**The effect of mental ill health on absence from work in different occupational classifications: analysis of routine data in the British Household Panel Survey**

**Running title: Mental health and absence from work.**

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All authors declare: no financial relationships with any organisations that might have an interest in the submitted work in the previous three years, no other relationships or activities that could appear to have influenced the submitted work.

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The data analysed in this paper is freely available in the British Household Panel Survey.

**Contributorship**

Will Whittaker conducted the analyses and wrote the report on which this paper is based. He was involved in discussions about the design of the study and interpretation of the findings. He revised the article and gave final approval of the version to be published.

Matt Sutton supervised the analysis of data in the BHPS. He was a grantholder on the study. He was involved in discussions about the conception and design of the study and interpretation of the findings. He revised the article and gave final approval of the version to be published.

Sara MacDonald was a grantholder on the study. She was involved in discussions about the conception and design of the study and interpretation of the findings. She revised the article and gave final approval of the version to be published.

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Jill Morrison was the Principal Investigator of the study. She led discussions about the conception and design of the study and interpretation of the findings. She wrote the paper and gave final approval of the version to be published. She will act as guarantor of the study.

**The effect of mental ill health on absence from work in different occupational classifications: analysis of routine data in the British Household Panel Survey**

**Running title: Mental ill health and absence from work.**


**Abstract**

**Objective**

Investigated relationship of mental ill health to absence from work in different occupational classifications.

**Method**

Examined sickness absence, mental health (GHQ-12), physical health, job characteristics and personal characteristics in 18 waves of the British Household Panel Survey.

**Results**

Overall sickness absence rate was 1.68%. Increased absence was associated with age >45, female gender, lower occupational classification and public sector employers. Decreased absence was associated with part-time working.

Scoring 4 or more on the General Health Questionnaire -12 item version (GHQ-12 caseness) was strongly associated with sickness absence.

Public employers had highest rates of sickness absence. GHQ-12 caseness had largest impact on absence in the public and non-profit sectors while physical health problems impacted more on the private sector.

**Conclusions**

GHQ-12 caseness is strongly associated with increased absence in all classifications of occupations. Differences between sectors require further investigation.

Word count of abstract: 135

**Statement of clinical significance**

This study examined 18 years of information from the British Household Panel Survey and found that people with probable mental ill health were four times more likely to have been off work due to illness in the previous week. Identifying and managing mental ill health may help to reduce absenteeism.

Word count: 50 words

## Introduction

Absence from work because of ill health represents a major cost for employers and national economies. In the United Kingdom (UK), for example, the cost of sickness absenteeism and worklessness associated with working age ill health is estimated as more than £100 billion annually.[1] At a time of financial austerity across many western economies, governments have sought to implement policies that are intended to help people to stay in work or return to work quickly after periods of ill health. The UK government, for example, is introducing changes to sickness related financial benefits and qualifying medical examinations to ensure that no-one who is fit to work is claiming sickness benefit.[2]

In the UK, Employment and Support Allowance (formerly Incapacity Benefit) is paid for those who are unable to work due to health reasons.[2] The proportion of people claiming long term incapacity benefit because of mental health problems has been increasing in the UK and it is estimated that 40% of days lost from work each year are due to mental health problems.[3] Concern has been expressed that changes in the sickness benefit system may impact less favourably on people with mental ill health than on those with physical ill health because their health problems are more difficult to assess. [4]

The Whitehall II study found an inverse association between employment grade and morbidity i.e. people in lower status jobs reported more chronic health problems and worse self-perceived health status than those in higher grade jobs.[5] Later analyses demonstrated that sickness absence related to psychiatric illness was more frequent in lower employment grades than higher employment grades.[6]

We wanted to investigate in more detail how probable mental ill health is related to absence from work and to find out if particular occupational classifications and employment sectors are associated with higher levels of absence when other factors are controlled for. We thought that, if we found that some sectors are better able to keep people in work while they are sick, this may help to inform the design of interventions aiming to keep people in work.

**Methods**

We used the British Household Panel Survey (BHPS).[7] This is an annual survey consisting of a nationally representative sample of around 10,000 households which were recruited in 1991 and have been interviewed each year. If any of the members of the sample form new households, they are followed and the members of the new household are also interviewed. Since it began, extension samples of households in Scotland, Wales and Northern Ireland have been added. It now involves 18 waves to 2008.

