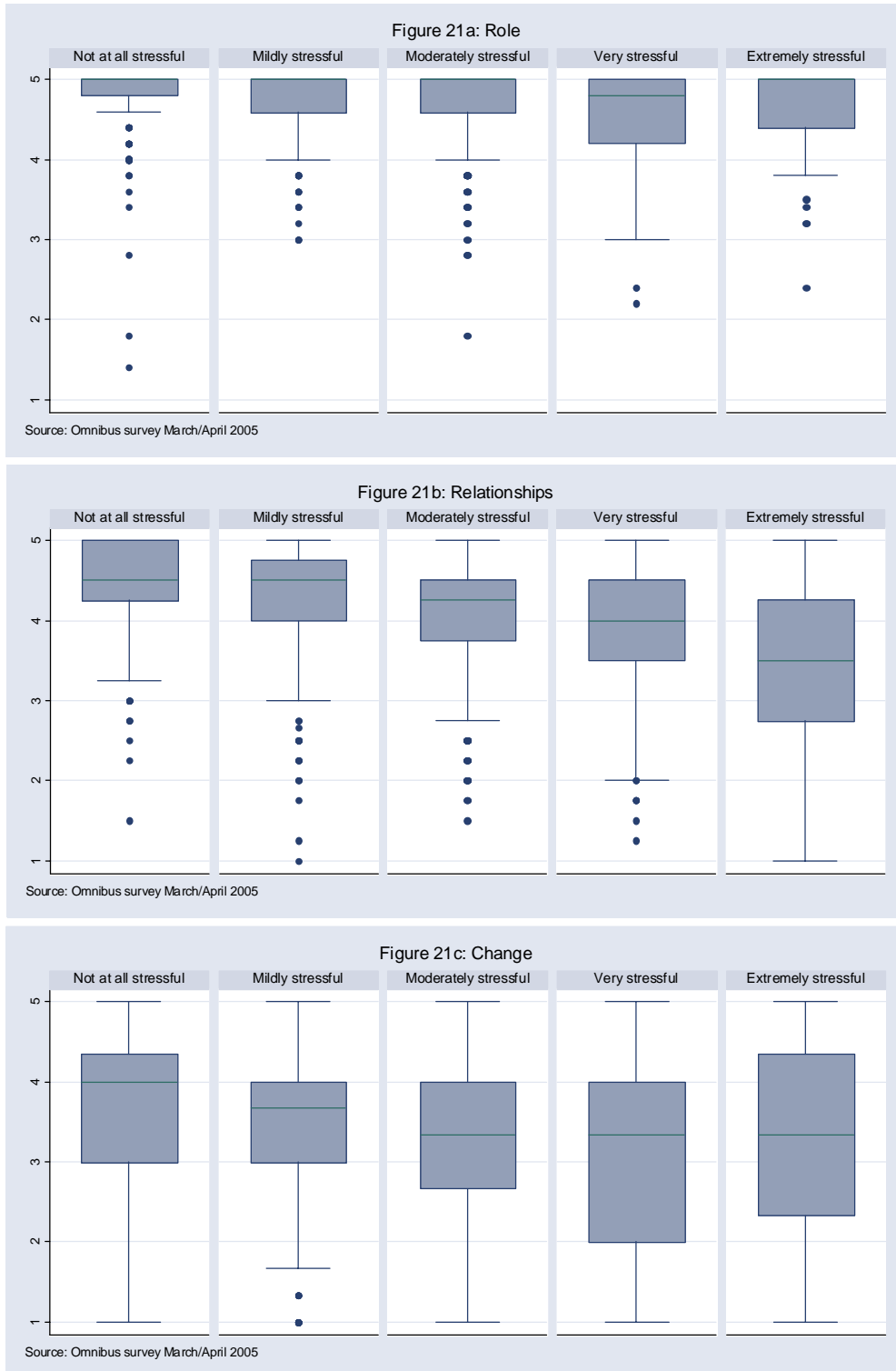
In the last 12 months, has your line manager discussed with you the stresses in your job?

