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An international comparison of occupational health guidelines for the management of mental disorders and stress-related psychological symptoms

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ABSTRACT

Background We compared available guidelines on the management of mental disorders and stress-related psychological symptoms in an occupational healthcare setting and determined their development and reporting quality.

Methods To identify eligible guidelines, we systematically searched National Guideline Clearinghouse, Guidelines International Network Library and PubMed. Members of the International Commission on Occupational Health (ICOH), were also consulted. Guidelines recommendations were compared and reporting quality was assessed using the AGREE II instrument.

Results Of 2126 titles retrieved, 14 guidelines were included: 1 Japanese, 2 Finnish, 2 Korean, 2 British and 7 Dutch. Four guidelines were of high-reporting quality. Best described was the *Scope and Purpose*, and the poorest described were competing interests (*Editorial independence*) and barriers and facilitators for implementation (*Applicability*). Key recommendations were often difficult to identify. Most guidelines recommend employing an inventory of symptoms, diagnostic classification, performance problems and workplace factors. All guidelines recommend specific return-to-work interventions, and most agreed on psychological treatment and communication between involved stakeholders.

Discussion Practice guidelines to address work disability due to mental disorders and stress-related symptoms are available in various countries around the world, however, these guidelines are difficult to find. To promote sharing, national guidelines should be accessible via established international databases. The quality of the guideline's developmental process varied considerably. To increase quality and applicability, guideline developers should adopt a common structure for the development and reporting of their guidelines, for example Appraisal of Guidelines for Research and Evaluation (AGREE) criteria. Owing to differences in social systems, developers can learn from each other through reviews of this kind.

INTRODUCTION

Mental disorders are among the leading causes of disability worldwide.¹ These disorders, such as depression, anxiety, adjustment disorders, as well as stress-related symptoms pose an important problem in occupational healthcare because of their negative impact on work capacity and productivity.² Mental disorders and stress-related symptoms, that is, psychological (work) stress reactions that have caused

What this paper adds

- Mental health problems are among the leading causes of disability worldwide and negatively impact work capacity and productivity.
- Practice guidelines are important instruments to promote evidence-based practice and increase the quality of care.
- This paper shows that practice guidelines developed to address work disability due to mental disorders and stress-related symptoms exist in various countries around the world.
- Occupational health guidelines are rarely available in electronic international databases, which hampers knowledge dissemination and translation.
- The content of the guideline recommendations is comparable, but not all available guidelines meet current standards for development and reporting quality.

various health symptoms, can lead to sick leave and long-lasting work disability.^{3 4} In several European countries, Australia and the USA mental disorders are highly prevalent in the working population.⁵⁻⁹ Therefore, mental disorders and stress-related symptoms should not only be considered an individual burden, but also a growing problem for the employers involved and society in general.

In Europe, the total costs of mental disorders (including healthcare costs and work disability costs) are estimated to be €240 billion annually.¹⁰ In Europe and the USA, mental health costs mainly arise from productivity losses due to sickness absence or reduction in work functioning.^{8 10 11} The latter is considered a largely hidden cost of mental disorders at the workplace.¹²

Considering the impact of sick leave and reduced work functioning on the individual and society, there is a need for effective management strategies. New evidence is constantly being developed and is usually published in scientific journals. However, for practitioners it is often not feasible to identify, read and interpret the search results for choosing a strategy to problems met in daily practice.¹³ This can result in large variations in quality of healthcare and can even lead to harmful care.¹⁴ Evidence-based practice guidelines are valuable tools to summarise and translate scientific evidence into recommendations that can be used in practice.^{15 16} A guideline is



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defined as “systematically developed statements to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances”.¹⁷ The purpose of guidelines is to make explicit recommendations with the intention to influence professional behaviour.¹⁸ Therefore, guidelines are important instruments to enhance treatment quality and decrease unnecessary variability in care.¹⁹

Owing to the growing impact of mental disorders and stress-related symptoms at work, we can expect more occupational health guidelines to be issued to improve the management of these health problems in the occupational context. These guidelines may be of different content since guidelines are based on the best-available scientific evidence, supplemented with clinical expertise, patient/worker preferences and tailored to local circumstances.²⁰ We know from previous studies that not only content but also the quality of development of guidelines can differ considerably.^{21–22} Recognising the increasing need for quality and transparency, several guideline organisations have set development standards.²³ In addition, instruments such as the Appraisal of Guidelines for Research and Evaluation (AGREE) are recognised as valuable tools to evaluate the key aspects of the guideline development process based on what is reported in the guideline.²⁴ As for occupational health guidelines on mental disorders and stress-related symptoms it is not clear what guidelines are used in different countries and if these guidelines meet currently accepted reporting quality criteria. Providing an overview of currently available guidelines can be useful for guideline developers to see how the evidence from literature is used in and adapted to the specific context in different situations.

This study aimed to identify occupational health guidelines focusing on the management of mental disorders and stress-related symptoms from different countries worldwide and to describe them, compare the content and assess their developmental and reporting quality. Specific research questions were: (1) What guidelines can be identified and to what extent are they comparable regarding recommendations for the assessment and treatment of mental disorders and stress-related symptoms, and (2) What is the developmental and reported quality of these occupational health guidelines?

METHODS

Search strategy

We used two search strategies to identify relevant guidelines: a systematic search in publicly available bibliographic databases and another search by consulting experts, that is, members of the International Commission on Occupational Health (ICOH).

First we searched in two guideline-specific databases: National Guideline Clearinghouse (NGC) and Guidelines International Network Library (G-I-N). In addition, we searched PubMed to trace relevant guidelines in biomedical literature by checking the content and reference lists of relevant reviews on guidelines. To develop a systematic search strategy we first translated our research question according to the PICO method (Patient/population, Intervention/exposure, Control, Outcome).²⁵ This resulted in three relevant groups: (1) Patient/population: Mental disorders and/or stress-related symptoms, (2) Intervention/exposure: Guidelines and (3) Outcome: occupational health outcomes. Including a Control component was not appropriate given our research question. For each search group we included terms and/or synonyms that were used as subject heading and/or text words (see online supplemental file 1). The first group of search terms represented the target population, that is, workers with mental disorders and/or stress-related symptoms. Having a mental disorder according to the Diagnostic and Statistical Manual fourth

edition (DSM-IV) classification or suffering from psychological and/or stress-related symptoms were the eligible conditions.^{8–26} The second group included terms concerning guidelines, and the third group embodied occupational health outcomes. We focused on a range of occupational health outcomes such as work participation, work functioning, quality of working life, work resumption and return to work. The selection of search terms was based on the Cochrane OSH group search strategy²⁷ and additional terms relevant for our research question. We combined the three groups of search terms with the operator ‘AND’, and we adjusted the string to function in each of the databases we used.

In the second search we consulted experts. Since many guidelines are not published in international medical journals, we contacted national occupational health organisations to identify guidelines. Sustaining and affiliate ICOH members whose contact details were publicly available on the ICOH website were contacted (see online supplemental file 2). During the period January to June 2012 the organisations from 22 countries spread across the world were contacted by email. Up to three reminders were sent in case of non-response. We asked (1) information on the existence of guidelines focusing on the management of workers with mental health problems in their own country, (2) the language in which the guideline was available, (3) if the contacted person could provide us with the guideline, and (4) or provide information about other organisations or key persons who could supply further information about this topic.

This review was designed and conducted according to the PRISMA statement for reporting systematic reviews.²⁸

Selection of guidelines

To be included in the review guidelines had to meet the following criteria: (1) meet the definition of a guideline by Field and Lohr¹⁷ (2) the subject was a mental disorder and/or stress-related symptoms and (3) the guideline addressed the management of the mental health problem primarily targeting occupational health outcomes. Guidelines were excluded if they did not contain specific recommendations for practitioners, focused on primary prevention only, or were not available as full text or comprehensive summary. We applied no language restrictions.

All documents retrieved were evaluated. First, the title and (if available) abstract were reviewed using the aforementioned eligibility criteria. This was performed by two independent reviewers (MJ reviewed 100%; EB, JvW and KvB each reviewed 33.3% of the documents). Disagreements were discussed until consensus was reached or the document was included for full text assessment. In the second step, the full-text documents were assessed by the same four reviewers against the inclusion and exclusion criteria. Disagreements were discussed until consensus was reached.

Data extraction and analysis

Comparison of guidelines

The content of the included guidelines was extracted, summarised and compared regarding the following topics: multidisciplinary of guideline committee, presentation of the guideline, target population, target users and the evidence level of the recommendations. Recommendations regarding assessment and management were summarised and compared. Only the parts of the guideline that dealt with treatment and management of problems were extracted and not with prevention of problems since this was not the focus of this review. The guidelines were assessed by researchers with relevant language skills (ie, native speakers with excellent command of English).

