CHAPTER 2

Return to work interventions for adjustment disorders

ABSTRACT

Background
Absenteeism among workers is often caused by emotional and psychological stress related to significant life events. Stress often leads to symptoms and impaired functioning and can result in an acute adjustment disorder. Currently no systematic review on return to work interventions for adjustment disorders of workers on sick leave exists, and is the focus of this review.

Objectives
1. To evaluate the effectiveness of interventions aimed at return to work for workers with adjustment disorders.
2. To assess heterogeneity of each intervention and perform a meta-analysis for homogeneous groups of studies.

Search methods
Electronic database searches of the CCDAN Controlled Trials Register, Cochrane Controlled Trials Register, Cochrane Library CENTRAL Register, Cochrane Occupational Health Field Trials and Review Database, MEDLINE, EMBASE, and PsycINFO were performed. The reference lists of all references that are retrieved as full papers and potentially relevant, as well as relevant systematic reviews and literature reviews, were checked to identify other potentially relevant articles. Finally, abstracts from national and international psychiatry, psychology and occupational health conferences were scrutinised to identify unpublished studies.

Selection criteria
All randomised controlled trials that evaluate return to work interventions for adjustment disorders were considered. The review focuses on all interventions aimed at return to work, using individual or group approaches, including pharmacologic interventions, cognitive behavioural interventions, relaxation techniques and multimodal programmes.

Data collection and analysis
Two review authors independently selected suitable studies for inclusion in this review. The methodological quality of the included articles were assessed using the checklist of Downs and Black. Subsequently, the two review authors completed the extraction of data from the papers. Primary outcomes, such as time lost from work, were calculated using the weighted standardised mean difference. Dichotomous data, such as able/not able to return to work, were calculated using Mantel-Haenszel odds ratios. Secondary outcomes were assessed using continuous (for example, changes on psychometric scales), categorical (for example, one of three categories on a quality of life scale, such as 'better', 'worse' or 'no change'), or dichotomous (for example, remission from adjustment disorder vs no remission) measures.

Results
The initial search in electronic databases identified 3789 publications. Based on title and abstract, 32 eligible publications were identified and the full text of the articles was examined. Only two studies met the inclusion criteria and were included in the review. Additionally, four other studies that met the inclusion criteria were identified by searching relevant web sites on the Internet and checking the references from published reviews. Four of the included studies reported on the effects of cognitive behavioural therapy (CBT)
on return to work (RTW). Workers treated with CBT started 17.40 (8.14, 26.65) days faster with partial RTW and 14.69 (1.45, 27.96) days faster with full RTW. Mental health symptoms after 2-4 and 10-18 months, such as distress, depression and anxiety, were also significantly lower in workers treated with CBT. Based on a single study, no evidence was found that solution-focused behavioural therapy facilitates RTW. Based on the remaining single study, no evidence was found that a postal intervention aimed exclusively at work adjustments facilitates RTW of workers with adjustment disorders.

Authors' conclusions
This review found evidence that CBT may facilitate RTW of workers with adjustment disorders. On average, workers who are offered CBT will start two weeks earlier with partial and full RTW. A second finding of this review is that CBT improves the mental health of workers with adjustment disorders. This finding actually supports the hypothesis that early RTW may be associated with improved mental health. Based on a single study, the third finding is that there is no evidence that solution-focused behavioural therapy facilitates RTW of workers with adjustment disorders. The fourth and final finding of this review is that, based on a single study, there is no evidence that an intervention aimed exclusively at work adjustments facilitates RTW of workers with adjustment disorders.

Plain language summary

The effects of cognitive behavioural therapy on return to work
This review found evidence that cognitive behavioural therapy (CBT), a commonly used type of psychotherapy, may facilitate return to work of workers with stress-related mental health problems. On average, workers who are offered CBT will start two weeks earlier with partial and full RTW compared to workers who received care as usual. A second finding of this review is that CBT improves the mental health of workers with adjustment disorders. This finding seems to support the hypothesis that early RTW is associated with improved mental health.

BACKGROUND
Absenteeism among workers is often caused by emotional and psychological stress related to significant life events. Stress often leads to symptoms and impaired functioning and can result in an acute adjustment disorder. Adjustment disorders are defined in both the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (APA, 1994) and the International Statistical Classification of Diseases and Related Health Problems (ICD-10) (WHO, 1992).