- (1) Yes
- (2) No
- (3) Don't know

## APPENDIX B

Plots of the Role, Relationships and Change scores, by stress level are shown in Figure 21.

**Figure 21: Role Relationships and Change scores by the levels of stress**



The boxplots shown in figure 21 are an efficient way of displaying heavily skewed distributions. The graphs can comprise of up to 4 different components. The first component that can be seen for each of the levels of stress and for all three working conditions is the median score, which is represented by the green horizontal line. The horizontal lines forming the edges of the shaded box region represent the 25th and 75th percentiles of the score distribution. For very skewed distributions, the median can coincide with one of the quartiles. The difference between the 25th and 75th percentiles is known as the inter-quartile range; this is a useful measure of variability for skewed distributions and the larger the inter-quartile range is the greater the variability about the median. The third component of the graph is the vertical lines extending from the edges of the boxes. The lower of the vertical lines represents the minimum response unless there are outliers/unusual responses (indicated by the circles), in which case the vertical line terminates at 1.5 times the inter-quartile range. The upper of the vertical lines has a similar interpretation. These latter two features may not always be present.

Figure 21a shows that the median, upper quartile and maximum score all coincide at a score of 5, for all levels of stress except the 'Very stressful' category. The distribution of scores is highly negatively skewed for all 5 levels of stress. From figure 21a it is not clear that Role scores decrease with increased levels of stress, however the application of a non-parametric trend test for ordinal groups, developed by Cuzick (1985), showed there was a significant decreasing trend in Role scores across the 5 levels of stress.

Figure 21b shows Relationship scores across the 5 levels of stress. These show greater variability than Role scores across all five levels of stress. The variability of Relationship scores within the lowest three levels of stress was comparable, with increasing variability in the 'Very stressful' group and more variability again in the 'Extremely stressful' group. A very clear trend was apparent from figure 21b, with Relationship scores decreasing with increased stress levels. A formal assessment of trend using Cuzick's trend test showed that there was a significant decreasing trend across the 5 levels of stress.

Figure 21c shows that in general, change scores decrease as the stress level increases. There was increasing variability in the responses as stress level increased, and a clear decreasing trend in Change scores with increasing stress levels. Cuzick's trend test showed that there was a significant decreasing trend across the 5 levels of stress.

## APPENDIX C

**Table C1: Median scores for Management Standards by year**

Role		Relationships		Change	
2004	2005	2004	2005	2004	2005
5	5	4.25	4.25	3.333	3.667

**Table C2: Median scores for Management Standards by year**

	Role		Relationships		Change	
	2004	2005	2004	2005	2004	2005
Male	5	5	4.25	4.25	3.667	3.667
Female	5	5	4.25	4.25	3.333	3.667
≤ 40	5	5	4.25	4.25	3.333	3.667
> 40	5	5	4.25	4.25	3.667	2.667
Non-Manual	5	4.8	4.25	4.25	3.333	3.667
Manual	5	5	4.25	4.25	3.333	3.667

**Table C3: Median scores for first pass questions by year**

Demand		Control		Support	
2004	2005	2004	2005	2004	2005
4	3	4	4	4	4

**Table C4: Median scores for first pass questions by year**

	Demand		Control		Support	
	2004	2005	2004	2005	2004	2005
Male	3	3	4	4	4	4
Female	4	3	4	4	4	4
≤ 40	4	4	4	4	4	4
> 40	4	3	4	4	4	4
Non-Manual	3	3	4	4	4	4
Manual	4	4	4	3	4	4

**Table C5: Median stress scores by year**

Stress	
2004	2005
3	2

**Table C6: Median stress scores by year**

	Stress	
	2004	2005
Male	3	3
Female	2	2
≤ 40	3	2
> 40	3	2
Non-Manual	3	3
Manual	2	2

**Table C7: Median Management Standard scores for target and non-target sectors**

	Role		Relationships		Change	
	2004	2005	2004	2005	2004	2005
Target	5	5	4.25	4.25	3.333	3.333
Non- target	5	5	4.25	4.25	3.667	3.667