Assessment of developmental and reporting quality of guidelines

The quality of the guidelines was assessed using the Appraisal of Guidelines for Research and Evaluation (AGREE II) Instrument (<http://www.agreetrust.org>).²⁴ This is a validated generic tool to evaluate the process of guideline development and provides a systematic framework for assessing key components of clinical guideline quality. The instrument consists of 23 items grouped into six domains: (1) scope and purpose (ie, aim and target population), (2) stakeholder involvement (ie, are appropriate stakeholders involved in the development), (3) rigour of development (ie, process of gathering and synthesising the evidence), (4) clarity and presentation (ie, language, structure and format), (5) applicability (ie, likely barriers and facilitators to implementation) and (6) editorial independence (ie, potential competing interests). One item is added to score the overall quality of the guideline. Each item is rated from 1 (strongly disagree or no information provided on this item) to 7 (strongly agree). All information, including guideline documents and available supporting documents, about the development process was gathered prior to the appraisal. Per guideline, two researchers independently assessed the guideline. Three reviewers (JvdK, JvW and BT) were involved in the development of one or two of the included guidelines. To avoid conflict of interest, they were excluded from the appraisal of their own guidelines.

In agreement with the AGREE II manual, domain scores were calculated by summing all scores of the individual items in a domain, and by standardising the total as a percentage of the maximum possible score for that domain: ((Obtained score—Minimum possible score)/(Maximum possible score—Minimum possible score)) \times 100. In line with similar studies, we defined scores above 60% as good, scores of 30–60% as moderate and scores lower than 30% as poor quality.^{29 30}

RESULTS

Selection of guidelines

In total, 2126 titles were identified by the international search. After removing 12 duplicates, 2114 documents were reviewed for inclusion. On the basis of title and abstract 2002 documents

were excluded. After checking the reference lists of the full-text, seven documents were added.

A total of 119 full-text documents were reviewed. After applying the inclusion criteria, 14 documents were included from five different countries: 1 Japanese,³¹ 2 Finnish,^{32 33} 2 Korean,^{34 35} 2 British^{36 37} and 7 Dutch.^{38–44} Table 1 presents the title, country, agencies and year of publication of the included guidelines. The most frequent reasons for excluding full-text references was that the document was not a guideline (n=36), guidelines were developed for diagnostic purposes or focused on primary prevention (n=22), and guideline outcomes were not work related (n=21). Figure 1 is a flow chart of the inclusion process.

Characteristics and comparison of recommendations

Guideline characteristics

Table 2 presents background information on the development process of the included guidelines. Below, guideline characteristics are described including references to the specific guideline presented in table 1 (eg, GL 10 refers to the Japanese guideline).

The guideline development committee was in all but one case multidisciplinary, including disciplines such as occupational medicine, general practice, psychology, nursing, human resource management, researchers and workers' representatives. The guideline committee of the Dutch guideline for Psychologists consisted of psychologists only (GL 7). The included guidelines were presented as guideline documents, electronic documents or published in a (scientific) journal. Five guidelines were revised versions of previously developed guidelines (GL 1, 4, 5, 8 and 10). Four Dutch guidelines (GL 1–4) and one of the UK guidelines (GL 9) were developed using comprehensive literature searches to identify relevant literature, and provided information on the weighing of evidence. For three Dutch, two Finnish and two Korean guidelines (GL 5–7, 11–14) the recommendations were based on literature, but no or only limited information was provided on the search strategies and weighing of evidence. In the other UK guideline (GL 8) there were no direct links between recommendations and references. In the Japanese

Table 1 Included guidelines (country, title, development agency and year)

1. The Netherlands	"Management of mental health problems of workers by occupational physicians". The Netherlands Society of Occupational Medicine (2000, 1st edn.; 2007, 2nd revised edn.) ^{38 45}
2. The Netherlands	Multidisciplinary guideline adjustment disorders and burnout for primary health professionals", Dutch College of General Practitioners, National Society of Primary Care Psychologists, The Netherlands Society of Occupational Medicine (2011) ⁴¹
3. The Netherlands	"Multidisciplinary guideline employment support for people with severe mental health problems". Trimbo Institute of Mental Health and Addiction, The Netherlands Society of Occupational Medicine (concept V.2011) ³⁹
4. The Netherlands	"National Primary Care Collaboration Agreement (LESA): Adjustment disorders en burn-out". Dutch College of General Practitioners, National Society of Primary Care Psychologists, The Netherlands Society of Occupational Medicine (2005, 1st edn.; 2011, 2nd revised edn.) ^{40 46}
5. The Netherlands	"Dealing with physically unexplained complaints and somatization". STECR Expertise center Participation (2004, 1st edn.; 2006, 2nd revised edn.) ^{43 47}
6. The Netherlands	"Fighting work related stress in the Education and Health Care Sectors". STECR Expertise center Participation (2003) ⁴²
7. The Netherlands	"Work and Psychological symptoms: Guideline for Psychologists". The Dutch professional association of psychologists, National Society of Primary Care Psychologists (2005) ⁴⁴
8. The UK	"Mental Health and Employment in the NHS". NHS Employers (2002, 1st edn.; 2008 2nd revised edn.) ^{36 48}
9. The UK	"Workplace interventions for people with common mental health problems: evidence review and recommendations". British Occupational Health Research Foundation (2005) ³⁷
10. Japan	"Manual of support for RTW of workers absent with mental health problems". The Ministry of Health, Labour and Welfare (2004, 1st edn.; 2009, 2nd revised edn.) ³¹
11. Finland	"Depression. Good Practices in Occupational Health". Finnish Medical Society Duodecim (2009) ³²
12. Finland	"Work-related stress. Good Practices in Occupational Health". Finnish Medical Society Duodecim (2010) ³³
13. Republic of Korea	"Guideline for the initial response for acute stress after massive disaster at workplace". Korea Occupational Safety & Health Agency (2011) ³⁴
14. Republic of Korea	"Supervisors and Managers' guideline for the management of job stress". Korea Occupational Safety & Health Agency (2011) ³⁵