DSM-IV has defined adjustment disorders as a debilitating reaction, usually lasting less than six months, to a stressful event or situation. The development of emotional or behavioural symptoms in response to an identifiable stressor(s) occurring within three months of the onset of the stressor(s). Adjustment disorders can be classified acute if the disturbance lasts less than six months. The following diagnostic criteria for adjustment disorders are defined by DSM-IV:

A. The development of emotional or behavioural symptoms in response to an identifiable stressor(s) occurring within three months of the onset of the stressor(s).
B. These symptoms or behaviours are clinically significant as evidenced by either of the following: (1) marked distress that is in excess of what would be expected from exposure to stressor.
(2) significant impairment in social or occupational (academic) functioning
C. The stress-related disturbance does not meet the criteria for another specific Axis I disorder and is not merely an exacerbation of a pre-existing Axis I or Axis II disorder.
D. The symptoms do not represent bereavement.
E. Once the stressor (or its consequences) has terminated, the symptoms do not persist for more than an additional 6 months.

The ICD, a detailed description of known diseases and injuries, is published by the World Health Organisation, is revised periodically (last revision in 1992) and is currently in its tenth edition. The ICD-10 defines the following diagnostic criteria for adjustment disorders:

'States of subjective distress and emotional disturbance, usually interfering with social functioning and performance, arising in the period of adaptation to a significant life change or a stressful life event. The stressor may have affected the integrity of an individual's social network (bereavement, separation experiences) or the wider system of social supports and values (migration, refugee status), or represented a major developmental transition or crisis (going to school, becoming a parent, failure to attain a cherished personal goal, retirement). Individual predisposition or vulnerability plays an important role in the risk of occurrence and the shaping of the manifestations of adjustment disorders, but it is nevertheless assumed that the condition would not have arisen without the stressor. The manifestations vary and include depressed mood, anxiety or worry (or mixture of these), a feeling of inability to cope, plan ahead, or continue in the present situation, as well as some degree of disability in the performance of daily routine.'

Adjustment disorders are very common in workers. In one survey, 50% of responders reported being extremely, very, or moderately stressed at work (Smith et al., 1998). Additionally, significant life events may also cause stress related disorders. Although adjustment disorders are considered mild compared to psychiatric disorders, at least 20% of patients with such a disorder does not return to work within a year (Schroer, 1993). For example, work disability as a result of mental health problems accounts for 30% of all disability benefits in the Netherlands. A majority (69%) of those employees suffer from minor psychiatric disorders such as adjustment disorders (Lisv, 2000). More than 10% of total claims for occupational diseases are adjustment disorders attributed to stress at work (NCvB, 2004).

Many interventions are available for workers with adjustment disorders. Interventions can be aimed at the individual worker or groups of workers. Examples are pharmacologic interventions, such as antidepressant treatment (Hameed et al., 2005), cognitive coping strategies, such as cognitive behavioural therapy (Blonk et al., 2006a), relaxation techniques, exercise programmes, and employee assistance programs. The outcome of these interventions is often reduction of emotional and behavioural symptoms and adequate coping behaviour of the worker, resulting in return to work.

A first search of publications on adjustment disorders and return to work interventions using MEDLINE revealed more than 4000 published articles. The majority of these publications discussed the impact of stress on workers, screening of workers at risk of adjustment disorders, and preventive interventions. Less than 5% of the articles discussed absenteeism and return to work interventions. Most of these articles were published less than 10 years ago.

Currently no systematic review on return to work interventions for adjustment disorders of workers on sick leave exists, and is the focus of this review. One of the co-authors of this review has conducted a Cochrane review on depressive disorders and return to work (Nieuwenhuijsen et al., 2008). Another Cochrane review on the effectiveness of occupational stress management programmes has been published
(Marine et al., 2006), which focuses on the efficacy of interventions aimed at reduction of stress symptoms in health care professionals not diagnosed with mental health problems, but exposed to stress at work.

**Objectives**
1. To evaluate the effectiveness of interventions aimed at return to work for workers with adjustment disorders.
2. To assess heterogeneity of each intervention and perform a meta-analysis for homogeneous groups of studies.

**METHODS**

**Criteria for considering studies for this review**

**Types of studies**
All randomised controlled trials that evaluate return to work interventions for adjustment disorders were considered.

