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# Symptom patterns in patients newly sick listed for common mental disorders and associations with work-related and socioeconomic factors: a cross-sectional study in Swedish primary care

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## ABSTRACT

**Objective** The aim was to determine symptom patterns of depression, anxiety and stress-related mental disorders in newly sick listed due to common mental disorders in Swedish primary care patients and to examine associations with sick leave diagnosis, also in relation to socioeconomic, work-related and demographic factors.

**Design** Cross-sectional study.

**Setting** Primary care in western Sweden.

**Participants** From a randomised controlled trial, patients aged 18–67, seeking primary care and on sick leave due to depression, anxiety and/or mental stress, in total 341 individuals, during 2018–2020.

**Primary outcome measures** Patterns of depressive, anxiety and stress symptoms measured via self-assessment questionnaires (Montgomery Asberg Depression Rating Scale-Self (MADRS-S), General Anxiety Disorder Scale-7 (GAD-7), Karolinska Exhaustion Disorder Scale (KEDS)), sick leave diagnosis, perception of Work Ability Index and job strain via the job strain model.

**Results** A combination of high levels of depressive and stress-related symptoms was more frequent than single symptom clusters among persons with common mental disorders (CMD) on sick leave: 7% of the patients had scores above cut-off for one of the instruments MADRS-S, GAD-7 and KEDS, 12% above cut-off for two and 80% had above cut-off for all three instruments. There was no significant association between low socioeconomic status, high-job strain or working in healthcare/education and having scores above cut-off level for two or more of the instruments. Only perception of own poor work ability showed association with having scores above cut-off level for all three of the assessment instruments of CMD (OR 9.45, 95% CI 2.41 to 37.04).

**Conclusion** The diagnosis on the sick certificate is not always congruent with the dominating symptom score level. In patients sick-leaved for CMDs, possible negative factors such as low socioeconomic status, low social support, high-work strain or working in healthcare/education sector did not show significant associations with self-assessment instruments of anxiety, depression and stress. Only patient's perception of own poor work ability was associated with high scores on all three domains.

**Trial registration number** NCT03250026.

## STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The study was carried out in ordinary primary care with a high participation rate.
⇒ A comparison was made between patient-reported outcome data and sick leave diagnosis among patients with common mental disorder.
⇒ Associations were examined between having scores above cut-off level of the self-assessment instruments and socioeconomic group, Work Ability Index, job strain and social support.
⇒ No structured diagnostic instrument was used.

## INTRODUCTION

Common mental disorders (CMDs), defined as depression, anxiety syndromes and stress-related mental disorders, are the main cause of long-term sick leave in Western countries[1] and have a point prevalence of around 20%.[2] [3] Costs for CMDs are substantial and mainly affect the work sector. A conservative estimate of the costs of poor mental health is 3%–4% of the gross domestic product in the European Union.[4] In Sweden, depression, anxiety and stress-related mental disorders increasingly are stated as primary diagnoses for cause of sick leave certification, in similarity to many European countries.[5] Further, as much as 44% of long sick leave in Sweden was caused by CMD in 2017.[6]

Reduced productivity and loss of workdays are related to depression and cause economic burden.[7] On the other hand, it has been shown that employment can be a protective factor against chronic progression of CMD.[8] Depression affects functioning when left untreated, resulting in major societal consequences and decreased work ability.[9] Studies on job strain show an

increased risk for CMD and especially depression and stress-related disorder.[10 11]

Studies have shown that socioeconomic factors could protect against depression, especially higher education.[12] According to Santini *et al*[13] socioeconomic factors are strongly associated with low mental well-being and CMD. However, associations with high mental well-being could not be seen. These findings have important implications for public mental health strategies.

Recently, we initiated a pragmatic randomised controlled trial (RCT) (Co-Work-Care) at Swedish primary care centres (PCCs) with purpose to evaluate whether a collaborative care concept could reduce net sick leave days for patients with CMD compared with usual care (ClinicalTrials.gov). In the present study we used the baseline data from the RCT Co-Work-Care concerning symptom presentation for all the patients included in the trial regardless of randomisation. Few studies from the primary care context of today have examined presentation of symptoms of depression, anxiety and mental stress for those newly on sick leave because of CMD. Since patients with CMD represent a growing proportion of patients in need of sick leave certification, it is important to examine the complexity of symptoms in this patient group.