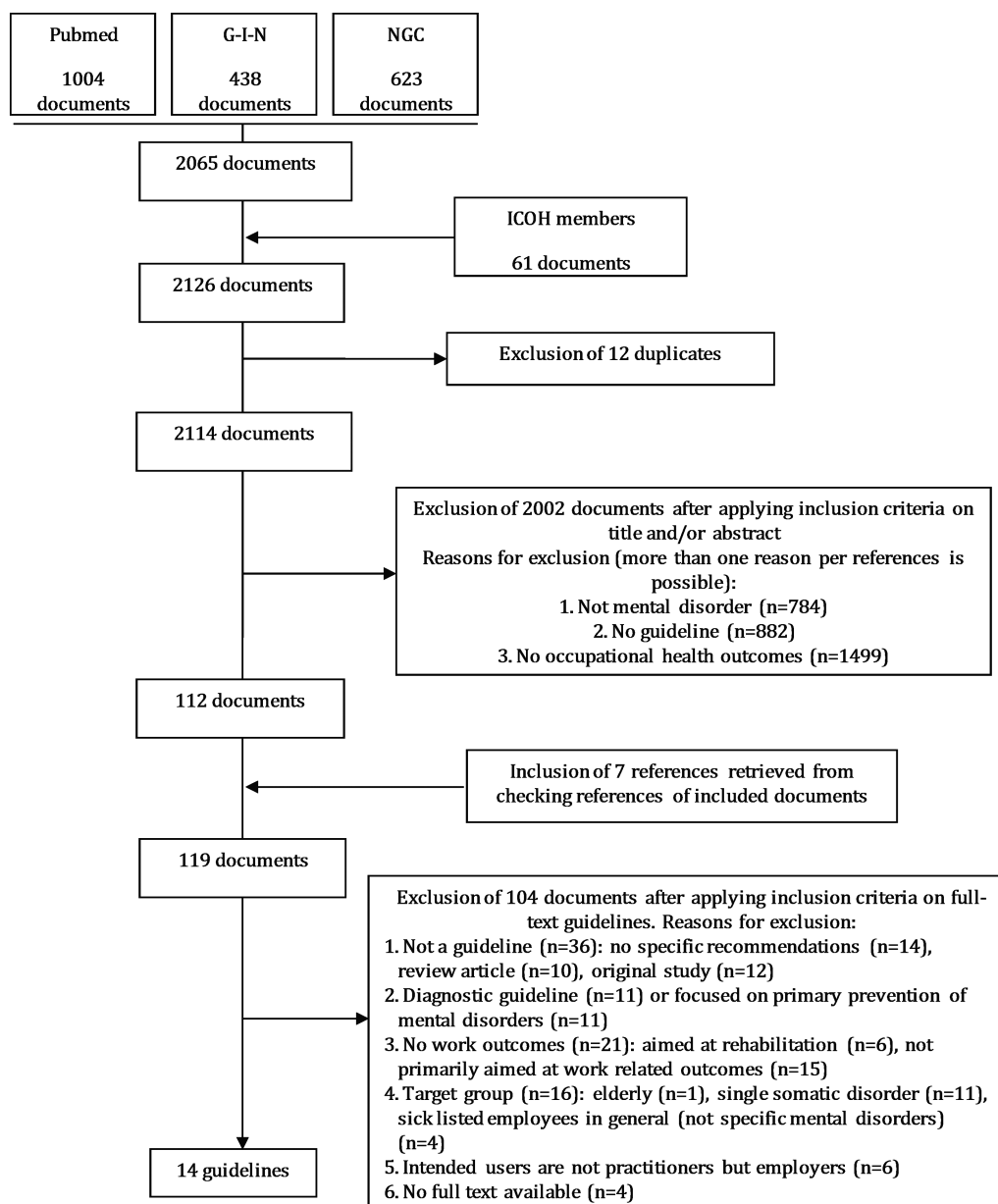


Figure 1 Flow chart of the inclusion process. Abbreviations: G-I-N, Guideline International Network; NGC, National Guideline Clearinghouse; ICOH, International Committee of Occupational Health.

guideline recommendations were based on professional discussion (GL 10).

Target population, objectives, assessment recommendations and management recommendations

Online supplementary table 3 provides details of the target population, guideline objectives and assessment recommendations (diagnostic classification and problem inventory) of the included guidelines. Online supplementary table 4 provides information on management recommendations. These findings are described below (including references to the guidelines).

Target population and guideline objectives

All guidelines focused on workers with mental health problems or psychological symptoms. However, target populations differed regarding the specific diagnosis (depression, anxiety disorders, adjustment disorders, medically unexplained symptoms,

mental health symptoms in general, work-related stress symptoms and loss of control due to disaster) and work status (workers on sick leave, workers with participation/performance problems, people who want to work). Depending on the target population and the user group, guideline objectives focused on different (but related) occupational health outcomes. Most guidelines aimed to improve return to work (GL 1, 4, 5–7, 9–11) and/or work retention (GL 1, 3, 6–9, 11, 12 and 14).

Guidelines recommendations regarding assessment

All but one guideline (GL 9) included recommendations on the assessment of workers. Regarding assessment of the individual, most guidelines agreed on assessing mental health symptoms. Some guidelines (GL 1, 3 and 12) recommended assessing symptoms in relation to limitation at work, or the stress process. Only two guidelines did not specifically include symptom assessment (GL 7 and 10). In case of the Dutch guideline for

Table 2 Guideline characteristics related to the development of the guideline (Guideline Committee, Target users, Presentation of the guideline and the Evidence level of the recommendations)

Guideline	Guideline committee	Target users	Presentation	Evidence base
1. The Netherlands (2007)	Multidisciplinary: occupational physicians, psychologists	Occupational physician	Guideline document: revised version of guideline from 2000; background document, summary	Comprehensive literature search, weighing of the evidence based on type and quality of studies
2. The Netherlands (2011)	Multidisciplinary: General practice, Occupational medicine, psychology	General practitioners, occupational physicians and psychologists	Guideline document	Comprehensive literature search, weighing of the evidence based on type and quality of studies
3. The Netherlands (2011)	Multidisciplinary: Occupational physicians, Insurance physicians, job coach, researcher, psychologist, psychiatrist, representatives of patients' association	(Care and occupational) professionals involved in the vocational rehabilitation of patients with (severe) mental illnesses	Concept version of Guideline document	Comprehensive literature search, weighing of the evidence based on type and quality of studies
4. The Netherlands (2011)	Multidisciplinary: General practice, Occupational medicine, psychology	General practitioners, occupational physicians and psychologists	Publication in Journal. Revised version of publication from 2005	Recommendations are based on the multidisciplinary guideline 'Adjustment disorders and burnout' (ie, guideline 5)
5. The Netherlands (2006)	Multidisciplinary: Occupational Physicians, psychologist, (medical) advisors, Insurance Physician	Occupational healthcare professionals, such as OPs, psychologists, occupational nurses and social workers	Guideline document: Revised version of guideline from 2004	Recommendations are based on literature and consensus. No explicit information about search strategies, weighing of evidence and/or links between literature and recommendations
6. The Netherlands (2003)	Multidisciplinary: Occupational Physicians, social worker, Work- and organization expert	Occupational healthcare professionals	Guideline document	Recommendations are based on literature and good practices. No explicit information about search strategies, weighing of evidence and/or links between literature and recommendations
7. The Netherlands (2005)	Monodisciplinary: psychologists	Psychologists	Guideline document; background document; practical guide of psychologists	Recommendations are based on literature and good practices. No explicit information about search strategies, weighing of evidence and/or links between literature and recommendations
8. The UK (2008)	Multidisciplinary: Occupational medicine, psychiatry, Health promotion, Department of health, Mental health	NHS managers and occupational health professionals	Guideline document. Revised version of guideline from 2002	Unknown if recommendations are based on literature. No explicit information about search strategies, weighing of evidence and/or links between literature and recommendations
9. The UK (2005)	Multidisciplinary: Researchers, Occupational health physicians, Psychiatrists, GPs, Managers, Health and Safety specialists, Disability rights specialists, Rehabilitation providers	Managers, occupational health professionals and other interested parties in making management decisions	Evidence review and recommendations; leaflet for Health professionals; leaflet for employers and employees	Comprehensive literature search, weighing of the evidence based on type and quality of the study (3-star system)
10. Japan (2009)	Multidisciplinary: occupational physicians, lawyer, union member, government officer occupational health nurse, psychiatrist, researchers, health and safety expert	Relevant actors at the workplace (eg, Occupational physician, management, supervisor, human resource personnel)	Guideline document. Revised version of guideline from 2004	Recommendations are based on professional discussion. No information about search strategies, weighing of evidence and/or links between literature and recommendations
11. Finland (2009)	Multidisciplinary: occupational health physicians, psychiatrists	Professionals in OHS (physicians, nurses, psychologists, psychiatrists, physiotherapists and others)	Electronic guideline document	Recommendations are based on literature search. There is limited information provided on search strategies, weighing of evidence and links between literature and recommendations
12. Finland (2010)	Multidisciplinary: occupational health physicians, nurses and psychologists	Occupational health physicians and nurses	Electronic guideline document	Recommendations are based on literature search. There is limited information provided on search strategies, weighing of evidence and links between literature and recommendations
13. Republic of Korea (2011)	Multidisciplinary: psychiatrists, occupational physicians, psychologists, government officers, occupational health and safety experts	Relevant managers and personnel at the workplace (eg, supervisors, occupational health professionals, human resources personnel, physicians)	Guideline document. First edition	Recommendations are based on literature search. No information on the search strategies is stated in the guideline. Weighing of evidence based on the quality of studies and feasibility
14. Republic of Korea (2011)	Multidisciplinary: psychiatrists, occupational physicians, psychologists, government officers, occupational health and safety experts	Relevant managers and personnel at the workplace (eg, supervisors, occupational health professionals, human resources personnel, physicians)	Guideline document. First edition	Recommendations are based on literature search. No information on the search strategies is stated in the guideline. Weighing of evidence based on the quality of studies and feasibility

LESA, Landelijke Eerstelijns Samenwerkings Afspraak (National Primary Care Collaboration Agreement).

psychologists, this was because this guideline focused on work in addition to care-as-usual, which included an extensive assessment of diagnostics and symptoms.⁴⁹ The Japanese guideline focused on functioning ability rather than on symptom reduction (GL 10). Classification of diagnosis was recommended by the majority of the guidelines, mostly to assess if the worker was eligible to be treated according to the guideline (GL 1–5, 7, 9 and 11) and/or for assessment reasons (GL 6 and 11). Most guidelines recommended assessing performance problems in the private and/or social life. In addition, all Dutch and both Korean guidelines recommended to examine factors of influence on recovery, such as barriers, perpetuating factors and stressors in private and working life. Four guidelines clearly described how to assess complications, such as suicide risk (GL 1), self-destructiveness (GL 11), and analysis of high-risk groups (GL 13 and 14). Three guidelines included recommendations concerning coping strategies, specifically suggesting assessment of the worker's problem-solving skills (GL 1, 2 and 4).