**Types of participants**
Adults (18 years or older) with work disability related to an adjustment disorder causing absenteeism. Adjustment disorders are defined as acute significant emotional or behaviour problems in response to an identified stressor, as described in DSM-IV (APA, 1994) and ICD-10 (WHO, 1992) criteria. Stressors can be related to work or to significant life events. Patients in all organisational settings and job positions were included in the review, including non-paid workers and apprentices/trainees. Patients with chronic adjustment disorders were excluded. Patients with other common mental health disorders and psychiatric disorders were excluded as well.

**Types of interventions**
The review will focuses on all interventions aimed at return to work, using individual or group approaches, including pharmacologic interventions, cognitive behavioural interventions, relaxation techniques and multimodal programmes (Terluin et al., 2005; van der Klink et al., 2001). Interventions aimed at individual workers were categorised into the following groups:
1. pharmacotherapy (eg antidepressant treatment)
2. psychological therapy (eg cognitive behavioural therapy, psychodynamic therapy)
3. relaxation techniques (eg yoga)
4. exercise programmes (eg running or fitness training)
5. employee assistance programs (eg participatory ergonomics).
Interventions aimed at the workplace, such as occupational stress management programmes, were managed separately.

The main comparisons are:
1. Return to work intervention versus no treatment control.
2. Return to work intervention versus alternative treatment.

**Types of outcome measures**

*Work-status outcomes (primary outcomes)*
1. time lost from work, like loss of working days due to absenteeism
2. time on selected/appropriate/light/modified duties, eg productivity loss on working day
3. other reported changes in work status, like a change of function or working location without loss of productivity
4. functional status in relation to job demands expressed in terms of "can perform task" or "cannot perform task"
5. able/not able to return to work.

Other outcomes (secondary outcomes)
1. clinical status as measured by a psychometric scale like the BDI (Beck & Steer, 1987) or HADS (Zigmond & Snaith, 1983) or structured diagnostic interviews.
2. generic functional status and quality of life as measured by questionnaires such as the SF-36 (Ware, 1992) and EuroQol (EuroQol, 1990)
3. patient compliance to the intervention
4. trial drop-out.

Search methods for identification of studies

1. Electronic database searches
Initially, the CCDAN Controlled Trials Register (CCDANCTR-Studies and CCDANCTR-References) was searched to identify all potentially eligible studies, and the most recent date that the register was checked was noted. Electronic databases including the Cochrane Controlled Trials Register (CCTR), Cochrane Library CENTRAL Register (recording the issues searched, search strategy, and mistakes made), Cochrane Occupational Health Field (COHF) Trials and Review Database, MEDLINE (1966 to present), EMBASE (1980 to present), and PsycINFO (1887 to present) were searched to identify potentially eligible studies and review articles.

   For CCTR and COHF Trials and Review Database a search strategy was used for studies on adjustment disorders (Terluin, 2005) by using the following terms: (adjustment next disorder*) or burnout or (occupational next stress) or (job next stress) or (work next stress) or neurasthenia or (minor next depression) or (emotional next disorder*).

   For MEDLINE, EMBASE and PsycINFO databases, a search strategy for studies on adjustment disorders (Terluin et al., 2005) was combined with a search strategy on occupational health intervention studies (Verbeek et al., 2005) and a search strategy to identify RCTs (Robinson & Dickersin, 2003). Search terms are presented in Supplement 1. All relevant foreign language papers were translated.

2. Reference lists
The reference lists of all references that are retrieved as full papers and potentially relevant, as well as relevant systematic reviews and literature reviews, were checked to identify other potentially relevant articles. These articles were retrieved and assessed for possible inclusion in the review.

3. Personal communication
The lead author of all relevant reports identified were written to in order to ascertain if they know of any additional published or unpublished studies that might be relevant to the review.

4. Conference proceedings
Abstracts from national and international psychiatry, psychology and occupational health conferences were scrutinised to identify unpublished studies. These included meetings organised by national and international medical colleges, specialty societies and professional organisations. The authors of these studies were contacted to obtain further
details about the study and to enquire if they know of any other unpublished or published relevant work.