The present study could contribute to reduce the knowledge gap concerning both symptom presentation and diagnostics concerning patients with CMD in primary care requiring sick leave certification.

The aim was to determine symptom patterns of depression, anxiety and stress-related mental disorders in newly sick listed due to CMDs in Swedish primary care patients and to examine associations with sick leave diagnosis, also in relation to socioeconomic, work-related and demographic factors.

## METHODS
### Study design
This was a cross-sectional study including individuals recruited to the Co-Work-Care RCT during 2018–2020 in primary healthcare in western Sweden. In the Co-Work-Care RCT, patients newly sick listed because of symptoms of depression, anxiety and stress-related mental disorders were included. Randomisation was made at the PCC level. For the present cross-sectional study of patients at baseline, both intervention and control PCC patients were included.

### Settings and sample
The study population consisted of individuals with CMD aged 18–67 attending 28 urban and rural PCCs in Sweden and in need of sick listing. At both intervention and control PCCs the individual met the general practitioner (GP), who assessed the need of a sick leave certificate through a diagnostic interview according to International Classification of Diseases, 10th Revision (ICD-10) criteria, often complemented by a patient self-assessment instrument. The GP referred the patient to the care manager as well. All patients who were newly sick listed (<7 weeks) were asked if they accepted to be included in the RCT and were informed about contact with PCC for 3 months and follow-up concerning sick-listing duration. The patient answered several questionnaires with the care manager present. Inclusion criteria were individuals newly diagnosed (<7 weeks) with depression (ICD-10 F32, F33), and/or anxiety syndrome (ICD-10 F40, F41, F48), and/or stress-related mental disorder (ICD-10 F43) through a clinical interview performed by the GP and having an employer. Exclusion criteria were suicidal ideation or earlier suicide attempt, severe depression, individuals diagnosed with bipolar disorder, psychosis, drug addiction, dementia or not speaking/understanding Swedish. Other reasons were: pregnancy after first trimester, referred to occupational health service, acute stress reaction diagnosis or post-traumatic stress disorder (ICD-10 F43.0, F43.1).

### Data collection and variables
Demographic data were obtained from self-reported questionnaires that included age, gender, education, ethnicity, physical activity and sick leave during the preceding year (days). The Statistics Sweden socioeconomic classification system, 'Socioeconomic indexation' (SEI),[14] was used to classify occupational group. Using the SEI, we transformed the self-reported job title and work tasks obtained from the questionnaire into five categories: high-level non-manual, medium non-manual, low non-manual, skilled manual and unskilled manual work. The five categories were merged into three categories: (1) high (white collar), (2) middle (low white collar) and (3) low (blue collar/students).

The individual's self-reported occupation was obtained and classified according to the Standard for Swedish Occupation Classification(SSYK2012).[15] The occupation was then dichotomised into two groups: (1) healthcare/education sector and (2) other.

Depression was measured with nine items by the *Montgomery Asberg Depression Rating Scale-Self* (MADRS-S).[16] Each question is graded from 0 to 6 points, in total 54 points and classified as follows: no depression 0–12 points, mild depression 13–19 points, moderate depression 20–34 and severe depression >34 points. In this study we included individuals with ≤34 points.

Anxiety was measured by the *General Anxiety Disorder Scale-7* (GAD-7).[17] Total GAD-7 points are calculated by adding the points from the seven questions. Each question gives 0–3 points, in total maximum 21 points, classified as follows: >4, mild GAD; >9, moderate GAD and >14, severe GAD.

Exhaustion Disorder was measured by the *Karolinska Exhaustion Disorder Scale* (KEDS).[18] This self-rating scale with nine questions, each graded from 0 to 6 points, gives in total 54 points, where >18 points indicates an increased risk for exhaustion disorder.

We used the *Work Ability Index* (WAI)[19 20] to measure work ability. The single WAI item 'current work ability compared with the lifetime best' was used, with a possible score ranging from 0=completely unable to work, to 10=work ability at its best.