The BHPS includes detailed socio-economic and employment questions as well as several health related questions.

*Measuring sickness absence*

Survey respondents are asked *"Did you do any paid work last week - that is in the seven days ending last Sunday either as an employee or self employed?"* If they reply "no", they are asked "*Even though you weren't working, did you have a job that you were away from last week?"* If "yes", they are then asked *"What was the main reason*

*you were away from work last week?"*. This reflects spells of absence from work that last at least a week but no more than 6 months.

*Measuring mental health*

The BHPS uses the General Health Questionnaire 12 – item version (GHQ-12) as a measure of psychosocial distress.[8] Goldberg and colleagues reported an overall sensitivity of 83.4% and specificity of 76.3% of their instrument for diagnosing psycho-social distress using an average threshold of 2/3 across all of the centres in the 15 countries involved in their original study. We selected a more conservative cut-off score of 4 or more to indicate those respondents most likely to have psychosocial distress (GHQ caseness).

*Job characteristics*

Occupations are defined in the BHPS from the International Standard Classification of Occupation.[10] To determine employing organisation, we used "*Which of the types of organisations on this card do you work for (in your main job*)?". We categorised individuals as employed in the public sector, the private sector, the non-profit sector (voluntary sector and other) and the self-employed. Other employment related information included whether the position was part-time (less than 30 hours), and how many employees were employed in the organisation.

*Personal characteristics*

We included the following other potentially relevant factors in sickness absence: gender; age; marital status; and presence and number of children in the household.

*Analysis*

We used a random-effects logistic regression model for sickness absence, to allow for repeated observations on the same individuals.

As the estimated effect of GHQ-12 caseness may pick up the effect of other health conditions with which it is correlated, we included a dummy variable for a range of physical health problems (defined in the survey as “arms/legs, sight, hearing, skin, chest, heart/blood, liver, diabetes, epilepsy, and migraine”).

We examined whether the effect of caseness on sickness absence varied by occupational classification and employment sector. Since occupation classification and employment sector are correlated - for example some occupational classifications may be more concentrated in the public sector - we controlled for occupational classification when looking at the effect of sector, and controlled for sector when examining the effect of occupational classification. We did not have sufficient data to allow us to analyse the effect of caseness on sickness absence in relation to combinations of sector and occupational classification.

To investigate the effects of caseness within Social Occupational Class and employing sector groups we also modelled the log odds-ratio of sickness for those with and without caseness.

The unadjusted log odds-ratios gave the crude differences in sickness absence by caseness for each occupational class or employing sector. These are presented alongside the adjusted log odds-ratios obtained when we included our other additional covariates in the model and estimated random-effects logistic regression models.

To examine whether the effect of caseness varied by occupational classification (and employment sector) we also estimate the differences between occupational classification (and employment sector) in the effects of caseness.

The analysis was performed for caseness and physical health conditions to highlight whether there appeared to be differences in sickness absence between health problems.

**Results**

The full sample included 238,922 person-years/observations and 143,936 were in employment. Of these, there were 7,588 (5.27%) observations where respondents reported being off work in the previous week. Of these, 2,362 (31.13%) were for being 'sick or injured'. 3,243 (42.74%) were on holiday or other leave, 1,014 (13.36%) were on maternity leave, and the remainder were on strike, laid-off, or off for other and personal reasons. We excluded those observations when people were off work for reasons other than sickness or injury or were working but were over retirement age, resulting in a sample of 136,816 observations, with 2,340 observations of sickness absence (1.71%).

111,677 observations gave complete data on job status (including Standard Occupational Classification, sector of employment, employer size, and part-time status), personal characteristics (marital status, age, children, gender), and health problems (GHQ score and physical health problems). In the sample we analysed, the sickness absence rate was 1.68% (1,871/111,677).

*Sickness absence and personal characteristics*

To calculate log odds-ratios adjusted for personal characteristics, we estimated random effects logistic regression models for sickness absence. The first model did not include interactions between employing sector or occupational class by types of health condition.