Data collection and analysis

1. Selection of studies for inclusion
1.1 Two review authors (DB and DR) independently selected suitable studies for inclusion in this review as detailed below. Where the two review authors disagreed about the inclusion of a study, disagreements were resolved by consensus of opinion, and a third review author was consulted if they could not be resolved. Where resolution was not possible the study author was contacted to obtain more information and clarification. The titles and abstracts of studies identified by searching electronic databases were assessed to determine whether each article met the eligibility criteria. If the title and abstract contained sufficient information to determine that the article did not meet the inclusion criteria, then it was rejected. A record of all rejected papers and the reasons for rejection were documented.

1.2 The full papers of all remaining titles and abstracts deemed relevant were retrieved. In addition, all other potentially relevant articles identified by the various search strategies (reference checking, personal communications etc) were reviewed. All papers in languages other than English were translated. All articles were reviewed independently by two of the review authors (DB and DR), who completed a form for each study and scored the eligibility of the study. Disagreements were resolved as mentioned above. On the form, data on the study type, participants, interventions and outcome measures were written down. The reasons for exclusion were documented. Where the same study had more than one article written about the outcomes, all articles were treated as one study and the results were presented only once.

2. Quality assessment of studies
The methodological quality of the remaining articles were assessed using the checklist of Downs and Black (1998), which is in accordance with the guidelines in the Cochrane Reviewers Handbook (Alderson et al., 2004). Items in this checklist included the way data are reported, external validity, internal validity (bias and confounding), and power of the study. All articles were reviewed independently by two of the review authors (DB and DR). Where the two review authors disagreed about the quality of a study, disagreements were resolved by consensus of opinion, and a third review author consulted if disagreements could not be resolved. Where resolution was not possible, the study author was contacted to obtain more information and clarification.

3. Data extraction
The two review authors completed the extraction of data from the papers on to a form to elicit the following information:
- **General**: published/unpublished, title, authors, source, contact address, country, language of publication, year of publication, duplicate publications
- **Methods**: design/allocation, allocation concealment, blinding of patients/treatment providers/outcome assessors, study duration/follow-up, start/end dates, loss to follow-up, crossovers, co-interventions
- **Participants**: number of participants, setting/type of work, region/country, recruitment, diagnosis, co-morbidity, inclusion/exclusion, age, sex, ethnicity, marital status, education level, social economic status
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- **Interventions per treatment group:** number of patients, treatment type/content, treatment provider, number of treatment providers, treatment frequency/duration, training/supervision of treatment providers

- **Outcomes:** length of follow-up, absenteeism (timing and return to work), type of analysis for absenteeism, clinical outcomes (timing and recovery), type of analysis clinical outcomes, productivity, treatment compliance

- **Results:** absenteeism (effect measure, SD, test statistic, CI), clinical outcomes (effect measure, SD, test statistic, CI)

A summary of data extracted from included studies was reported. If studies were available that were sufficiently similar and of sufficient quality, we have pooled those that could be grouped together and used the statistical techniques of meta-analysis. The data were managed using Review Manager software.

4. **Dealing with missing data**

Where it was not possible to analyse data quantitatively as reported in published studies, we contacted the first author to obtain the additional data required. Where no further usable data were provided, studies were not included in the meta-analysis, and were listed as missing data.

5. **Assessment of heterogeneity**

Graphical representations of the data were inspected; if the confidence intervals for the results of the study did not overlap, it suggests that the differences were likely to be statistically significant (Walker et al., 1988). In addition, differences between the results of each included trial were checked using the $I^2$ statistic as a test of heterogeneity. If there was statistically significant heterogeneity, the data were presented separately rather than pooled. Results were analysed using both the fixed effect and random effects methods. However, where there was significant heterogeneity, a random effects model was used, and the review authors explored the reasons for this heterogeneity.

6. **Assessment of reporting biases**

Data from all identified and selected trials were entered into a funnel plot (size of study versus effect size) (Egger et al., 1997), to attempt to detect the possibility of publication bias.

7. **Data synthesis**

Primary outcomes, such as time lost from work, were calculated using the weighted standardised mean difference (WMD). Dichotomous data, such as able/not able to return to work, were calculated using Mantel-Haenszel odds ratios. Secondary outcomes were assessed using continuous (for example, changes on psychometric scales), categorical (for example, one of three categories on a quality of life scale, such as ‘better’, ‘worse’ or ‘no change’), or dichotomous (for example, remission from adjustment disorder vs no remission) measures.