**Table C8: Median Management Standard scores for target and non-target sectors**

	Role		Relationships		Change	
	2004	2005	2004	2005	2004	2005
Finance	4.7	4.8	3.875	4.25	3.333	3.333
Government	4.8	4.6	4.25	4.25	3.333	3
Education	5	4.8	4.25	4.25	3.667	3.5
Health	5	5	4	4	3.333	3.333

**Table C9: Median first pass question scores for target and non-target sectors**

	Demand		Control		Support	
	2004	2005	2004	2005	2004	2005
Target	3	3	4	4	4	4
Non- target	4	4	4	4	4	4

**Table C10: Median first pass question scores for target and non-target sectors**

	Demand		Control		Support	
	2004	2005	2004	2005	2004	2005
Finance	4	3	4	4	4	4
Government	4	3	4	4	4	4
Education	3	3	4	4	4	4
Health	4	3	4	4	4	4

**Table C11: Median stress scores, by year**

	Stress	
	2004	2005
Target	3	3
Non-target	2	2

## APPENDIX D

**Table D1: Tests for differences in Management Standards by year**

	Role	Relationships	Change
Mann Whitney test	p = 0.688	p = 0.068	p = 0.017

**Table D2: Mann Whitney tests for differences in Management Standards by year**

	Role	Relationships	Change
Male	p = 0.5071	p = 0.4125	p = 0.1341
Female	p = 0.2170	p = 0.0952	p = 0.0617
≤ 40	p = 0.2272	p = 0.1791	p = 0.1376
> 40	p = 0.5586	p = 0.2394	p = 0.0619
Non-Manual	p = 0.4504	p = 0.0773	p = 0.1588
Manual	p = 0.4910	p = 0.4438	p = 0.0508

**Table D3: Tests for differences in first pass questions by year**

	Demand	Control	Support
Mann Whitney test	p = 0.808	p = 0.172	p = 0.003

**Table D4: Mann Whitney tests for differences in first pass questions by year**

	Demand	Control	Support
Male	p = 0.1347	p = 0.6456	p = 0.1356
Female	p = 0.0891	p = 0.1267	p = 0.0065
≤ 40	p = 0.5660	p = 0.8292	p = 0.0357
> 40	p = 0.3658	p = 0.0396	p = 0.0366
Non-Manual	p = 0.2393	p = 0.0380	p = 0.0007
Manual	p = 0.0948	p = 0.4955	p = 0.8023

**Table D5: Test for differences in stress levels by year**

	Stress
Mann Whitney test	p = 0.0653

**Table D6: Mann Whitney tests for differences in stress levels by year**

	Stress
Male	p = 0.1268
Female	p = 0.2820
≤ 40	p = 0.0105
> 40	p = 0.9449
Non-Manual	p = 0.0356
Manual	p = 0.2094

**Table D7: Test for differences in initiatives to reduce stress levels by year**

	Initiatives to reduce stress
Chi-squared test	p = 0.654

**Table D8: Chi squared tests for differences in initiatives to reduce stress by year**

	Initiatives to reduce stress
Male	p = 0.620
Female	p = 0.558
≤ 40	p = 0.266
> 40	p = 0.941
Non-Manual	p = 0.048
Manual	p = 0.595

**Table D9: Test for differences in discussion of stress with line manager by year**

	Discussed Stress with line manager
Chi-squared test	p = 0.890

**Table D10: Chi squared tests for discussion of stress with line manager by year**

	Discussed Stress with line manager
Male	p = 0.906
Female	p = 0.974
≤ 40	p = 0.610
> 40	p = 0.763
Non-Manual	p = 0.490
Manual	p = 0.635

**Table D11: Tests for differences in Management Standard scores between target and non-target sectors, 2004**

	Role	Relationships	Change
Mann Whitney	p= 0.9505	p = 0.0078	p = 0.2279

**Table D12: Tests for differences in Management Standard scores between target and non-target sectors, 2005**

	Role	Relationships	Change
Mann Whitney	p = 0.0551	p = 0.0049	p = 0.0005

**Table D13: Mann Whitney tests for differences in Management Standard scores within target and non-target sectors by year**

