Work-related mental ill-health and ‘stress’ in the UK (2002–05)

Melanie Carder¹, Susan Turner¹, Roseanne McNamee² and Raymond Agius¹

**Background**
There is concern about the frequency of work-related mental ill-health and ‘stress’ within the UK.

**Aims**
To provide a measure of the incidence of work-related mental ill-health reported by specialist psychiatrists and occupational physicians to UK voluntary reporting schemes during the period 2002–05. Additionally, an investigation of determinants, notably factors identified by reporters as precipitants in cases of work-related mental ill-health was undertaken.

**Methods**
The study used data collected by The Health and Occupation Reporting Network (THOR) from 2002 to 2005. Cases were analysed by age, gender, industry and precipitating event.

**Results**
Estimated annual average incidence rates and 95% confidence intervals of work-related mental ill-health diagnoses reported to THOR between 2002 and 2005 by psychiatrists were 89 (78, 101) per million and by occupational physicians were 1589 (1443, 1735) per million. For both groups of reporters, anxiety and depression continued to make up the largest proportion of diagnoses. The majority of cases were attributed to factors such as workload and difficulties with other workers. There was some suggestion that the type of factors associated with the mental ill-health case reports varied between industrial sectors.

**Conclusions**
Work-related anxiety and depression and stress continue to constitute a significant proportion of all work-related mental ill-health diagnoses in the UK, with workload and interpersonal relationships reported as significant risk factors. Further investigations may determine whether guidance for employers and employees on work-related mental ill-health would benefit from being more industry specific.

**Key words**
Mental ill-health; occupational; surveillance; stress.

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**Introduction**

The apparent increase in frequency of work-related mental ill-health and ‘stress’ is of real concern to employees, employers and government agencies [1]. It is estimated that work-related stress accounts for over a third of all incident cases of work-related ill-health, with each case leading to an average of 30.9 working days lost [2]. A number of UK sources of information relating to work-related mental ill-health are available, including data collected as part of the Self-reported Work-related Illness (SWI) survey, which is designed for individuals to report cases of work-related ill-health [3]. However, by its nature, the information collected as part of the SWI is subjective and dependent on the perceptions and beliefs of the individual patient. Further sources of information of work-related mental ill-health in the UK (where the cases are reported by physicians) include the surveillance schemes comprising The Health and Occupation Reporting Network (THOR) operated by the University of Manchester [4]. THOR is composed of a number of schemes that cover a wide range of diseases including mental ill-health, respiratory diseases, dermatology, infections and musculoskeletal disorders. Cases of mental ill-health are reported to three schemes within THOR: to the Surveillance of Occupational Stress and Mental Ill-health (SOSMI) by psychiatrists, to the Occupational Physicians Reporting Activity (OPRA) by occupational physicians (OPs) and to THOR-GP by general practitioners (GPs) [5–7]. This study focuses on data from SOSMI and OPRA (as THOR-GP data collection started relatively recently, in 2005).

The objective of this study was to provide an update on the medically reported incidence of work-related mental ill-health reported to SOSMI and OPRA during the period...
2002–05. We also investigated factors identified by reporters as precipitants in cases of work-related mental ill-health, including whether the relative contribution of different precipitating factors varied between industrial sectors.

Methods

The methodology behind SOSMI and OPRA has been reported previously [5,6]. In brief, physicians can contribute data as ‘core’ reporters (who report every month) or as ‘sample’ reporters (who report for one randomly allocated month each year). Physicians are asked to report only cases seen within the reporting month. The decision as to whether the case is work related (caused by or aggravated by work) is left to the physician, although general guidance (notification criteria plus additional training material) is provided on the website [4]. Information relating to industry and occupation is coded using the Standard Industrial Classification [8] and Standard Occupational Classification [9]. A coding scheme, developed within the research group, is used to classify the precipitating events for each case [10]. All coding is carried out by two independent research assistants and any discrepancies rectified by a third, independent person.

To estimate the total number of incident cases within the populations covered by reporters, the cases returned by sample reporters were multiplied by 12 and this subtotal was added to the cases returned by core reporters. The 95% confidence intervals (CIs) were calculated using a formula which took into account the proportions of the cases reported by core and sample reporters.