Continuous data: Many rating scales were available to measure outcomes in psychological trials. These scales varied in the quality of their validation and reliability. Therefore, if a rating scale’s validation had not been published in a peer-reviewed journal, then the data were not included in this review. In addition, the rating scale should be either self-report or completed by an independent observer or relative. Trials that used the same instrument to measure specific outcomes were used in direct comparisons where possible. Where continuous data were presented from different scales measuring the same effect, both sets of data were presented and the general direction of the effect.
inspected. The mean and standard deviation were reported. Where standard deviations were not reported in the paper, attempts were made to obtain them from the authors or to calculate them using other measures of variation that were reported, such as the confidence intervals. If possible, we pooled data from different scales that measured the same effect using the standardised mean difference (SMD).

Dichotomous data: Continuous outcome measures were converted to dichotomous data where necessary. If the authors of the study used a designated cut-off point for determining clinical effectiveness, the reviewers used this where appropriate. Otherwise, cut-offs on rating scales were identified and participants were divided on basis of whether they were ‘clinically improved’ or ‘not clinically improved’. For dichotomous outcomes, a Mantel-Haenszel odds ratio with its associated 95% confidence intervals (CI) was estimated. As a summary measure of effectiveness, where possible, the number needed to treat statistic (NNT) was also calculated.

8. Subgroup analysis and investigation of heterogeneity
Clinical heterogeneity was investigated using sub-group analyses. This review investigated:
1. organisational setting
2. type/level of job undertaken
3. group vs individual therapy
4. setting of treatment providers.

9. Sensitivity analysis
Methodological heterogeneity, which may have led to differences between the results of individual studies, was investigated using sensitivity analyses. This review investigated:
1. differences between studies that use self-reported or observer-rated outcome measures
2. differences between analyses involving all studies, and excluding trials of low methodological quality.

RESULTS

Description of studies
Results of the search
The initial search in electronic databases identified 3789 publications. Based on title and abstract, 32 eligible publications were identified and the full text of the articles was examined. Only two studies met the inclusion criteria and were included in the review (Nystuen et al., 2003; van der Klink et al., 2003). Additionally, four other studies that met the inclusion criteria were identified by searching relevant websites on the internet and checking the references from published reviews (Bakker et al., 2006; Blonk et al., 2006a; Brouwers et al., 2006; Fleten et al., 2006).

Included studies
Six studies were included in this review (Supplement 2). Two of the studies were from Norway (Fleten et al., 2006; Nystuen et al., 2003 ) and four from The Netherlands (Bakker et al., 2006; Blonk et al., 2006a; Brouwers et al., 2006; van der Klink et al., 2003). Additional information regarding study details and statistical data was provided by two authors (Bakker, 2006; Blonk, 2006a). Included studies were carried out between 1995 and 2004.
Design
Of the six included studies, three were randomised controlled trials and three were cluster-randomised trials. Intraclass correlations for the studies were reported to be negligible. Five studies compared two groups of patients and one study compared three groups of patients. To include both intervention groups of the latter study in the quantitative part of this review, two identical references to this study were created (Blonk et al., 2006a; Blonk et al., 2006b).

Sample sizes
The total number of participants in various intervention groups was 1133, and in control groups 1036. The number of participants in the smallest intervention group was between 40 to 100 in two studies, between 101 and 200 in two studies, and more than 201 in two studies. None of the studies were a priori deemed to have sufficient power to detect a clinically relevant difference in return to work (RTW) of 2 weeks.

Setting
All studies explored the effects of interventions aimed at return to work, but originated from different healthcare settings. Two studies were in a primary care setting, three studies in a public and occupational healthcare setting, and one study in both a psychological care and a public and occupational healthcare setting.

Participants
This review focuses at adjustment disorders based on the DSM IV (APA, 1994) and ICD-10 (WHO, 1992) criteria. To diagnose an adjustment disorder in potential participants two studies used the CIDI (WHO 1990), two studies used the ICPC criteria for mental disorders (Brage 1996), one study used the DSM IV criteria (APA, 1994), and one study used the 4DSQ (Terluin et al., 2006). Four studies included only patients with adjustment disorders, and two studies also included patients with musculoskeletal disorders. These patients were excluded from this review and from these studies only data presented on the patients with adjustment disorders were used.

Participants were recruited at general practitioners offices in two studies, national insurance and social security offices in two studies, a private insurance company in one study, and an occupational health service in one study. Participants were employed in five studies, and self employed in one study.