The importance of assessing workplace factors relevant to mental health and stress-related symptoms and the recovery process was addressed in all the guidelines except for one (GL 9). Mostly this concerned assessment of work context factors such as communication and/or problem-solving skills between worker and supervisor (GL 1, 2, 4, 7, 10, 13 and 14), supportive work environment (GL 1, 7, 10, 11 and 13), competencies and skills at work (GL 3, 10 and 13) and complications/risk factors: for example, work conflict (GL 1) and risks for coworkers (GL 8). Assessment of work content was recommended by four guidelines (GL 5–7 and 10; ie, assessment of workload/stressors and job content). In addition, assessing performance problems at work was recommended in three guidelines (GL 1, 4 and 11) and one guideline recommended assessing work factors that hindered recovery (GL 7). Some guidelines recommended an inventory of the needs for vocational rehabilitation and possible solutions at work (GL 3–5 and 11).

Guideline recommendations regarding management/treatment

We classified management and treatment recommendations into the following categories: Advice/Counselling, Specific mental health treatment, Specific Return-to-Work interventions, Referral to/Collaboration with other healthcare providers and stakeholders and Evaluation. In some guidelines recommendations were made regarding preventive measures, but these were not extracted as this was outside the scope of this review.

With respect to Advice/Counselling, all four of the most recently developed Dutch guidelines recommended a process-based approach of the recovery process (GL 1–4). This involves monitoring the recovery process, and facilitating this process by supportive but careful guidance and only intervening if the recovery process stagnates. The Finnish Depression guideline also included elements of this approach (GL 11). Furthermore, an activating approach (GL 4 and 13), early start of the guidance (GL 1, 4 and 8) and psychoeducation were recommended (GL 4, 5, 7 and 11). In addition, several guidelines agreed on the need to invest in communication with, and support of the worker (GL 5, 6, 11–14). Some guidelines recommended assisting/advising on financial support/grants (GL 3 and 11).

Recommendations on specific mental health treatment concerned mainly psychological interventions, in most cases cognitive (behavioural) interventions, or referring the worker to specialised treatment if the guideline user is not skilled or able to provide psychological care (GL 1, 2, 4–9, 11–13). Other treatment recommendations concerned the use of self-management programmes (GL 3), intervening on precipitating

and perpetuating factors relating the worker and their environment (GL 4 and 5), and the use of an Employee Assistance Programme (GL 10). Furthermore, three guidelines (GL 2, 4 and 11) agreed that medication was not (always) indicated, except in cases of severe mental disorders or severe constraints, such as severe depressive disorders or insomnia. The other guidelines did not include any recommendations concerning medication.

Return to work measures were recommended by all guidelines. Half of the guidelines recommended specific work adaptations such as reduction of stressful work conditions, lower work demands, simpler and easier work or prohibition of night shifts (GL 6–8, 10–12 and 14). The remaining guidelines focused on communication and advice for the employer and work setting. Advice consisted of practical problem-solving advice (GL 1), employer being actively involved by tackling precipitating and perpetuating work factors (GL 5 and 8), employer should keep in touch with sick-listed worker (GL 9) and return-to-work meetings with the worker and employer (GL 11). Three guidelines recommended to improve social reintegration at the workplace (GL 11, 13 and 14), by supporting the workplace (GL 12) or by giving instructions to the coworkers and avoiding stigma (Korean guidelines). Furthermore, one Dutch guideline recommended using the Individual Placement and Support model of Supported employment to achieve work participation (GL 3).

With respect to referral/collaboration, in most cases recommendations were related to communication of the treatment plan and/or cooperation between professionals, or involved stakeholders at the workplace (GL 2–5, 7, 8, 13 and 14). Five guidelines advised referral to the psychologist or psychiatrist if recovery stagnates, or exchanging information (GL 2, 4, 8, 10 and 11). Referral to specialised care was also recommended by five guidelines (GL 1, 2, 4, 5 and 11). In addition, four guidelines recommended referral to or discussion with the general practitioner in case of stagnation (GL 1, 2, 4 and 8). Three guidelines did not include specific recommendations concerning referral to or collaboration with other healthcare providers (GL 5, 9 and 12).

Ten guidelines highlighted evaluation recommendations (GL 1, 2, 4, 6, 7, 9–11, 13 and 14), four guidelines did not mention evaluation specifics (GL 3, 5, 8 and 12). Recommendations mainly contained follow-up sessions with the worker, supervisor and/or other care professionals and evaluation of the recovery process (GL 1, 2 and 4), work ability assessment (GL 6, 7 and 11), goals checking (GL 7), and/or exchange of information (GL 10).

Developmental and reporting quality of guidelines

Table 3 presents the AGREE domain scores of the appraised guidelines and the mean scores per domain. The 'scope and purpose' domain received the highest scores (73%). Overall, the aim and target population of the guidelines were well documented. Most guidelines (GL 1–5, 7–9, 13 and 14) scored over 60% in this domain.

On average, the domain 'Editorial independence' received the lowest scores (31%). Only one guideline (GL 3) included sufficient information on the independence of the funding body and acknowledgment of possible conflict of interest of the development group. Most guidelines did not explicitly mention this topic. Therefore, six guidelines scored moderate (GL 1, 3, 4, 7, 13 and 14) and seven guidelines (GL 5, 6, 8–12) scored poorly on this domain.

The domain 'Applicability', which pertains to the organisational, behavioural and cost implications of applying the guidelines scored only moderate (33%). Seven guidelines had

Table 3 Ratings on AGREE domains and mean scores per domain as a percentage of maximum possible score

AGREE domains	1. Scope and purpose	2. Stakeholder involvement	3. Rigour of development	4. Clarity and presentation	5. Applicability	6. Editorial independence	Overall score
Guidelines							
1. The Netherlands (2007): Mental health problems for OPs	94	83	54	64	44	46	67
2. The Netherlands (2011): MD adjustment disorder and burnout	89	75	67	89	48	67	67
3. The Netherlands (2011): MD severe mental illness	100	89	92	75	46	42	96
4. The Netherlands (2011): LESA adjustment disorder and burnout	75	69	52	75	54	38	58
5. The Netherlands (2006): Unexplained symptoms and somatisation	64	47	22	50	38	13	42
6. Netherlands (2003): Work-related stress	47	50	11	39	15	29	21
7. The Netherlands (2005): Work and psychological symptoms	72	53	14	36	19	42	25
8. UK (2008): NHS mental health	81	58	10	50	13	17	25
9. UK (2005): BOHRF common mental health problems	94	61	59	53	13	13	58
10. Japan (2009): RTW mental health problems	53	47	3	67	46	29	75
11. Finland (2009): Depression	47	33	24	36	19	8	33
12. Finland (2010): Work-related stress	39	39	25	28	25	17	33
13. Republic of Korea (2011): Stress after disaster at workplace	86	86	53	94	58	42	33
14. Republic of Korea (2011): Job stress	81	69	46	81	27	33	58
Mean scores	73	61.5	38	59.7	33	31	49.4

AGREE, Appraisal of Guidelines for Research and Evaluation; BOHRF, British Occupational Health Research Foundation; GP, general practitioner; MD, multidisciplinary guideline; NHS, National Health Service; OP, occupational physician; RTW, return to work.

moderate quality scores (GL 1–5, 10 and 13) and five guidelines were considered of poor quality on this domain (6–9, 11, 12 and 14).

As for the ‘Clarity of presentation’, on average the quality was moderate (59.7%). In some guidelines the recommendations were specific and unambiguous (GL 2, 3, 10, 13 and 14). However, in other guidelines recommendations were unclear or ambiguous, mere statements or simply repeated scientific evidence (GL 6, 7, 9, 11 and 12). In addition, key recommendations were often difficult to identify (GL 1, 5–8, 11 and 12).

On average the quality of the ‘Stakeholder involvement’ in the development of the guideline was good (61.5%). The majority of the guidelines had no or limited description of the development of the search methods (ie, ‘Rigour of development’). The two Dutch multidisciplinary guidelines were of good quality in (GL 3 and 4) and provided comprehensive information on the literature search (eg, search terms) selection criteria (eg, weighing of evidence criteria) and links between literature and recommendations.

Regarding the overall assessment of the guidelines, half of the guidelines (7/14; GL 4, 5, 9, 11–14) received a moderate quality score. Three were considered of poor quality (GL 6–8) and four of good quality (GL 1–3 and 10).