Table 1 here

We found no significant differences over time (Table 1). There was a clear positive gradient in sickness absence rates with age, statistically significant beyond the age of 45. There were no significant differences in sickness absence by marital status. Females were 28% more likely to be off work sick than males, but we found no significant difference in sickness absence rates by the presence or number of children under 16 years of age.

Those in part-time employment were approximately 17% less likely to have been off work sick in the last week. Sickness absence rates increased with size of employer. Those employed in organisations with over 500 staff were over 55% more likely to have been off sick in the past week than those employed in a small organisation of between one and 24 employees.

Rates of sickness absence were substantially higher for those who reported GHQ-12 caseness (odds ratio 4.41, 95% confidence interval (C.I.) 4.24 – 5.24 . Sickness absence rates were also higher for those with a physical health condition (2.11, 95% C.I 1.89 to 2.36).

*Sickness absence and GHQ-12 caseness by Social Occupational Classification*

When we modelled the log odds-ratio of sickness for those with and without health problems, the crude rates showed a gradient in sickness absence with lower occupational classes having higher rates of sickness absence (Table 2) . For example, the percentage of people off sick in the previous week among respondents whose jobs were classified as Professional was 0.54% whereas 1.85% of Plant and Machine Operatives were off sick in the previous week.

Table 2 here

This gradient persisted whether GHQ-12 caseness was present or not. For example, 3.29% of people who had GHQ-12 caseness and Professional jobs were off sick in the previous week compared with 8.10% who had GHQ-12 caseness and were Plant and Machine Operatives. The unadjusted log odds-ratio gave the impact of caseness on sickness absence by occupational class. For example, the log odds-ratio of 3.97 for Managers and Senior Officers indicated that those within this group with caseness were 397% more likely to have been off work sick than those without caseness. The pattern of log odds-ratios was robust to adjustment for other factors.

We found no significant differences in the effects of caseness on Occupational Class.

*Sickness absence and physical health by Standard Occupational Classification*

For respondents with no physical health condition, there was a similar occupational gradient as observed above (Table 3). The unadjusted log odds-ratios were lower than those for GHQ-12 caseness, and when adjusted, each was further reduced.

We found no significant differences in the effects of physical health problems on sickness absence across Occupational Classification (Table 3)

Table 3 here

*Sickness absence and GHQ-12 caseness by type of employing organisation*

Public sector organisations have the highest rates of sickness absence and the self-employed have the lowest rates (Table 4). The effect of caseness was greater for those employed in the public and non-profit sectors, for example, the odds ration of 1.28 and 2.19 indicates that employees with caseness were 28% and 219% more likely to have been off sick in the previous week in the public and nonprofit sectors than the private sector respectively. This finding persisted when we divided the respondents by GHQ-12 caseness. Caseness had the largest impact on nonprofit employment. When additional covariates were included, the effect of caseness increased for all employer types.

We found caseness had a significantly higher effect on sickness absence for those employed in public or non-profit sectors compared to the private sector (Table 4).

Table 4 here

*Sickness absence and physical health by type of employing organisation*

Although public sector employees had the highest rate of sickness absence, the effect of physical health conditions was smallest amongst public sector employees (230% more likely to be off sick than those without physical health conditions, compared to 281% and 264% for private and the self-employed respectively) (Table 5). Each log odds-ratio declined when we included other covariates.

We found no significant difference in the effects of physical health problems on sickness absence across employing sector (Table 5).

Table 5 here

**Discussion**

*Strengths and weakness*

The large size, longitudinal nature and relatively consistent method of recording data in the British Household Panel Survey are considerable strengths of this source of

data. A previous international comparison of sickness absence behaviour in nine European countries including the UK was limited because it lacked information about time variation for each country.[10] The use of the BHPS allowed us to look at sickness absence in the UK over 18 years.

We only observed sickness absence where the individual had done no work for an entire week. We were not able to analyse data for people who had multiple short spells of less than a week of sickness related absence.

The BHPS does not identify the cause of sickness absence only that respondents had reported physical illness or scored positive on the GHQ-12 in the survey. It is likely that some of the absence among people who scored positive on the GHQ-12 was for intercurrent physical illness and conversely, that some of the people who reported physical health problems were absent for temporary psychological problems. We believe, however, that given the size of the dataset, our findings are robust.