*The Demand–Control–Support Questionnaire* is an instrument that is widely used, validated in several languages[21] and suitable to use when measuring outcomes related to perception of work.[22 23] The questionnaire contains 17 items: 5 for demands, 6 for control and 6 for support. The response alternatives for demand and control were: 'yes often', 'yes rather often','no, seldom' and 'no'. A value was given for each answer alternative. The summary scores were calculated for each index and dichotomised using the median score as a cut-off point. The demand subscale ranged from 5 to 20 and was dichotomised into low demand (5–13 score) and high demand (14–20 score). The control subscale ranged from 6 to 24 and was dichotomised into low control (6–18 score) and high control (19–24 score). The response alternatives regarding the support subscale, support intensity, were: 'agree totally,' 'agree rather well,' 'do not agree particularly well' and 'do not agree at all'. The support subscale ranged from 6 to 24 and was dichotomised into low support (6–19 score) and high support (20–24 score).

*The job strain model* was used to analyse the combination of demand and control.[21 24] Each index was dichotomised into high and low control and high and low demand, respectively, using median values. The dichotomised variables were combined into the job strain index as follows: low-strain jobs (low demand, high control), high-strain jobs (high demand, low control), passive jobs (low demand, low control) and active jobs (high demands, high control).

We used the Alcohol Use Disorders Identification Test (AUDIT)[25] to assess the patient's level of risk related to alcohol. AUDIT has 10 questions. Each response has a score ranging from 0 to 4, and response scores are summarised. WHO recommends that a total score of 8 or more indicates hazardous, harmful use or alcohol dependency.

We used the Saltin-Grimby physical activity level scale[26] to assess reported leisure-time physical activity. The scale was dichotomised into non-active (inactive or almost inactive) and active (at least 4 hours per week walking, bicycling, gardening, running, dancing, playing golf, tennis or similar activities during the last year or regular intense training several times per week).

## Statistical analysis

Standard statistical methods were used for descriptive statistics. For continuous variables, means and SDs and for categorical variables, frequencies and percentages have been presented. Associations between having outcomes above cut-off level of the self-assessment instruments and low socioeconomic group, low WAI, high-job strain, health/education working area and low social support

were analysed by logistic regression, adjusted for age, sex and antidepressive medication at baseline.

Statistical analyses were conducted using statistical software SPSS, V.26. Statistical significance was set at p<0.05.

## Patient and public involvement

Patients and the public were not involved in the design and recruitment process of the study.

## RESULTS

In total 499 individuals were invited, where 131 (52 men and 79 women) individuals did not accept inclusion and 27 individuals (6 men and 21 women) were excluded since the individuals did not meet the eligibility criteria. The final sample consisted of 341 individuals (men and women), 72% of all eligible patients.

Baseline data from December 2017 to June 2020 for all included patients, in total 341, are shown in table 1. A majority of the patients were women. Around 60% worked in the healthcare and education sector. Antidepressants were used by 32%. Mean MADRS-S was 22.3 and mean KEDS was 28.7, corresponding to moderate levels of depression and stress symptoms, respectively.

The symptom pattern of depression, anxiety and mental stress, respectively, is shown in figure 1. Percentages of patients with scores above cut-off level for MADRS-S (>12), KEDS (>18), GAD-7 (>4) and patients with scores above cut-off level for moderate depression (MADRS-S >19), high-stress level (KEDS >29) and moderate anxiety (GAD-7 >9) are presented in figure 1.

Figure 2 shows individuals with one, two and three outcomes above cut-off levels concerning MADRS-S, KEDS and GAD-7, respectively. A great majority had more than one outcome above cut-off, and most prevalent was high-outcome level on both KEDS and MADRS-S, indicating that the combination of depressive and stress-related symptoms was more frequent than having symptoms on a single scale among persons on CMD sick leave in primary care.

Table 2 shows the number of patients with scores above cut-off level for MADRS-S, KEDS och GAD-7 for patients on sick leave because of main sick leave diagnosis of depression, anxiety syndrome and stress-related mental disorder. Most patients had a single diagnosis as cause of sick leave on the sick leave certificate, but some had two mental health diagnoses (n=73) and seven patients had three mental health diagnoses indicated as sick leave cause.