DISCUSSION

Considering the magnitude of the problem that mental disorders and stress-related problems can impose on workers, employers and society it is surprising that, after an extensive search, we found only five countries with one or more occupational health guidelines dealing with these problems. From six other countries, experts confirmed that no occupational health guidelines targeting mental health disorders or stress-related symptoms were available in their country.

The 14 included guidelines were in many ways similar. They had a shared focus in assessment of mental health symptoms and diagnosis, and inventory of performance problems in private and/or social life. All but one guideline addressed the importance of assessing work factors relevant to mental health symptoms and the recovery process. Guideline recommendations mainly focused on advice and counselling methods, and return to work interventions for occupational health professionals. In general, guidelines recommended providing psychological treatment, and several guidelines recommended promoting communication with the worker, and/or cooperation with the employer and other involved stakeholders. The discrepancies between the guidelines were mainly related to the methods used to list work factors and return-to-work interventions and the extent to which these were described.

Our results show that the developmental and reporting quality of occupational health guidelines on mental health problems varies considerably. According to our judgment, the developmental process of three guidelines was of low quality and only four were of good quality when assessed with the AGREE II instrument. The majority of the guidelines missed clearly formulated (key) recommendations. Furthermore, most guidelines inadequately reported editorial independence, barriers and facilitators for implementation and the process to gather and synthesise evidence. Best described was the ‘scope and purpose’ of the guidelines.

Methodological considerations and implications concerning quality and content of guidelines

Of the 14 included guidelines, three were developed in Asia and the remainder was from Europe. From Canada, USA, Australia, New Zealand, South Africa, Germany, Denmark and the Czech Republic we found documents addressing the problem of mental health problems in occupational health. These were

often good initiatives in preparation for practice guidelines and might also find its way to the general public, but did not meet our initial inclusion criteria.

Surprisingly, seven included guidelines were developed in the Netherlands. There are several possible reasons why some many Dutch guidelines were found. First, the organisation of the Dutch occupational healthcare system and its sociopolitical system, in which sick leave guidance by an occupational physician (OP) plays a central role. Over the past decades, mental health problems became the most important category for disability claims in the Netherlands. Consequently, there is a need for effective management strategies for OPs and related professionals. As guideline development is considered an important part of medical professionalism in the Netherlands, medical professional organisations actively participate in guideline development.⁵⁰ Second, most of the researchers involved in the present study are Dutch experts in the field of occupational medicine and/or mental healthcare and are familiar with Dutch guidelines. However, any researcher from another country, using the same thorough search method, would have found the same results.

Regarding the content, there was some variety between the guidelines. For example, variation in target users (OP, psychologist, manager, general physician), target population (eg, workers with depression, work-related stress problems or medically unexplained symptoms) and the objectives of the guidelines (eg, return to work, work retention, work functioning). These differences might have emerged from differences in healthcare systems, or differences in the membership of the guideline committees.²⁰ Also international variations in sickness and disability systems may play a role. For example, in the Netherlands sickness and disability compensation is provided regardless of the cause of disability, but in Finland only mental disorders are eligible for compensation and symptom diagnoses (such as stress and burnout) are not.⁹ In addition, in Canada,⁵¹ Australia⁵² and the USA⁵³ no mental health conditions are covered. These differences in systems may impact the content of guidelines; for instance interventions may be successful in one country but totally inappropriate in another given the differences in roles of caregivers and other stakeholders and the legal protections available to workers. As guideline recommendations should not be based on scientific evidence alone, but also take into consideration local circumstances, cross-cultural differences may be reflected in guidelines thereby making it difficult to compare the content of these guidelines.⁵⁴

Several other reviews have appraised the developmental and reporting quality of occupational health guidelines using the AGREE criteria and obtained similar results to those reported here. Although these studies were not exclusively focused on mental health problems, they also found that the 'purpose and objective' was well described in the guidelines, but that the stakeholder involvement, rigour of development, application and editorial independence was poorly reported.^{21 22 29 30 55} We found it difficult to extract the content of recommendations from the guidelines, since the recommendations were often presented in an unclear and/or ambiguous way (see AGREE scores on the domain 'Clarity and presentation'). Often, recommendations were merely statements or only presented evidence rather than clear recommendations. Moreover, key recommendations were not always easy to identify. In addition, none of the guidelines received a good quality score on the AGREE domain 'Applicability', which concerns a description of likely barriers and facilitators to implementation of the guideline. AGREE does not appraise the quality of the content of the guideline, nor does it assess the users' adherence to it in practice, or its

clinical impact, although the AGREE domains 'stakeholder involvement' and 'applicability' are relevant domains for the usability of the guideline. Moreover, low development and/or reporting quality can have a negative influence on the uptake of guidelines in practice.⁵⁶ The developing process and reporting of the recommendations is therefore of great importance for a successful implementation.

Strengths and limitations

Mental health disorders are among the leading causes of (work) disability and, according to the WHO depression will become the leading cause of burden of disease worldwide by 2030.¹ Given the impact that mental disorders and stress-related symptoms have on the individual, occupational setting and society in general, it is expected that more occupational guidelines in mental health will be developed. Since the medical, social and political context may differ between countries and possibly influence guideline recommendations, reviews such as this may help developers to learn from each other and improve the quality of their guidelines.

The results of this review need to be considered in the light of some methodological limitations. First, the methods we used to identify relevant occupational health guidelines do not guarantee that a representative sample was included. Guidelines were difficult to find since they (generally) are only available in their original language and are rarely indexed in MEDLINE. Moreover, the two guideline-specific databases G-I-N and NGC seldom contain occupational health guidelines. Only two of the included guidelines were found via systematically searching established electronic databases (GL 4 and 9). The remainder was discovered with the help of ICOH members who provided information on the existence of guidelines in their own country. Five representatives of national (ICOH) organisations did not reply to our survey request, preventing inclusion of possible unpublished guidelines from these countries. Despite this limitation, our search method of combining an extensive database search with knowledge from experts all over the world, is an innovative method compared with the search strategies of similar reviews.^{21 57} Although the responses of the ICOH members might not be representative for the entire situation in their respective country, it provided relevant information about the existence and non-existence of national occupational health guidelines, which was not revealed via the globally used databases. In addition, we did not restrict our search to English-language publications, which allowed us to include guidelines written in Finnish, Korean, Japanese and Dutch. To reduce the chance of missing information when translating the guidelines, these non-English guidelines were appraised by native speaking researchers with excellent command of English.

A second limitation might be the inclusion and comparison of four guidelines that were developed more than 6 years ago (GL 5–7 and 9). Assuming that these guidelines were based on the latest scientific evidence available at that time, comparison of the content with recently developed guidelines might provide slightly distorted results. However, since the aim of this review was to collect currently available guidelines, we did not impose any restrictions on publication date.

Recommendations for future guidelines

This review shows that occupational health guidelines on mental health problems are difficult to identify. Only two out of 14 guidelines could be found in electronic databases. To enable guideline developers, implementers and researchers to learn from each other, national guidelines should be accessible via

international databases and preferably be available in English. To improve quality, applicability and implementation of guidelines, guideline committees should adopt a common structure for the development and reporting of their guidelines. Preferably, developers should follow currently available minimal quality criteria for the development of guidelines.²³ Moreover, we recommend that guideline developers publish their 'background' study and their literature study, and clearly describe how they derived recommendations from the available evidence. When high-quality guidelines will be developed, then, other developers can adapt these guidelines, use the same evidence and decide whether the considerations are valid for their context.⁵⁸

Compared to clinical guidelines, occupational health guidelines are still rarely available in international databases such as G-I-N and NGC. Considering the scope of the problem of sickness absence due to mental health problems and its personal and financial consequences, integration of work-related aspects and occupational health advice in guidelines should be stimulated.^{59–60} So-called multidisciplinary guidelines are good examples of initiatives to close the gap between general healthcare and occupational healthcare.^{39–41, 59}

Finally, for those guidelines that are 'out of date' but still relevant for daily practice, we recommend updating them so that the recommendations are consistent with current scientific evidence and expert and worker opinion.

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Supplemental file 1. The search categories and the search terms used.

Search categories	Patient/population: Mental Disorders	Intervention/exposure: Guideline	Outcome: Occupational Health Outcomes
Terms that were used as subject headings and/or text words	"Mental disorders" [Mesh] "Common mental disorder" "mental disease" "mental illness" "mental fatigue" "psychological disorder" "Adjustment disorders" "Anxiety disorder" "mood disorder" Depression Burnout "occupational stress" "Nervous breakdown"	"Practice Guideline" Guidelines Protocol Standard "consensus statement" "position paper"	Worker Occupational "Return-to-work" "Sick leave" Absenteeism

Supplemental file 2. Inclusion process guidelines via experts (Organizations that were contacted; their answers to the question if guidelines were available that focus on mental health problems at work; in which language these guidelines were available; and, whether or not the guideline was included in this review).