To calculate incidence rates for psychiatrist reported mental ill-health, estimated case data from SOSMI were divided by the UK workforce information within the 2002–05 Labour Force Survey [11]. However, recent work suggests that the proportion of eligible UK psychiatrists (i.e. those seeing subjects of a working age) reporting to SOSMI may be quite low. As such, applying the UK workforce data as the denominator will lead to artificially low incidence rates. Therefore, psychiatrist reported incidence rates presented here should be interpreted as ‘minimum’ incidence rates. Work is ongoing to estimate the proportion of UK cases captured by SOSMI. The ‘true’ incidence rates will be equal to the minimum incidence rates given here multiplied by the factor relating to case capture. CIs for minimum incidence rates were calculated using the 95% CIs for estimated cases divided by the workforce denominators.

After adjustment for core and sample reporting (as described previously), total case estimates and CIs were calculated for mental ill-health reporting in OPRA. The situation for OPs was different to that for psychiatrists regarding the workforce (denominators), however, as data on the size of the workforce covered by OPRA reporters were available from a survey first conducted in 2001 [12]. The use of this 2001 denominator information should mean that there is less reason to view OPRA rates as underestimates.

All data analysis was carried out using SPSS V15.0. Chi-squared tests were used to determine whether the proportion of cases attributed to specific precipitating events varied between industrial sectors. Multicentre Research Ethics Committee (MREC) approval has been given for THOR (reference number MREC 02/8/72).

Results

Between 2002 and 2005, there were 624 active reporters (i.e. participants returning a case or ‘nil report’ in the study period) in SOSMI, who returned 1598 actual (9451 estimated) mental ill-health case reports. This compared to 566 active reporters in OPRA who returned 2654 actual (18835 estimated) mental ill-health case reports. On average, there were 46 active psychiatry reporters and 49 active OP reporters per month, returning a mean of 33 and 42 actual mental ill-health case reports per month, respectively. Participation rates (active reporters per month/all reporters per month) were 72% for core and 80% for sample psychiatrists and 91% for core and 85% for sample OP reporters.

Estimated annual average incidence rates of work-related mental ill-health between 2002 and 2005 reported by psychiatrists and OPs are shown by diagnosis in Table 1. Of note, analysis of all OPRA reporting showed that cases of mental ill-health made up 42% of the total diagnoses during 2002–05. For both psychiatrists and OPs, anxiety and depression made up the largest proportion of diagnoses, but there were noticeable differences in proportions of the other major diagnostic groups reported by the two groups of reporters (e.g. other work-related stress). Within the group ‘other psychiatric problems’, 39% of the case reports from psychiatrists were adjustment disorder and the remainders were bulimia, obsessive compulsive disorder and chronic fatigue syndrome. The 52 case reports of ‘other psychiatric problems’ from OPs included migraine/tension headache (17%), chronic fatigue syndrome (10%) and burn-out (8%).

Case reporting by psychiatrists suggested that the incidence of work-related mental ill-health was typically higher (but not significantly so) in males compared to females. In particular, rates of both post-traumatic stress disorder (PTSD) and alcohol and drug abuse were twice as high in males than females. Reports from OPs also suggested a higher incidence of PTSD and alcohol and drug abuse in males. However, unlike reports from psychiatrists, OP reports suggested a higher incidence of anxiety and depression, other work-related stress and psycotic episodes in females compared to males.

A breakdown of the estimated cases of mental ill-health by industry is provided in Table 2. For both psychiatrists
and OPs, a large proportion of the mental ill-health cases were reported in employees within health and social work, public administration and defence and education. These three sectors also had much higher psychiatrist reported incidence rates compared to other sectors and to industry overall. OPs also saw a large proportion of cases in the manufacturing sector, in particular the manufacture of chemicals and chemical products, of food and beverages and of motor vehicles and other transport equipment.

The most frequently reported precipitating events were ‘factors intrinsic to the job’ and ‘interpersonal relationships’ (Figure 1). Approximately, 25% of estimated cases reported by psychiatrists and 35% reported by OPs were attributed to the former, with ‘workload’ and ‘organizational factors’ being the most frequently reported factors. A smaller proportion of cases (17% of psychiatrist reported and 20% of OP cases) were attributed to interpersonal relationships, with ‘bullying/sexual harassment’ being the most frequently reported factor in this group.