	Role	Relationships	Change
Target sectors	p = 0.1771	p = 0.2961	p = 0.9412
Non-target sectors	p = 0.7806	p = 0.2077	p = 0.0095

**Table D14: Tests for differences in Management Standard scores between target sectors, 2004**

	Role	Relationships	Change
Kruskal Wallis	p = 0.1774	p = 0.1064	p = 0.5281

**Table D15: Tests for differences in Management Standard scores between target sectors, 2005**

	Role	Relationships	Change
Kruskal Wallis	p = 0.1959	p = 0.2103	p = 0.1343

**Table D16: Mann Whitney tests for differences in Management Standard scores within target sectors by year**

	Role	Relationships	Change
Finance	p = 0.3920	p = 0.0057	p = 0.4591
Government	p = 0.5318	p = 0.2946	p = 0.1637
Education	p = 0.2880	p = 0.6978	p = 0.6695
Health	p = 0.4958	p = 0.7992	p = 0.6539

**Table D17: Tests for differences in first pass questions between target and non-target sectors, 2004**

	Demand	Control	Support
Mann Whitney	p = 0.0255	p = 0.0071	p = 0.0030

**Table D18: Tests for differences in first pass questions between target and non-target sectors, 2005**

	Demand	Control	Support
Mann Whitney	p = 0.0000	p = 0.0002	p = 0.1815

**Table D19: Mann Whitney tests for differences in first pass questions within target and non-target sectors by year**

	Demand	Control	Support
Target sectors	p = 0.0122	p = 0.9234	p = 0.3357
Non-target sectors	p = 0.3270	p = 0.1404	p = 0.0021

**Table D20: Tests for differences in first pass questions between target sectors, 2004**

	Demand	Control	Support
Kruskal Wallis	p = 0.1249	p = 0.6762	p = 0.9130

**Table D21: Tests for differences in first pass questions between target sectors, 2005**

	Demand	Control	Support
Kruskal Wallis	p = 0.0175	p = 0.4860	p = 0.7495

**Table D22: Mann Whitney tests for differences in first pass questions within target sectors, by year**

	Demand	Control	Support
Finance	p = 0.9369	p = 0.8605	p = 0.5545
Government	p = 0.6620	p = 0.6686	p = 0.4770
Education	p = 0.1609	p = 0.8252	p = 0.7860
Health	p = 0.0078	p = 0.7873	p = 0.3023

**Table D23: Tests for differences in stress levels between target/non-target sectors**

	2004	2005
Mann Whitney	p = 0.000	p = 0.000

**Table D24: Tests for differences in stress levels within target/non-target sectors by year**

	Mann Whitney
Target sectors	p = 0.1738
Non-target sectors	p = 0.3292

**Table D25: Chi squared test for differences in prevalence of initiatives to reduce stress levels in target/non-target sectors**

	Initiatives to reduce stress
2004	p = 0.000
2005	p = 0.000

**Table D26: Chi squared tests for differences in prevalence of initiatives to reduce stress levels by year**

	Initiatives to reduce stress
Target sectors	p = 0.148
Non-target sectors	p = 0.255

**Table D27: Tests for differences in prevalence of initiatives to reduce stress levels within target sectors by year**

	2004	2005
Chi squared	p = 0.099	p = 0.205

**Table D28: Chi squared tests for differences in prevalence of discussion of stress with line manager in target/non-target sectors**

	Discussed stress with line manager
2004	0.000
2005	0.000

**Table D29: Chi squared test for differences in prevalence of discussion of stress with line manager by year**

	Discussed stress with line manager
Target sectors	0.298
Non-target sectors	0.217

**Table D30: Tests for differences in prevalence of discussion of stress with line manager within target sectors by year**

	2004	2005
Chi squared	p = 0.198	p = 0.288