Common mental disorders
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multidimensional self-report questionnaire to assess distress, depression, anxiety and somatization. BMC Psychiatry. 2006;6:34.
Introduction

Mental disorders are an increasing cause of workforce sickness absence [1–5]. After a first mental health-related absence from work, the risk of another mental health-related absence is three times higher than the population incidence [6]. Virtanen et al. [7] showed that mental health-related absences recurred more frequently in manual workers (e.g. cleaners, maintenance workers and kitchen workers) than in white-collar workers (e.g. physicians, teachers and other professionals). In the Dutch industrial sector, mental health-related absences were found to recur as frequently in production workers as in office workers [8]. Koopmans et al. [6] found the highest recurrence rates after sickness absence due to specific psychiatric disorders. However, the authors did not stratify recurrent mental health-related absences by diagnosis.

Given the increased risk of recurrent mental health-related sickness absence, occupational and primary health care providers might wish to review workers after mental health-related absence. For case finding, we have to take into account the Wilson and Jungner screening criteria [9]. Mental disorders constitute an important health problem and there are facilities to diagnose and treat mental disorders before they culminate in mental health-related absence from work. Health care providers could examine a worker’s mental health status and, if necessary, refer for further treatment. However, it is unclear when it may be best to review workers after recovery from mental health-related absence. To answer this question, we investigated the time to recurrence of mental health-related absence, stratified by International Classification of Diseases–Tenth Revision (ICD-10) diagnostic categories.
### Methods

This 10-year observational cohort study included a previously described study population [8], comprising all workers employed at a steel mill between January 2000 and December 2009. The baseline was set at January 2000 or the date workers started working at the steel mill. During the study period, 4857 workers left the steel mill; their data were censored when employment ended. Workers could be followed up for a mean period of 7.0 [standard deviation (SD) 3.6] years. The Medical Ethics Committee of the University Medical Centre Groningen granted ethical clearance for this register-based study.

In the Netherlands, absence from work due to sickness is employer compensated when it is medically certified by an occupational physician (OP) within 42 days of reporting sick. Dutch OPs certify sick leave with an ICD-10 diagnostic code [10]. Sick leave certified as emotional disturbance (i.e. symptoms and signs involving an emotional state, such as nervousness, restlessness, irritability and worries; ICD-10 R45) or mental and behavioural disorders (F00–F99) were regarded as mental health-related absences. The first such absence since baseline was called the ‘index episode’. Recurrent mental health-related absences were defined as absences from work due to mental disorders occurring >28 days after recovery from the index episode.

### Statistical analysis

Statistical analyses were done in IBM SPSS Statistics for Windows, version 20 (IBM Corp. Armonk, NY, released 2011). The recurrence density (RD) was calculated by dividing the number of recurrent mental health-related absences by the person-years at risk of recurrence. Differences across ICD-10 diagnostic categories were investigated with the RD ratio (RDR), which is the RD of absences from work due to mood disorders (ICD-10 F30–39), neurotic disorders (ICD-10 F40–49) and specific psychiatric disorders (e.g. schizophrenia, personality disorders, pervasive disorders and attention-deficit disorders; ICD-10 F00–F29 and F50–99) relative to the RD of absence due to emotional disturbance. The time to recurrent mental health-related absence was analysed by Kaplan–Meier survival analysis, stratified by ICD-10 diagnostic categories.

### Results

A total of 15461 workers formed the study population. At baseline, workers (96% men) were on average aged 40.5 (SD = 10.7) and employed as production workers (43%), maintenance technicians (16%), office workers (30%) or supervisors/managers (11%). A total of 1388 workers had an index episode OP certified as emotional disturbance (n = 670), neurotic disorder (n = 565), mood disorder (n = 103) and specific psychiatric disorder (n = 50).

After the index episode, 391 workers had recurrent mental health-related absences. RDs were 34.3 [95% confidence interval (CI) 24.4–44.3], 29.9 (95% CI 27.3–32.5) and 37.7 (95% CI 27.8–47.6) per 1000 person-years for absences due to mood, neurotic and specific psychiatric disorders, respectively. These RDs did not differ from RD = 30.5 (95% CI 28.1–32.3) per 1000 person-years for absences from work due to emotional disturbance, with non-significant RDRs 1.12 (95% CI 0.74–1.72), 0.98 (95% CI 0.82–1.17) and 1.24 (95% CI 0.85–1.80) for mood, neurotic and specific psychiatric disorders, respectively.

The median time to onset of recurrent mental health-related absence was 15.2 months (95% CI 12.6–17.7) after recovery from the index episode. Table 1 shows times to recurrent mental health-related absence from work stratified by ICD-10 diagnostic category of both index and recurrent mental health-related absences.

### Table 1 Recurrent mental health-related absence stratified by ICD-10 diagnosis

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Index episode</th>
<th>Recurrent episode</th>
<th>Months to recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ICD-10</td>
<td>ICD-10</td>
<td>N(%)</td>
</tr>
<tr>
<td>Emotional disturbance</td>
<td>R45</td>
<td>R45 F30–39 F40–49</td>
<td>112 (58)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>other all</td>
<td>12 (6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>68 (35)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 (1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>193 (100)</td>
</tr>
<tr>
<td>Mood disorders</td>
<td>F30–39</td>
<td>R45 F30–39 F40–49</td>
<td>11 (32)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>other all</td>
<td>19 (56)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 (11)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 (0)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>34 (100)</td>
</tr>
<tr>
<td>Neurotic disorders</td>
<td>F40–49</td>
<td>R45 F30–39 F40–49</td>
<td>50 (32)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>other all</td>
<td>14 (9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>82 (53)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9 (7)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>155 (100)</td>
</tr>
<tr>
<td>Specific psychiatric disorders</td>
<td>F00–29 F50–99</td>
<td>all †</td>
<td>9 (100)</td>
</tr>
</tbody>
</table>

 CI confidence interval
 n.a. not analysed because of low number of recurrences
 † not stratified by diagnosis because of low number of recurrences
Discussion

Recurrences of mental health-related absence from work did not differ across ICD-10 diagnostic categories. In agreement with Koopmans et al. [6], we found more recurrences (RDR = 1.24) and shorter time to onset (median 5.3 months) after mental health-related absence due to specific psychiatric disorders as compared to absence due to emotional disturbance. However, these differences were not statistically significant, probably due to the low number (50) of specific psychiatric absences.

Although the workers concerned were employed in various occupations, they all worked in the same company and we must therefore be cautious about generalizing the results to other working populations. Furthermore, mental health-related absences lasting <42 days were not OP certified, which may have led to under-estimated RDs, particularly for emotional disturbances (ICD-10 R45) which tend to be of shorter duration than absences due to disorders within the ICD-10 F-categories [8]. As the RD of emotional disorders was the denominator, RDRs might thus have been over-estimated.

Health care providers could consider reviewing a worker’s mental health status 6 months after recovery from mental health-related absence, although half of the recurrent absences due to mood disorders and specific psychiatric disorders would have been missed in our study population. The number of recurrent absences due to mood disorders and specific psychiatric disorders was small and therefore the estimated time to onset may not be representative of the working population. Furthermore, randomized controlled trials would be required to investigate whether reviewing workers in this way actually reduces recurrent mental health-related absences.

References