According to reports by psychiatrists, 25% of estimated (37% of actual) cases of mental ill-health reported in the health and social care sector were attributed to factors intrinsic to the job, with the corresponding estimated figures for public administration and defence and education sectors being 19% (25% of actual) and 26% (44% of actual), respectively. The proportion of actual cases attributed to factors intrinsic to the job varied significantly between the three sectors ($P < 0.001$). The proportion of cases attributed by OPs to this precipitating event was slightly higher at 35% estimated (42% actual) for health and social care, 32% (39%) for public administration and defence and 39% (42%) for education but the observed variation between the three sectors was not statistically significant.

For psychiatrist reported cases, a larger proportion of the cases reported in the health and social care sector was attributed to interpersonal relationships (21%) compared to public administration and defence (16%) and education (15%). This was not reflected in reports from OPs in which there was very little difference between the three sectors (22–28%). For both psychiatrists and OPs, the observed variation between the three sectors was not statistically significant.

**Discussion**

Anxiety and depression formed the largest proportion of reported cases of work-related mental ill-health during 2002–05, with OPs returning proportionally more work-related stress cases than psychiatrists. Incidence
rates varied considerably by reporter type (OP or psychiatrist), diagnosis and gender. Within THOR, the health and social care sector had a higher incidence rate of work-related mental ill-health compared to other key sectors and industry overall. The most frequently reported precipitating event associated with the case reports was workload, and there was some indication that the proportion of cases attributed to selected precipitating events varied between industrial sectors.

A previous report describing cases reported to THOR's predecessor during the period 1996–2001 also observed the majority of the diagnoses to be anxiety and depression [6]. Data from this earlier period similarly showed that OPs reported proportionally more work-related stress cases than psychiatrists. One possible explanation for this finding was the possibility of different diagnostic preferences between psychiatrists and OPs. However, a recently completed study in THOR reporters which investigated this issue found that this was not the case and that it probably reflected a real difference in casemix or the different timescales (and therefore illness severity) when psychiatrists and OPs saw patients with mental ill-health diagnoses in their clinics [13].

Incidence rates estimated using SOSMI data for 2002–05 suggest a decrease in the incidence of work-related mental ill-health compared to 1996–2001 [6]. This may reflect changes in referral mechanisms leading to psychiatrists only seeing more severe cases. In the past, GPs referred patients directly to individual consultants; however, recent moves towards integration of mental health and social services means in many cases that referral is now through a central bureau [14]. As psychiatrists will only see the patients passed to them through the bureau, this could have impacted on the numbers of referrals to psychiatrists.

Data provided by OPs during 2002–05 suggest an increase in incidence compared to 1996–2001 [6]. Although this may reflect a true increase, it may also reflect the fact that the stigma associated with mental ill-health has decreased over recent years, therefore patients and/or medical professionals are possibly more ready to label a case as mental ill-health than they would.

### Table 2. Estimated annual average incidence rates of work-related mental ill-health reported by psychiatrists and OPs by major industrial group, 2002–05

<table>
<thead>
<tr>
<th>Industry</th>
<th>Psychiatrists</th>
<th>OPs a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of cases (95% CI)</td>
<td>% of total cases</td>
</tr>
<tr>
<td>A. Agriculture, hunting and forestry</td>
<td>19 (−10 to 48)</td>
<td>1</td>
</tr>
<tr>
<td>B. Fishing</td>
<td>3 (−9 to 15)</td>
<td>&lt;1</td>
</tr>
<tr>
<td>C. Mining and quarrying</td>
<td>8 (−9 to 25)</td>
<td>&lt;1</td>
</tr>
<tr>
<td>D. Manufacturing</td>
<td>150 (72–228)</td>
<td>6</td>
</tr>
<tr>
<td>E. Electricity, gas and water supply</td>
<td>11 (−9 to 32)</td>
<td>&lt;1</td>
</tr>
<tr>
<td>F. Construction</td>
<td>50 (5–94)</td>
<td>2</td>
</tr>
<tr>
<td>G. Wholesale and retail trade; repair of motor vehicles etc.</td>
<td>111 (42–181)</td>
<td>5</td>
</tr>
<tr>
<td>H. Hotels and restaurants</td>
<td>29 (−6 to 64)</td>
<td>1</td>
</tr>
<tr>
<td>I. Transport, storage and communication</td>
<td>120 (49–190)</td>
<td>5</td>
</tr>
<tr>
<td>J. Financial intermediation</td>
<td>121 (49–192)</td>
<td>5</td>
</tr>
<tr>
<td>K. Real estate, renting and business activities</td>
<td>238 (136–339)</td>
<td>10</td>
</tr>
<tr>
<td>L. Public administration and defence: compulsory social security</td>
<td>443 (306–579)</td>
<td>19</td>
</tr>
<tr>
<td>M. Education</td>
<td>322 (210–434)</td>
<td>14</td>
</tr>
<tr>
<td>N. Health and social work</td>
<td>582 (424–739)</td>
<td>25</td>
</tr>
<tr>
<td>O. Other community, social and personal service activities</td>
<td>86 (24–147)</td>
<td>4</td>
</tr>
<tr>
<td>P. Private households employing staff etc.</td>
<td>3 (−9 to 15)</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Q. Extra-territorial organization and bodies</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Unable to code</td>
<td>70 (13–126)</td>
<td>3</td>
</tr>
<tr>
<td>Total cases</td>
<td>2363 (2047–2678)</td>
<td>100</td>
</tr>
</tbody>
</table>