Country	Organization	Guideline available?	In which language?	Included in the review?
UK	- The Society of Occupational Medicine - International Institute of Risk and Safety Management	Yes	English	Yes
Netherlands	- Nederlandse Vereniging voor Arbeids- en Bedrijfsgezondheid (NVAB) - Stichting Arbeid Nederland	Yes	Dutch	Yes
Italy	- Italian Society of Occupational Medicine and Industrial Hygiene (SIMLII) - Associazione Italiana di Radioprotezione Medica (AIRM) - Fondazione Salvatore Maugeri Italy - Italian Workers' Compensation Authority (INAIL) - Clinica del Lavoro "L. Devoto" Italy	No (not specifically for mental disorders but focusing on work disability in general)		
Finland	- The Finnish Work Environment Fund - The Finnish Association of Occupational Health Nurses (FAOHN) - Finnish Institute of Occupational Health	Yes	Finnish	Yes
Japan	- Japan Society for Occupational Health - The Promotion Foundation of OH - University of Occupational & Environmental Health Japan	Yes	Japanese	Yes
Sweden	- Prevent Sweden	Did not provide information		
USA	- American Board for Occupational Health Nurses (ABOHN) - The American Association of Occupational Health Nurses Inc. (AAOHN) - The National Institute for Occupational Safety and Health	Yes	English	No, not primary focused on mental disorders or occupational health outcomes.
Brazil	- Fundacentro	Did not provide information		
Republic of Korea	- Korea Occupational Safety & Health Agency	Yes	Korean	Yes

Country	Organization	Guideline available?	In which language?	Included in the review?
France	- Institut National de Recherche et de Sécurité pour la prévention des accidents du travail et des maladies professionnelles	Did not provide information		
Germany	- Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (BAuA)	Yes	German	No, document did not meet criteria to be considered a guideline
Czech Republic	- Czech society of Occupational Medicine	Yes	English	No, document did not meet criteria to be considered a guideline
Thailand	- Thai Bureau of Occupational and Environmental Diseases	No		
Croatia	- Croatian society on Occupational Health	No		
Canada	- Canadian Occupational Health Nurses Association Inc - Institut de recherche Robert-Sauvé en santé et en sécurité du travail	Yes / Yes	English / French	No, not primary focused on the management of patients with mental disorders in relation to work.
Argentina	- Sociedad de Medicina del Trabajo de la Provincia de Buenos Aires	Did not provide information		
South-Africa	- South African Society of Occupational Medicine (SASOM)	Yes	English	No, not primary focused on the management of patients with mental disorders in relation to work.
Belgium	- Flemish Organization of Nurses Working in Occupational Health	No		
Portugal	- Sociedade Portuguesa de Medicina do Trabalho	No		
India	- Indian Association of Occupational Health	No		
Philippines	- Philippine College of Occupational Medicine (PCOM)	Did not provide information		
Australia/ New Zealand	- Australian and New Zealand Society of Occupational Medicine	Yes	English	No, , document did not meet criteria to be considered a guideline.

Supplemental file 3. Recommendations regarding the assessment of common mental disorders (Objective, target population,, Diagnostic classification, Problem inventory including the assessment and specific workplace factors)

Guideline	Objective	Target population	Diagnostic classification	Problem inventory	
				Assessment	Specific Workplace factors
1. Netherlands (2007)	To provide a guideline for OPs to optimally support workers with mental health problems and their work environment to retain or recover participation.	Workers that suffer from loss of control and performance problems due to adjustment disorders, depression, anxiety disorders or other psychiatric disorders.	- Inclusion criteria based on the DSM IV classification. - Do not apply when complaints are direct result of acute emotional state or a somatic condition.	- Assess complaints, performance problems, causal factors. - Assess problem solving skills of the worker. - Assess to what extent the complaints can be explained by a stress process. - Assess possible complications: suicide risk, somatic fixation, irrational cognitions, victims of harassment, irrational cognitions or rigid personality traits. - Assess if recovery process does not stagnate	- Assess performance problems, causal factors. - Assess problem solving skills of the worker and the manager, interaction between worker and manager - Assess possible complications: conflicts in the work situation
2. Netherlands (2011)	To provide guidelines on best collaborative care for patients with adjustment disorders and burnout	Patients with adjustment disorders and/or burnout and participation problems	Inclusion criteria based on the DSM IV classification (exclusion of depression and anxiety disorders)	- Assess complaints, performance problems, predisposing-, precipitating-, and perpetuating factors, and problem-solving skills of the worker. - In addition use a diagnostic tool - When there are doubts about the involvement of context factors use specific questionnaires	- Assess problem-solving skills of the worker and supervisor, and interaction between worker and supervisor
3. Netherlands (2011)	Work participation of patients with severe mental disorders	People with severe psychiatric disorders who want to participate at work.	Inclusion according to DSM-IV-TR classification, social disability and long-term problem.	- Take into account the psychiatric condition and limitations and their effect on work(situation) - Discuss barriers and possible solutions for work retentions with the client, including the assessment of involvement of other professionals.	- Assessment of competencies and skills at work ('situational assessment') using the Work Behavior Inventory to assess the support that is needed to retain work. - Use the tool 'Illness Self-management assessment in psychiatric vocational rehabilitation' to assess the applied strategies concerning work retention

Guideline	Objective	Target population	Diagnostic classification	Problem inventory	
				Assessment	Specific Workplace factors
4. Netherlands (2011)	Improve collaboration of care in patients with adjustment disorders and burnout	Patients with adjustment disorders and/or burnout	Stress-related complaints, adjustment disorders, Burnout.	Examination of complaints, degree of distress, functional disabilities in society, work and private life; Perceived precipitating factors, perspectives for recovery and possible solutions in private- or work environment; Determine problem-solving capacity of the worker.	Examination of functional disabilities at work; possible solutions in work environment; Determine problem-solving capacity of the worker and (work) environment.
5. Netherlands (2006)	Provide guidelines on diagnosis, interventions and guidance in short and long-term medically unexplained symptoms.	Workers with medically unexplained symptoms and Somatization	Inclusion according to DSM-IV classification of somatoform disorders or process definition of Lipowski.	<ul style="list-style-type: none"> - Check for factors that can obstruct RTW or work functioning using 4DSQ or somatization- or diagnostic screener. - Explore complaints, perceived limitations and RTW; Psychical examination when necessary for diagnostic purposes - Dimensional diagnosis using diagnostic guide for medically unexplained symptoms and excluding depression, anxiety- or a somatic disorder. 	- Multifactorial problem analysis: Explore stressors at work (and in private live) and coping strategies.
6. Netherlands (2003)	Provide guidelines on the assessment of causes of work-related stress in organizations and provide advice on interventions based on stress reduction in workers in the health care and education setting.	Employers and employees working in health care- and education setting	Work-related stress at individual and organizational level	- Individual worker with stress: Set diagnosis: stress-related complaints, adjustment disorder, burnout or psychiatric problems including depression and anxiety disorders; Explore stressors related to private life, personality, work and organization	- Explore stressors at work and organization focusing on demanding work factors.
7. Netherlands (2005)	Addressing the topic work into the management of mental health problems by psychologists	Patients with mental complaints who are working or want to work	There are not specific diagnostics criteria in the guideline. Inclusion criteria based on the professional diagnosis	- Explore wishes and needs regarding work, reasons for sick leave including previous sick leave periods, factors that hinder and promote RTW.	- Explore work situation: Work factors that hinder or enhance recovery; contact with work environment/employer; assessment of work content, work relations, work setting, work conditions.
8. UK (2008)	Provide NHS managers and occupational health professionals with the tools they need to assess the suitability of persons having mental health problems who wish	Persons having mental health problems who wish to work or already working in the NHS	Harmful levels of stress, depression, anxiety, schizophrenia, bi-polar disorder, psychosis, obsessive compulsive	<ul style="list-style-type: none"> - Detailed assessment of employee's health based on clinical assessment, sickness absence records, information given by manager - In some cases, require detailed 	Take following point in consideration: effect of health problem on individual, does this explain observed behavior, risks for others in the workplace, rise of other