*Key findings and comparison with previous literature*

Older people and women were more likely to be off sick, although women's absence was not associated with having children. The gender difference in sickness absence has been confirmed in numerous studies. For example, women in Norway have 40 – 50% more absence than men.[11] Women are known to have more morbidity than men and it has been conjectured that they also have the additional burden of family responsibilities. However, a further paper from the same Norwegian researcher found only a weak association between having children and absence from work[12] and we found no association in our study. In a study comparing sickness absence in nine

countries, women had higher rates of sickness absence than men in most of the countries and absence also increased with age[10]. The Whitehall II study reported that sickness absence related to psychiatric illness was more frequent in women (and particularly divorced women) and in widowed and single men.[6]

We found that people working part-time were less likely to be off sick. In the study in nine countries, overall absence increased with hours worked but there were some interesting differences between countries[9]. Increased absence with hours worked was not found in Canada, the Czech Republic, France or Luxembourg and the association with increased hours was stronger in Sweden than in the UK which was similar to Spain and Switzerland. Part-time employment may result in lower sickness absence because the work is less onerous or the individual has more time to recover at home rather than at work. Alternatively, part-time work may offer less generous sickness absence pay making periods of sickness more costly to the individual.

We found that people employed by public sector organisations had higher rates of sickness absence than private sector employed individuals, and the self-employed have the lowest rates of all. We have no information on whether the level of sickness absence is more appropriate in one sector. Public employers include the National Health Service. There are several possible explanations for these observed differences. For example, organisations which recruit more women or which seek not to discriminate against people with known health problems will be more likely to have higher sickness absence rates.

Those with GHQ-12 caseness indicating probable mental ill health were about four times as likely to have been off sick in the past week. The effect of GHQ-12 caseness differed significantly between private and public and non-profit sector employees. Public and non-profit sector employees with caseness were 28% and 219% more likely to have been off sick than private sector employees with caseness. There was no significant difference found between the self-employed and the other groups. Other research has demonstrated an association between mental ill health and absenteeism. For example, one study from the United States demonstrated that psychiatric disorders were associated with substantial numbers of days lost from work, with pure affective disorder associated with a larger average number of work loss days than any other pure disorders considered.[13] Co-morbidity e.g. two out of three of affective, anxiety and substance use disorders, was associated with a larger average number of work loss days.

In our study, those with physical health conditions were over twice as likely to have been off sick in the past week. We found no significant differences in the effects of physical health conditions between occupational classification or employing sector. We found significant differences in the effects of GHQ-12 caseness and physical health problems between types of employer. People working in the private sector reported less caseness, and more physical health conditions. It is possible that it is culturally more acceptable to report mental health problems in public and non-profit organisations such as the National Health Service, and more acceptable to present with physical health problems in private sector organisations.

There were significant differences between occupational classes in sickness absence rates. Lower class occupations had higher rates of sickness absence. There were, however, no significant differences in the effects of caseness or physical health conditions between occupational classes- the differences between sickness absence rates across occupations were the same whether the individuals in the sample reported GHQ-12 caseness (or a physical health condition) or not. This is contrary to the findings of one study from Australia that found no statistically significant association between absenteeism rates by low and high psychological distress for white collar workers although it demonstrated an 18% increase in absenteeism rates for blue collar workers with psychological distress.[14]

*Conclusions and recommendations*

This study found that probable mental ill health is associated with a four-fold increase in sickness absence from work and this effect was consistent across occupational classifications and employment sectors. There were, however, differences between types of employer. Public and non-profit sector employers had higher overall levels of absenteeism and higher levels of absenteeism due to probable mental health problems compared with private sector employers. These findings need further explanatory research to understand the differences and to support the development of strategies for reducing absenteeism.

Our previous research has demonstrated that Family Doctors (GPs) in the UK could identify people with GHQ-12 caseness two years before they go on to long term incapacity benefits providing a window of opportunity when it might be possible to intervene to keep them in work[15]. A randomised trial of enhanced care for depression

in primary care demonstrated a 22.8% reduction in absenteeism over two years in the United States and the intervention effect was robust across diverse occupational groups[16]. There is a need for the development and evaluation of interventions to keep people with depression in work in other countries.