aIndustry-specific incidence rates were not calculated for cases reported by OPs (denominator data not currently available for the majority of the industry groupings specified).

bLabour Force Survey data 2002–05 (by gender) were used as a denominator to calculate incidence rates. Since not all eligible psychiatrists (i.e. those seeing patients of a working age) report to SOSMI, these rates should be viewed as ‘minimum’ rates—see Methods. Incidence rates not calculated if annual average number of estimated cases is <100.
have done previously. In relation to specific industries, the results presented here suggest that the health and social care sector has the highest (psychiatrist) reported incidence rate of work-related mental ill-health compared to other key sectors and industry overall. A study by Walsh et al. which analysed specifically work-related ill-health in health care workers (using cases reported to THOR in 2002–03) also found a high incidence of work-related mental ill-health among this group [15].

A limitation of using THOR data to determine incidence rates is that the rates are likely to be artificially low because not all eligible psychiatrists report to SOSMI. The extent to which the rates are underestimated is currently under investigation. However, although the rates may be underestimates, there is no reason to believe that cases captured by SOSMI are otherwise unduly biased and therefore the breakdown of cases by type and precipitating factors should be broadly representative of all UK cases. The situation for OPs is slightly different in that estimates of the denominators were available, from which it was clear that access to an OP within the UK workforce varies between industries. However, no adjustment was made for the response rate to the 2001 OPRA denominator questionnaire [12], therefore the reported incidence rates may be slightly overestimated. A second survey of the workforce covered by OPs reporting to OPRA has just been completed which will enable us to have a more accurate picture of the current denominator and also allow us to adjust for the questionnaire response rates.

Although comparing incidence rates can provide some insight into trends in work-related ill-health, to investigate this issue fully a number of additional factors need to be considered. Importantly, incidence rates do not take into account any differences in reporter numbers or mix of reporter types (core and sample) between time periods. There may also be changes in reporter behaviour over time, such as a reporter experiencing ‘fatigue’ and therefore reporting fewer cases. Such factors are being addressed in a separate study; these results have been published for skin and respiratory disease, while work is in progress for mental ill-health and musculoskeletal disease [16].

Analysis by precipitating events indicated that the majority of work-related mental ill-health disorders reported to SOSMI and OPRA were attributable to workload followed by interpersonal relationships. The former may be addressed through changes in work practice such as additional recruitment or training or increased delegation. However, a recent study suggested that only 40% of organizations have taken steps to reduce stress in the
workplace [17]. The latter may be attributable to workforce personality mixes, and therefore be more difficult to solve by external intervention. There was some variation in the proportion of cases attributed to different precipitating factors between industrial sectors. However, this difference was only statistically significant for factors intrinsic to the job as reported by psychiatrists, who suggested fewer reported cases attributed to this factor in the public administration and defence sector compared to the other sectors studied.

In conclusion, despite its limitations, THOR continues to be an important source of work-related mental ill-health data in the UK. Data collected suggest that the majority of reported cases were attributed to problems with workload and relationships with others, with some suggestion of variation between industrial sectors. Further work investigating this would be useful in order to help determine whether guidance on work-related mental ill-health would benefit from being more industry specific.

**Key points**

- Work-related anxiety and depression and stress continue to constitute a significant proportion of all work-related mental ill-health diagnoses in the UK.
- Data collected suggest that the majority of reported cases were attributed to problems with workload and relationships with others, with some suggestion of variation between industrial sectors.
- Further work investigating this would be useful in order to help determine whether guidance on work-related mental ill-health would benefit from being more industry specific.

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**Conflict of interest**

None declared.

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