## Association with work-related and socioeconomic factors

Associations were examined between CMD symptoms and work-related and socioeconomic factors. Only 7.3% of the patients had scores above cut-off level for only one of the assessment instruments; all other patients had scores above cut-off level for two or three of the assessment instruments. The association between having scores above cut-off level for >1 and >2 of the CMD assessment

**Table 1** Baseline data for 341 patients included from December 2017 to June 2020 in the Co-Work-Care study

| | n | % |
|---|---|---|
| Women | 275 | 80.6 |
| Men | 66 | 19.4 |
| Occupation | | |
|   Working | 328 | 96.8 |
|   Studying | 1 | 0.3 |
|   In search of work/other | 10 | 2.9 |
| Hours of work | | |
|   Full-time | 299 | 87.9 |
|   Other (25%–75%) | 41 | 12.1 |
| Marital status | | |
|   Cohabiting | 250 | 74.0 |
|   Single | 88 | 26.0 |
| Born outside Nordic country | 32 | 9.4 |
| Educational level primary | 20 | 5.9 |
|   Secondary | 194 | 56.9 |
|   University or college | 127 | 37.2 |
| Physical activity leisure time | | |
|   Sedentary | 55 | 16.3 |
| Smoking yes+sometimes | 77 | 22.6 |
| Alcohol high (>8 p AUDIT) | 27 | 9.0 |
| Job strain | | |
|   Active jobs | 43 | 12.6 |
|   Low strain | 73 | 21.4 |
|   Passive jobs | 141 | 41.3 |
|   High strain | 84 | 24.6 |
| Social support | | |
|   High | 129 | 37.8 |
|   Low | 212 | 62.2 |
| Low socioeconomic status | 178 | 58.6 |
| Healthcare and educational profession | 169 | 50.9 |
| Antidepressants | 110 | 32.3 |
| Sick leave last year, self-reported (yes) | 132 | 40.9 |
| | **mean** | **SD** |
| Days on sick leave last year | 35.3 | 37.0 |
| Age | 41.3 | 11.2 |
| MADRS-S | 22.3 | 8.0 |
| GAD-7 | 11.6 | 4.9 |
| KEDS | 28.7 | 8.7 |
| WAI (1–10 p) | 2.6 | 2.4 |

AUDIT, Alcohol Use Disorders Identification Test ; GAD-7, General Anxiety Disorder Scale-7 ; KEDS, Karolinska Exhaustion Disorder Scale ; MADRS-S, Montgomery Asberg Depression Rating Scale-Self ; WAI, Work Ability Index.

instruments and work-related and socioeconomic factors such as low socioeconomic group, low WAI, high-job strain or working in the health and education sector was tested in a logistic regression model. We adjusted for age, sex and antidepressive medication. The regression model examined odds for having scores above cut-off level for one (7% of the patients), two (12% of the patients) and three (80% of the patients) of the CMD assessment instruments. Only perception of own poor work ability, measured via WAI, showed significantly higher association with having scores above cut-off level for three of the CMD assessment instruments (table 3).

## DISCUSSION
### Principal findings
The results from this study of symptom patterns in patients who were newly sick listed because of CMD, including stress-related mental disorder, showed a high level of self-assessed symptoms of depression, anxiety and mental stress and most common was a combination of symptoms. Most prevalent was the multisymptomatic patient with all three clusters of symptoms. Stress-related symptoms were very common, and more than half of the patients had high-stress levels, often combined with moderately high depressive symptom levels as well as high self-reported anxiety. Possible negative background factors such as low socioeconomic status, low social support, high-work strain or working in healthcare/education sector did not show significant associations with total number of outcomes on the different self-assessment instruments. That is, work-related and socioeconomic factors were not more prominently associated with multisymptomatology. The only background factor associated with multisymptomatology was the patient's own perception of poor work ability.

### Strengths and weaknesses of the study
The present study has a number of strengths. It was conducted in the primary care context and included 72% of eligible patients on sick leave because of CMD diagnosis. The study is based on measurements of present symptom clusters rather than diagnostic procedures and describes the symptom pattern in working persons seeking care for mental problems imposing on work ability to such a degree as to necessitate absence from the workplace for more than 1 week.