Word count 2919 words

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**Table 1. Relationship of personal, health and employment factors to being off work sick in the previous week in the 18 waves of the British Household Panel Survey. Random-effects logistic regression model for sickness absence**

| | *OR* | *[95% C.I.]* |
|---|---|---|
| Age (base: <=20 years) | | |
| 21-25 | 0.844 | [0.637, 1.118] |
| 26-30 | 1.018 | [0.767, 1.351] |
| 31-35 | 1.011 | [0.758, 1.349] |
| 36-40 | 1.265 | [0.951, 1.684] |
| 41-45 | 1.300 | [0.973, 1.737] |
| 46-50 | 1.557 | [1.161, 2.087] |
| 51-55 | 1.815 | [1.340, 2.458] |
| 56-60 | 1.963 | [1.424, 2.707] |
| 61-65 | 2.332 | [1.605, 3.387] |
| Marital Status (base: married) | | |
| Couple | 0.970 | [0.817, 1.151] |
| Widowed | 1.131 | [0.753, 1.700] |
| Divorced | 1.034 | [0.829, 1.291] |
| Single | 0.848 | [0.708, 1.016] |
| Female (base: male) | 1.284 | [1.124, 1.468] |
| Number of children (base: none) | | |
| 1 | 0.963 | [0.833, 1.112] |
| 2 | 0.932 | [0.783, 1.111] |
| 3+ | 0.867 | [0.656, 1.147] |
| Part-Time employed | 0.834 | [0.724, 0.960] |
| Number of employees (base: 1-24) | | |
| 25-100 | 1.338 | [1.160, 1.544] |
| 100-500 | 1.363 | [1.171, 1.586] |
| 500+ | 1.558 | [1.323, 1.834] |
| Caseness (GHQ>=4) | 4.712 | [4.239, 5.239] |
| Physical health condition* | 2.114 | [1.892, 2.363] |
| Social Occ. Classification (base: Managers & Senior Officers) | | |
| Professional | 0.927 | [0.718, 1.195] |
| Associate Professionals | 1.355 | [1.072, 1.714] |
| Clerical & Secretarial | 1.679 | [1.347, 2.093] |
| Craft & Related | 2.269 | [1.820, 2.828] |
| Personal & Protective | 2.456 | [1.409, 4.283] |
| Sales | 2.311 | [1.804, 2.962] |
| Plant & Machine Operatives | 3.310 | [2.608, 4.202] |
| Other | 2.454 | [1.918, 3.141] |
| Employing sector (base: For-profit sector) | | |
| Public | 1.431 | [1.255, 1.630] |
| Non-profit, other | 0.856 | [0.630, 1.162] |
| Self-employed | 0.554 | [0.428, 0.716] |
| Rho | 0.294 | [0.259, 0.332] |
| Number of observations | 111,677 | |

*Physical health conditions indicate presence of at least one of the following conditions: Arms/legs, sight, hearing, skin, chest, The results are presented as odds-ratios (estimates higher than one represents a higher probability of being off work last week due to sickness compared to the base category).

heart/blood, liver, diabetes, epilepsy and migraine.
'No health problems interactions' is where neither employing sector nor occupational class are interacted with health problems.
Year dummies are included but not reported.

**Table 2 Sickness absence rates by caseness and Standard Occupational Classification in the British Household Panel Survey**