	to work or already work in the NHS.		disorder.	assessment by psychiatrist or clinical psychologist on mental health problem	problems in workplace, does work harm individual
Guideline	Objective	Target population	Diagnostic classification	Problem inventory	
				Assessment	Specific Workplace factors
9. UK (2005)	Provide evidence-based answers on questions related to prevention, retention and rehabilitation mental disorders in the work environment.	People with mental disorders and mental distress (common mental health problems) in the work environment.	Common mental health problems which occur most frequently and are more prevalent, are most successfully treated in primary care, and are least disabling in terms of stigmatizing attitudes and discriminatory behavior. Exclusion of severe mental ill health (as defined by the National Service Framework for Mental Health).	Not specifically mentioned in the guideline	Not specifically mentioned in the guideline
10. Japan (2009)	To provide a guideline to optimally support workers with mental health problems who want to return to work	Employees with common mental health problems	There are not specific diagnostics criteria in the guideline. Inclusion criteria based on the professional diagnosis	-Professional judgment of mental health physician in charge about starting of the RTW process -Assess if employee: is able to commute safely; can perform tasks for fixed working hours (e.g.8 hours); experiences side effects of medication	-Evaluate the work environment: does it fits the employee; communication with co-workers and supervisor; the degree of quantitative and qualitative work load; is workplace climate supportive; possibilities to change the workplace - Identify risk factors: supervisor's concern for the employee condition; coworker support; understanding for the employee's condition and consideration
11. Finland (2009)	Guideline is meant for depression prevention, management and rehabilitation for professionals in OHS	Employees with depressive disorder	Patients with a depressive disorder or recurrent depressive disorders (according to ICD criteria) but fits also other depression symptoms	Holistic/general assessment: - Diagnostics of depression and other mental health complaints - Assess self-destruction, life events, social support outside work - Lab diagnostics if needed for differential diagnosis	- Assess the workplace, work conditions, social support within work - Assess rehabilitation needs and work ability - Sometimes additional information from neuropsychological, work psychologists, occupational therapist and policlinical or hospital investigations.

Guideline	Objective	Target population	Diagnostic classification	Problem inventory	
				Assessment	Specific Workplace factors
12 Finland (2010)	The guideline is meant for the information, recognition, prevention and management of work-related stress	Employees with work-related stress symptoms	Workers exposed to a number of stress provoking factors	Use one question from the stress-meter to assess if it is work-related	A list is provided with several dozen psychological, social and work demand factors that increase the likelihood of stress. (unclear if all of these should be assessed in an individual patient.)
13. Republic of Korea (2011)	To provide a guideline to optimally support workers and their workplace with acute stress problems after disaster	Workers that suffer from loss of control and performance problems due to disaster	There are not specific diagnostics criteria in the guideline. Inclusion criteria based on the professional diagnosis	<ul style="list-style-type: none"> - Assess complaints, initial symptoms, suicidality, depression, alcohol problems, general mental health - Assess physical and mental safety and integrity, resources which can be used and mobilized. - Assess if recovery process does not stagnate - Further evaluation of high risk group 	Evaluate the work environment: does it fits the employee; communication with co-workers and supervisor; operation of crisis intervention center at workplace
14. Republic of Korea (2011)	To provide a guideline to optimally support managers and supervisors who have to help workers with job-related stress problems	Workers that suffer from job-related stress	There are not specific diagnostics criteria in the guideline. Inclusion criteria based on the professional diagnosis	<ul style="list-style-type: none"> - Assess complaints, initial symptoms, usual behaviors and emotional states, and recent distinct changes - Assess physical and mental safety and integrity - Assess high risk groups who want to RTW after sickness leave. 	<ul style="list-style-type: none"> - Evaluate the work environment: communication with co-workers and supervisor; - Provide theoretical model of job-related stress (based on NIOSH) - Assess Supervisor's role in early detection of signs and symptoms

Supplemental file 4. Recommendations regarding the treatment of mental disorders (Information on advice/counseling, specific treatment of mental health problem, specific return to work interventions, external consultation, referral and collaboration, and evaluation).

Guideline	Advice / counseling	Specific treatment of mental health problem	Specific Return to work interventions	External consultation referral, collaboration	Evaluation
1. Netherlands (2007)	<ul style="list-style-type: none"> - Minimally conduct the role of process facilitator and consider intervening on level of the worker and/or work system. - When recovery process is normal: Provide supportive but cautious guidance and monitor further recovery process - In case of stagnation of recovery: indicate and initiate interventions and ensure adequate implementation. - Monitor complaints pattern through monthly diagnostics to exclude that complaints develop into depressive or anxiety disorder. 	<ul style="list-style-type: none"> - Support the worker when taking recovery steps using simple cognitive behavioral interventions such as providing rationality, perspective, daily structure, positive re-labeling. Or - Refer the worker to a specialized intervention and supervise the recovery process. 	<ul style="list-style-type: none"> - Give explanations, information and support to supervisors and others involved in the RTW process - Give supervisors and worker practical problem-solving advices regarding RTW 	<ul style="list-style-type: none"> - Discuss with the general practitioner if the complaint pattern and suffering remain unchanged or worsen over the course of two months. - Discuss with the general practitioner when having doubts about medication or when stagnation is primary caused by problems in private setting. - Refer the worker to a specialized care (e.g. social worker, psychologist or psychiatrist) when recovery stagnates and supervise the recovery process 	<ul style="list-style-type: none"> - Counselling by OP continues until after full resumption of work - Follow-up meetings with worker every 3 weeks in the first 3 months, and every 6 weeks after 3 months; with supervisor every 4 weeks; with other care practitioners in stagnation or relapse; with labour experts if structural work adjustments are necessary or when RTW with current employer is not possible
2. Netherlands (2011)	<ul style="list-style-type: none"> - Monitor the recovery process and consider intervening when necessary - Start guidance within 2 weeks. 	<ul style="list-style-type: none"> - No indication to give medication. When medication is used, only use this for maximum 2 weeks. - Provide information, perspective and activating structural guidance - Treatment to reduce complaints preferable by GP or psychologist, but not within first 6 weeks. 	<ul style="list-style-type: none"> - Apply process contingent, activating approach based on cognitive behavioral therapy by a professional with close contact to work environment. 	<ul style="list-style-type: none"> - Communicate the treatment plan between professionals; - Referral to psychologist when recovery stagnates for more than 3 weeks, in case of burnout, when having doubts about diagnosis; - Referral to OP in case of a conflict at work, work related factors that hinder recovery; - Referral to GP when stagnation is caused by problems in private setting; - Referral to specialized interventions when recovery stagnates despite treatment by psychologist 	<ul style="list-style-type: none"> - Evaluate the recovery process with focus on the problem-solving skills of the patient.

Guideline	Advice / counseling	Specific treatment of mental health problem	Specific Return to work interventions	External consultation referral, collaboration	Evaluation
3. Netherlands (2011)	- Advice client and employer on financial support/grants, possibilities to receive guidance, and actively guide them with these interventions.	- Use self-management programs and strategies to enhance work retention.	- Provide IPS (the Individual Placement and Support model of Supported employment). - Job coaching focused on the worker and his social and physical work environment (include perspective of the employer)	- Full cooperation between involved agencies (including occupational health services, insurance agencies, municipalities, mental health organizations) - Different professions should be better aware of each other's working methods and responsibilities (e.g. by joined education) - Enhance collaboration between mental health organizations and employment specialists.	No recommendations
4. Netherlands (2011)	- Guidance according to principles of process-based evaluation; start treatment within 2 weeks including education, explanation of prognosis and activating interventions. - GP focuses on the patients and his environment;	- When recover stagnates intervene on precipitating-, and perpetuating factors within patient and their environment; refer patient to specialized interventions. - No medication, or only temporarily in case of severe constraints such as insomnia or functional/physical complaints. - psychologist focuses on psychological diagnostics and interventions;	OP focuses on occupational health and his knowledge regarding the work situation.	- Communicate treatment plan between care providers - Refer to psychologist when recovery stagnated for more than 3 weeks, in case of burnout, when having doubts about diagnosis; - Refer to OP in case of a conflict at work, work related factors that hinder recovery; to GP when stagnation is primary caused by problems in private setting; to specialized interventions when recovery stagnates despite treatment by psychologist	Evaluate recovery process every 3 weeks: determine which factors hinder recovery and advice or start intervention.