Limitations are several. The temporal associations and the direction of causality cannot be determined due to the cross-sectional design. The diagnostic procedure was carried out by the GP who executed the illness certificate. No structured diagnostic instrument was used for symptom outcome assessment. However, level of symptom burden, often on a par with illness severity, was measured by widely accepted and validated assessment instruments for primary care context and the CMD field. The assessment instruments were all validated and tested for use in primary care.

Stress-related disorder was the single most common diagnosis in this study population. In the present study it was surprising that only 3% of patients with KEDS over 29 had three diagnoses (depression, anxiety and stress).
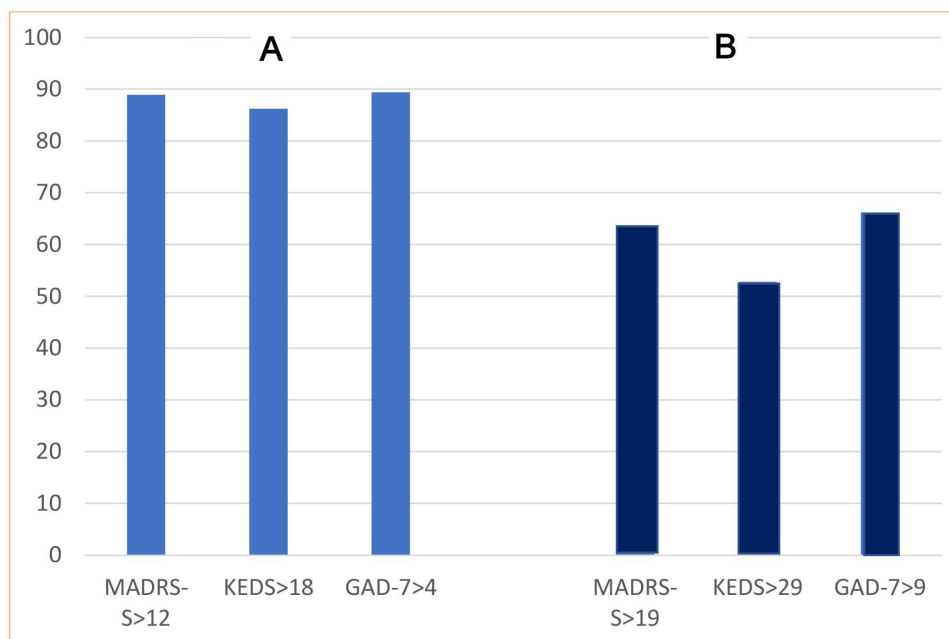
**Figure 1** Percentage of patients with score levels above cut-off for MADRS-S >12, KEDS >18, GAD-7 >4 (A), and percentage of patients with score levels above cut-off for MADRS-S >19, KEDS >29 and GAD-7 >9, respectively (B). GAD-7, General Anxiety Disorder Scale-7; KEDS, Karolinska Exhaustion Disorder Scale; MADRS-S, Montgomery Asberg Depression Rating Scale-Self.

In a previous study, Wiegner et al[27] showed that depression and anxiety symptoms were very common in patients with stress-related disorder in primary care. That study also showed that although it was common with comorbidity (depression and anxiety) in stress-related disorder, comorbidity was not always visible in the sick leave diagnosis. One reason may be due to the Swedish sick leave system, since the diagnosis affects the length of the sick leave time accepted by the insurance authority. At present, stress-related disorder has a somewhat longer expected sick leave time according to the insurance authority. As several of the symptoms coincide in the three diagnostic groups, it can be difficult to make the correct diagnosis. From a treatment point of view, however, it is important that all diagnoses are made visible in order to optimise the treatment. Besèr et al[18] have shown that the symptom clusters of stress-related syndrome, anxiety and depression, respectively, reflect three different underlying dimensions. Patients on sick leave due to depression who have been treated with antidepressants or psychotherapy often have difficulty returning to work despite the depressive symptoms subsiding.[28] One possible explanation could be an untreated stress-related disorder, as it is well known that depression in exhaustion disorder is usually
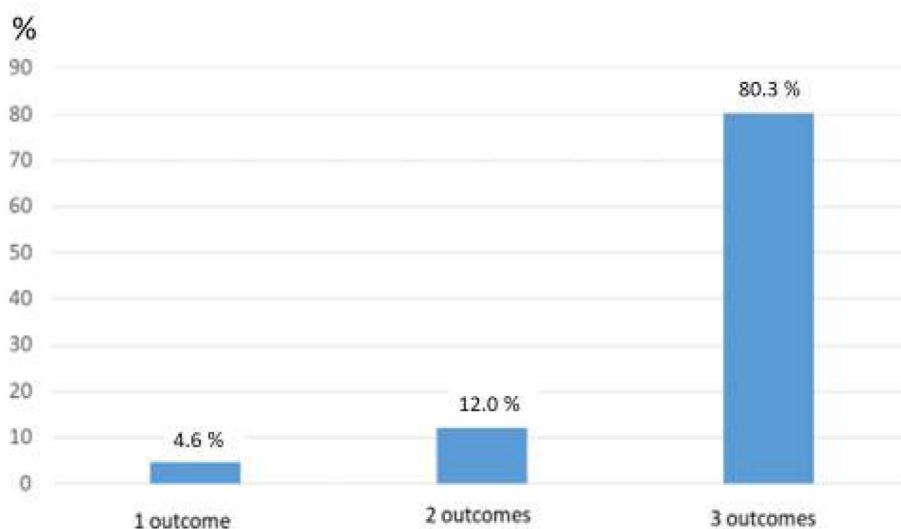