| Standard Occupational Classification | *No caseness* | | *Caseness* | | *Log odds-ratio of absence rates [95% C.I.]* | | *Difference in caseness impacts of adjusted log odds-ratio(compared to Managers & Senior Officers)* |
|---|---|---|---|---|---|---|---|
| | Sickness Absence | | Sickness Absence | | Unadjusted | Adjusted | |
| | (%) | N | (%) | N | | | |
| Managers & Senior Officers | 0.60 | 13,889 | 2.33 | 3,004 | 3.97 [2.88, 5.47] | 3.92 [2.79, 5.50] | - |
| Professional | 0.54 | 11,285 | 3.29 | 2,617 | 6.25 [4.49, 8.70] | 6.07 [4.26, 8.63] | 1.546 [0.949, 2.520] |
| Associate Professionals | 0.86 | 11,632 | 4.42 | 2,669 | 5.33 [4.07, 6.99] | 5.12 [3.82, 6.86] | 1.306 [0.835, 2.041] |
| Clerical & Secretarial | 1.11 | 14,246 | 4.94 | 3,585 | 4.63 [3.72, 5.76] | 4.79 [3.77, 6.08] | 1.221 [0.807, 1.847] |
| Craft & Related | 1.31 | 15,257 | 5.45 | 3,707 | 4.33 [3.56, 5.29] | 4.70 [3.76, 5.86] | 1.197 [0.799, 1.793] |
| Personal & Protective | 1.10 | 1,087 | 4.23 | 189 | 3.96 [1.60, 9.82] | 3.62 [1.28,10.21] | 0.923 [0.310, 2.745] |
| Sales | 1.14 | 10,423 | 4.30 | 1,395 | 3.89 [2.84, 5.34] | 3.85 [2.71, 5.47] | 0.982 [0.603, 1.599] |
| Plant & Machine Operatives | 1.85 | 7,182 | 8.10 | 1,173 | 4.67 [3.56, 6.12] | 5.23 [3.85, 7.12] | 1.334 [0.845, 2.106] |
| Other | 1.55 | 6,972 | 5.93 | 1,365 | 4.01 [2.98, 5.38] | 4.31 [3.10, 5.99] | 1.100 [0.687, 1.761] |
| Total | 1.06 | 91,973 | 4.55 | 19,704 | 4.46 [4.06, 4.89] | 4.71 [4.24, 5.24] | |

Log odds-ratios are the natural logarithm of the ratio of the probability of sickness for those with caseness to the probability of sickness for those without caseness
Adjusted figures obtained from the random-effects logistic regression model shown in Table 1 (Model (2)) with an alternate specification of the Social Occupation Classification and GHQ-12 caseness interaction dummies and includes year, age, marital status, gender, children, part-time, employee size, and employer type .

**Table 3 Sickness absence rates by physical health condition and Standard Occupation Classification in the British Household Panel Survey**

| Standard Occupational Classification | *No physical health condition* | | *Physical health condition* | | *Log odds-ratio of absence rates [95% C.I.]* | | *Difference in physical health condition impacts of adjusted log odds-ratio(compared to Managers & Senior Officers)* |
|---|---|---|---|---|---|---|---|
| | Sickness Absence | | Sickness Absence | | Unadjusted | Adjusted | |
| | (%) | N | (%) | N | | | |
| Managers & Senior Officers | 0.51 | 9,302 | 1.40 | 7,591 | 2.79 [1.98, 3.94] | 2.39 [1.66, 3.45] | - |
| Professional | 0.66 | 7,531 | 1.52 | 6,371 | 2.31 [1.64, 3.26] | 1.81 [1.25, 2.62] | 0.756 [0.451, 1.269] |
| Associate Professionals | 0.76 | 7,647 | 2.40 | 6,654 | 3.22 [2.38, 4.36] | 2.63 [1.90, 3.65] | 1.099 [0.675, 1.789] |
| Clerical & Secretarial | 1.05 | 9,345 | 2.79 | 8,486 | 2.71 [2.14, 3.44] | 2.28 [1.76, 2.96] | 0.952 [0.610, 1.486] |
| Craft & Related | 1.25 | 10,058 | 3.10 | 8,906 | 2.52 [2.04, 3.12 | 1.96 [1.55, 2.48] | 0.818 [0.531, 1.259] |
| Personal & Protective | 1.43 | 697 | 1.73 | 579 | 1.21 [0.50, 2.92] | 0.92 [0.35, 2.40] | 0.383 [0.137, 1.071] |
| Sales | 0.88 | 6,855 | 2.40 | 4,963 | 2.78 [2.04, 3.80] | 2.19 [1.56, 3.07] | 0.913 [0.556, 1.499] |
| Plant & Machine Operatives | 1.56 | 4,425 | 4.05 | 3,930 | 2.66 [2.00, 3.54] | 2.26 [1.65, 3.11] | 0.944 [0.583, 1.529] |
| Other | 1.44 | 4,372 | 3.18 | 3,965 | 2.24 [1.65, 3.05] | 1.72 [1.23, 2.41] | 0.719 [0.439, 1.179] |
| Total | 0.96 | 60,232 | 2.51 | 51,445 | 2.64 [2.39, 2.91] | 2.11 [1.89, 2.36] | |

Log odds-ratios are the natural logarithm of the ratio of the probability of sickness for those with a physical health condition to the probability of sickness for those without a physical health condition.