Guideline	Advice / counseling	Specific treatment of mental health problem	Specific Return to work interventions	External consultation referral, collaboration	Evaluation
5. Netherlands (2006)	<ul style="list-style-type: none"> - Take the complaint seriously: support the worker and show empathy. - Widen the focus from somatic complaints to more psychological aspects and other influencing factors such as stressors at work and in private life, coping strategies. - Provide psycho-education: link between complaints and stressors and coping strategies, explanation of vicious circle and cognitions regarding activities and work. - Determine policy: plan reasonable actions concerning workload and RTW 	<ul style="list-style-type: none"> - When causes are unclear or can not be influenced, set up behavior rules and focus on factors that can be influenced. 	<ul style="list-style-type: none"> - Employer should stimulate to talk about (causes of) complaints in an early stage - Employer should actively be involved in case of sick leave by tackling precipitating-, and perpetuating factors at work, keep in contact with worker (every 2 weeks), proactively consultation with OP about managing sick leave and RTW. - OPs should report obstructing factor at department or organization level to employer 	<ul style="list-style-type: none"> - Policy should be congruent with curative care, otherwise consult/communicate with involved professional - Refer to specialized treatment that enhances recovery and RTW if recovery stagnates. 	No recommendations
6. Netherlands (2003)	<ul style="list-style-type: none"> - Guidance program focused on stress reduction and RTW of the worker can involve individual and organizational interventions. Commitment of the employer and supervisor is essential. 	<ul style="list-style-type: none"> - Improve individual's capacity and coping strategies by using cognitive (behavioral) techniques. 	<ul style="list-style-type: none"> - Reduce stressful work conditions by suggesting interventions for specific stressors (indicated in the problem/stressor inventory). 	No recommendations	<ul style="list-style-type: none"> - Regular evaluation of the balance between load and capacity of the worker and check if the interventions on organizational level contribute to reduction of load of the individual worker. Reconsider the interventions is necessary.
7. Netherlands (2005)	<ul style="list-style-type: none"> - Psychologist as advisor and coach: activating and problem solving approach focused on recovery of (work)participation 	Treatment plan based on Problem inventory using cognitive behavioral techniques	<ul style="list-style-type: none"> Advises concerning work adjustments and organizations factors. - Check if treatment plan matches RTW plan made by client and employer. 	Refer client to or collaborate with involved work actors such as human resources managers, supervisor, OP, social worker.	<ul style="list-style-type: none"> - Check what has changed and if goals are met. Intervene if necessary. - Relapse prevention at end of guidance: check if client can formulate work related aspects that influence his/her work ability and psychological problems.

Guideline	Advice / counseling	Specific treatment of mental health problem	Specific Return to work interventions	External consultation referral, collaboration	Evaluation
8. UK (2008)	- Involvement of Occupational Health service as soon as possible.	- Ensure that employee receives appropriate health care by advising to seek help, and to facilitate 'out of area' treatment if appropriate.	- OP: Advise employer in non-medical terms and without breaching the confidentiality on whether or not individual has a health condition, how this impact work ability, and workplace adjustment that would improve workability - OP: working with employee and clinicians to facilitate RTW through job modification and rehabilitation at workplace - Employer: enable disabled people to make the most of their abilities at work by providing active help to move into work, taking obstacles out of the benefits system, promoting equality and opportunity in the workplace	- OP should assist the employee to access appropriate support through their GP, local mental health service or elsewhere	No recommendations
9. UK (2005)	Consider interventions to train and improve supervisory behavior	Interventions by GPs, OPs, and psychologists should be cognitive in nature; for people with CMD Cognitive behavioral therapy (CBT) in brief therapy sessions for up to 8 weeks is recommended; for those off sick for 2 weeks early psychological interventions should comprise 4-5 sessions of CBT to increase activity and coping skills delivered in the workplace.	Supervisors should keep in touch with employees on mental ill health sickness absence at least once every 2 weeks	No recommendations	Interventions are more effective at sustaining changes if they include booster and follow-up sessions.

Guideline	Advice / counseling	Specific treatment of mental health problem	Specific Return to work interventions	External consultation referral, collaboration	Evaluation
10. Japan (2009)	<ul style="list-style-type: none"> - Make a RTW program in the company which involves relevant actors systemically - Company management or supervisor have to consider employee's work load based on professional advices to fit the work smoothly. - Make use of short hours (e.g. 4 hours) working program to return to work smoothly during two weeks. 	<ul style="list-style-type: none"> - Make use of the Employee Assistance Program (EAP) 	<ul style="list-style-type: none"> - Less than 8 hours work - Prohibition of overnight work, over time work and shift work - Prohibition of driving a car at work - Restriction of business trips - Exemption of stressful work (e.g. negotiation with difficult customer, shortening delivery time, complicated work) 	<ul style="list-style-type: none"> - Effective exchange of medical information between psychiatrist and OP - Consult psychiatrist in charge when content restriction to work is difficult to judge - Make use of second opinion to get professional advice from another psychiatrist 	<ul style="list-style-type: none"> - Regular follow-up meetings with the worker. - Regulatory exchange of the employee's condition information among relevant actors (worker, supervisor, psychiatrist and occupational staff)
11. Finland (2009)	<ul style="list-style-type: none"> - Assessment can be also considered care - Offer psychosocial support: give information on symptoms, treatment possibilities and outcomes; explore all areas of work and life and their problems, especially work related problems - OHS should take care that: treatment is completed as planned and effective; the worker is not deactivated; RTW actions between employee and employer are planned at the right time; workplace accommodations are realized. - Assess if it is possible to receive economic support for 'pension fund rehabilitation' 	<ul style="list-style-type: none"> - Prescribe medication if needed for moderate to severe depression - Refer to medical rehabilitation such as individual or group psychotherapy - Refer to social rehabilitation in case of substance abuse. 	<ul style="list-style-type: none"> - Assess workers own understanding of causes in work and possible solutions - Assess together with worker, employer and OP if changing work would help (temporary or permanent) - Provide vocational rehabilitation such as work trial or work preparation - Support at the workplace - Organize RTW talks with employer and employee 	<ul style="list-style-type: none"> - Assessment information from nurses and psychologists can be used - OP can use psychiatrists advice for sick leave benefits assessment - Refer if needed to special care (assess if OHS resources can be used for special care) 	<ul style="list-style-type: none"> - Perform regular workability assessment in OHS - Follow-up /monitor RTW and work trial outcomes
12. Finland (2010)	<ul style="list-style-type: none"> Assess the need for: - opportunities at the workplace for early rehabilitation support, tripartite talks (worker, supervisor and OP), stress management at personal and organizational level and need for medical and other care and its organisation (fatigue, depression) 	<ul style="list-style-type: none"> - Cognitive-behavioural interventions, stress management, yoga, mindfulness, feedback on questions in stress questionnaire 	<ul style="list-style-type: none"> An arrangement for lower work demands quantitatively and qualitatively should be made when workability is low. (see depression guideline) 	<ul style="list-style-type: none"> No recommendations 	<ul style="list-style-type: none"> No recommendations

	- need for sick leave (short term or part time)				
Guideline	Advice / counseling	Specific treatment of mental health problem	Specific Return to work interventions	External consultation referral, collaboration	Evaluation
13. Republic of Korea (2011)	<ul style="list-style-type: none"> - Provide psychological crisis intervention - Give reassurance and keep confidentiality - Confirm safety and survival - Provide safe and comfortable environment - Encourage and support - Give advice on maintaining continuous relationship with someone who can be trusted - Educate the importance of maintaining regular and healthy routine. 	Check criteria of referral and professional care/treatment (e.g. self harm, harm to others, need medication to stabilize, history of emotional and behavioral problems, long-lasting symptoms)	<ul style="list-style-type: none"> - Give explanations, information and support to those involved in the work environment - Give practical problem-solving advices regarding self-care - Give instructions to the group and organization which the victims belonged to 	<ul style="list-style-type: none"> - Effective exchange of medical information between workplace and professional agencies - Give contact information of main resources (e.g. EAP agency, Governmental organization, suicide prevention center) 	<ul style="list-style-type: none"> - Counselling until full resumption of work - Follow-up meetings with worker after 3 months; for high risk group, every month for 3 months and re-evaluate in 3 months
14. Republic of Korea (2011)	<ul style="list-style-type: none"> - Communicate and build trustworthy relationship with workers - Give advice on improving coping ability - Make a RTW program in the company which involve relevant actors systemically - Company management or supervisor has to consider employee's work load based on professional advice to fit the work smoothly. 	Evaluate mental status of workers and advice counseling with OP, healthcare professionals, and industry counselors, etc.	<ul style="list-style-type: none"> - Exemption of stressful work - Adjust the workload - Give simpler and easier work - Show respect to prescribed medication and avoid stigma - Give instructions to organization and colleagues of the worker 	<ul style="list-style-type: none"> - Effective exchange medical information between workplace and professional agencies - Give contact information of main resources (e.g. EAP agency, Governmental organization, suicide prevention center) 	Follow up between 3~6 months