**Figure 2** Percentage of patients with one, two and three outcomes above cut-off level, respectively, for Montgomery Asberg Depression Rating Scale-Self >12, Karolinska Exhaustion Disorder Scale >18, General Anxiety Disorder Scale-7 >4.

**Table 2** Number of patients with scores above cut-off levels for MADRS-S, KEDS and GAD-7, according to baseline sick leave diagnosis (depression, anxiety syndromes and stress-related mental disorder) in the Co-Work-Care study

| | Patients with sick leave diagnosis n (%) | MADRS-S >12 n (%) | MADRS-S >19 n (%) | KEDS >19 n (%) | KEDS >29 n (%) | GAD-7 >4 n (%) | GAD-7 >9 n (%) |
|---|---|---|---|---|---|---|---|
| **One diagnosis** | | | | | | | |
| Depression F32–F33 | 40 (11.7) | 36 (11.9) | 29 (13.4) | 34 (11.6) | 24 (13.6) | 38 (12.5) | 29 (13.2) |
| Anxiety syndrome F40, F41, F48 | 41 (12.0) | 37 (12.2) | 29 (13.4) | 37 (12.6) | 21 (11.9) | 37 (12.1) | 25 (11.4) |
| Stress F43 | 178 (52.2) | 154 (50.8) | 100 (46.3) | 153 (52.0) | 85 (48.0) | 154 (50.5) | 107 (48.9) |
| **Two diagnoses** | | | | | | | |
| Depression F32, F33 +anxiety F40, F41, F48 | 19 (5.6) | 18 (5.9) | 16 (7.4) | 16 (5.4) | 9 (5.1) | 18 (5.9) | 15 (6.8) |
| Depression F32, F33 +stress F43 | 23 (6.7) | 21 (6.9) | 17 (7.9) | 20 (6.8) | 13 (7.3) | 22 (7.2) | 17 (7.8) |
| Anxiety F40, F41, F48 +stress F43 | 31 (9.1) | 28 (9.2) | 19 (8.8) | 27 (9.2) | 18 (10.2) | 29 (9.5) | 20 (9.1) |
| **Three diagnoses** | | | | | | | |
| Depression F32, F33 +anxiety F40, F41, F48 +stress F43 | 7 (2.1) | 7 (2.3) | 5 (2.3) | 6 (2.0) | 6 (3.4) | 6 (2.0) | 5 (2.3) |

Numbers are presented both for MADRS-S >12 and >19, KEDS >19 and >29 and GAD-7 >4 and >9, respectively.
GAD-7, General Anxiety Disorder Scale-7; KEDS, Karolinska Exhaustion Disorder Scale ; MADRS-S, Montgomery Asberg Depression Rating Scale-Self.

transient, while fatigue and cognitive problems persist for a long time and constitute an obstacle to return to work.[29] Surprisingly, among patients with symptoms of moderate or severe GAD, almost half of the individuals had only been diagnosed as having a stress-related disorder (F43). One may ask whether anxiety disorder is underdiagnosed when contemporaneous with perceived stress symptoms.