Adjusted figures obtained from the random-effects logistic regression model shown in Table 1 (Model (2)) with an alternate specification of the Social Occupation Classification and physical health condition interaction dummies and includes year, age, marital status, gender, children, part-time, employee size, and employer type .

**Table 4 Sickness absence rates by caseness and employing sector in the British Household Panel Survey**

| Employing sector | *No caseness* | | *Caseness* | | *Log odds-ratio of absence rate [95% C.I.]* | | *Difference in caseness impacts of adjusted log odds-ratio(compared to Private sector)* |
|---|---|---|---|---|---|---|---|
| | Sickness Absence | | Sickness Absence | | Unadjusted | Adjusted | |
| | (%) | N | (%) | N | | | |
| Private | 1.08 | 57,144 | 4.14 | 11,735 | 3.95 [3.50, 4.45] | 4.23 [3.69, 4.85] | - |
| Public | 1.35 | 21,235 | 6.46 | 5,174 | 5.03 [4.29, 5.92] | 5.40 [4.51, 6.48] | 1.277 [1.021, 1.596] |
| Not-for-profit, other | 0.57 | 3,301 | 4.46 | 829 | 8.06 [4.62, 14.11] | 9.25 [5.10, 16.76] | 2.185 [1.189, 4.014] |
| Self-employed | 0.48 | 10,293 | 2.03 | 1,966 | 4.34 [2.85, 6.61] | 4.56 [2.91, 7.15] | 1.078 [0.676, 1.719] |
| Total | 1.06 | 91,973 | 4.55 | 19,704 | 4.46 [4.06, 4.89] | 4.71 [4.24, 5.24] | |

Log odds-ratios are the natural logarithm of the ratio of the probability of sickness for those with caseness to the probability of sickness for those without caseness
Adjusted figures obtained from the random-effects logistic regression model shown in Table 1 (Model (1)) with an alternate specification of the employing sector and GHQ-12 caseness interaction dummies and includes year, age, marital status, gender, children, part-time, employee size, and Standard Occupational Classification.

**Table 5 Sickness absence rates by physical health condition and employing sector in the British Household Panel Survey**

| Employing sector | *No physical health condition* | | *Physical health condition* | | *Log odds-ratio of absence rate [95% C.I.]* | | *Difference in physical health condition impacts of adjusted log odds-ratio(compared to Private sector)* |
|---|---|---|---|---|---|---|---|
| | Sickness Absence | | Sickness Absence | | Unadjusted | Adjusted | |
| | (%) | N | (%) | N | | | |
| Private | 0.90 | 38,077 | 2.48 | 30,802 | 2.81 [2.48, 3.20] | 2.28 [1.98, 2.63] | - |
| Public | 1.46 | 13,573 | 3.30 | 12,836 | 2.30 [1.94, 2.73] | 1.82 [1.50, 2.21] | 0.798 [0.630, 1.011] |
| Not-for-profit, other | 0.73 | 2,044 | 1.97 | 2,086 | 2.71 [1.50, 4.91] | 2.06 [1.08, 3.90] | 0.900 [0.467, 1.733] |
| Self-employed | 0.41 | 6,538 | 1.08 | 5,721 | 2.64 [1.67, 4.16] | 2.15 [1.33, 3.46] | 0.940 [0.573, 1.544] |
| Total | 0.96 | 60,232 | 2.51 | 51,445 | 2.64 [2.39, 2.91] | 2.11 [1.89, 2.36] | |

Log odds-ratios are the natural logarithm of the ratio of the probability of sickness for those with a physical health condition to the probability of sickness for those without a physical health condition.

Adjusted figures obtained from the random-effects logistic regression model in Table 1 (Model (1)) with an alternate specification of the employing sector and physical health condition interaction dummies and includes year, age, marital status, gender, children, part-time, employee size, and Standard Occupational Classification .