To our knowledge, studies of symptom patterns of depression, anxiety and stress-related disorder in primary care patients with sufficiently poor work ability for a sick leave certification have not been conducted. In 2014, Lejtzen et al[30] presented data on prevalence and incidence of depression, anxiety and stress adjustment disorders in Swedish primary care, based on a primary healthcare database. Twelve-month prevalence of clinically diagnosed disorders was 2.4%, and overall incidence was 18.4 per 1000 person-years. The overall 12-month

prevalence of these clinically diagnosed disorders was 2.4% (3.2% in women and 1.5% in men). The strongest socio-demographic risk factors for these disorders were female gender (HR=2.04), low-family income (HR=1.52), living in a large city (HR=1.37) and age 35–44 years (HR=1.20). However, these data do not present symptom levels for the different disorder categories.

During the last decade, stress-related mental disorder, mainly as adjustment disorder, has increased as the main diagnosis for sick leave also in Sweden and is now the dominating diagnosis among mental disorders, representing >50% of mental disorder sick leave diagnoses.[31] Most studies concerning the care of patients with CMD are not executed in the primary care context, and present knowledge of care and treatment, especially of complex interventions and person-centred care, is scarce. Likewise, knowledge of symptom patterns of depression,

**Table 3** Association between having outcomes above cut-off level for one, two or all three of the assessment instruments (ai) of CMD (symptoms of depression, anxiety and/or stress symptoms) and low socioeconomic status, poor WAI, high-job strain, health/education working area, low social support, respectively. Adjusted ORs, adjusted for age, sex and antidepressive medication

| | One ai over cut-off level | | Two ai over cut-off level | | Three ai over cut-off level | |
|---|---|---|---|---|---|---|
| | OR | 95% CI | OR | 95% CI | OR | 95% CI |
| Socioeconomic status low | 1.38 | 0.25 to 7.73 | 1.91 | 0.43 to 8.41 | 1.89 | 0.48 to 7.49 |
| WAI (VAS) low | 2.39 | 0.46 to 12.49 | 2.06 | 0.49 to 8.72 | **9.45** | **2.41 to 37.04** |
| Job strain high | 0.53 | 0.10 to 2.69 | 2.12 | 0.48 to 9.35 | 1.16 | 0.31 to 4.36 |
| SSYK-group healthcare/education | 2.03 | 0.31 to 13.25 | 0.94 | 0.19 to 4.82 | 0.97 | 0.22 to 4.37 |
| Social support low | 2.22 | 0.43 to 11.46 | 2.53 | 0.60 to 10.64 | 2.62 | 0.70 to 9.80 |

Bold figures indicate statistically significant OR.
SSYK-group, Standard for Swedish Occupation Classification-group; VAS, Visual Analogue Scale; WAI, Work Ability Index .

anxiety and stress-related mental symptoms in patients who receive sick leave certification based on CMD diagnoses is limited.

Psychotherapeutic treatment, predominantly in the form of cognitive behavioural therapy (CBT) and interpersonal therapy, is recommended in Swedish guidelines[16] for treatment of mild–moderate depression and anxiety syndromes, while treatment for stress-related mental disorder is not part of these guidelines. The consensus on care of adjustment disorder does not recommend CBT treatment in the first phase of the illness. Guidelines concerning stress-related mental disorders, especially for primary care, are urgently needed and must be based on evidence from clinical trials from the primary care context.

The results are probably generalisable to patients with depression, anxiety and/or stress-related mental disorder in Swedish PCCs regarding the complexity of the symptoms that require sick leave certification.

## Conclusions

Patients in primary care with symptoms of depression, anxiety and/or mental stress of a severity requiring sick leave certification are common. A great majority show high levels of depression, anxiety and stress on self-assessment scales and also on all of these symptom scales. However, the diagnosis on the sick certificate is not always congruent with the dominating symptom score level. Possible negative factors such as low socioeconomic status, low social support, high-work strain or working in healthcare/education sector did not show significant associations with total number of outcomes on the different self-assessment instruments. Only patient's perception of own poor work ability was associated with high scores on all three domains.

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