Patients with (severe) psychiatric disorders were excluded from five of the studies. Other reasons to exclude patients were (recent) psychotherapy, recent sick leave, recent pregnancy or childbirth, and terminal illness.

The length of sick leave was also a criterion for inclusion or exclusion in five of the six studies. In two studies only patients with a sick leave of more than two weeks were included, and in one study with a sick leave of more than 7 weeks. In the two remaining studies patients were excluded with a sick leave of more than 3 months.

The average age of the participants ranged between 39 and 42 years. In four studies the percentage of female participants ranged between 58% and 67%. In the other two studies only 19% and 34% of the participants were female.

Interventions
One of the goals of the review was to identify RCT’s with RTW interventions aimed at individual workers. Only studies with psychological therapy were identified. No eligible studies on pharmacotherapy, relaxation techniques, exercise programmes, or employee assistance programs were found.
All six studies compared one or two interventions with usual care. Four studies offered cognitive behavioural therapy (CBT) to participants in the intervention group (Bakker et al., 2006; Blonk et al., 2006a; Brouwers et al., 2006; van der Klink et al., 2003), one study offered solution-focused behavioural therapy (SFBT; Gingerich & Eisengart, 2000) to participants (Nystuen et al., 2003), and one study used a minimal postal intervention aiming at work adjustments (Fleten et al., 2006). In one study the intervention was provided by psychologists, in one study by psychologists or labour experts, in one study by general practitioners, in one study by occupational physicians, and in one study by social workers. In the study with the minimal postal intervention there were no treatment providers. Usual care was provided by general practitioners in five studies, and occupational physicians in one study.

The treatment frequency and duration of the non-postal interventions varied widely between the studies, ranging from less than three consultations of 10-20 minutes in one study to 11 consultations of 45 minutes in another study. The total length of the intervention ranged between a few weeks to 20 weeks.

Outcomes
Only studies which reported data on return to work (RTW) were included in this review. All six studies provided data on full RTW. Additionally, three studies reported data on partial RTW. The length of the follow-up on RTW was 12 months in four studies, 14-16 months in one study, and 18 months in one study. Eligible studies reporting time on selected/appropriate/light/modified duties, changes in work status, functional status, and the (in)ability to RTW were not found.

Four of the six studies used a validated instrument to follow-up on the course of the adjustment disorder. Three studies used the Four-Dimensional Symptom Questionnaire (4DSQ; Terluin et al., 2006), and one study used the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1993). Other psychometric instruments used in the studies were the Dutch version of the Maslach Burnout Inventory (MBI-NL; Maslach & Maslach, 1993; Schaufeli & van Dierendonck, 1994), the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1993), the Symptom Checklist-90 (SCL-90; Derogatis, 1977; Arrindell & Ettema, 1981, 1986), the Mastery Scale (Pearlin & Schooler, 1978), the Utrecht Coping List (UCL; Schreurs et al., 1984, 1993), and the Dutch Work and Health Questionnaire (DWHQ, Grundemann et al., 1993). The length of follow-up ranged from 10 to 18 months. None of the studies measured generic functional status and quality of life, patient compliance to the intervention, or trial drop-out.

Excluded studies
30 studies were excluded from the review using a study eligibility form (Supplement 3). Reasons for excluding the studies were:

1. Not a study but a review (Glicken, 1983; Gómez Sanabria et al., 2003)
2. The study is non-randomised by design (Akagi et al., 2001; Bunce & West, 1994; Cuijpers et al., 2005; Dettmers et al., 2003; Hätinen et al., 2002; Kushnir & Milbauer, 1994, Lehmer & Bentley, 1997; Mino et al., 2000; Natsume et al., 1996; Nieuwenhuijlsen et al., 2003; Selishchev et al., 1998)
3. Less then 50% of the participants were on sick leave (Jackson, 1983; Kawakami et al., 1999; Mynors-Wallis et al., 1997; Salmela-Aro et al., 2004; Toivanen et al., 1993)
4. Participants do not have an adjustment disorder (Frank et al., 2002; Huibers et al., 2004)
5. The study does not have a RTW outcome (Bruning & Frew, 1987; Firth & Shapiro, 1986; Lange et al., 2004; Proudfoot et al., 2003; Terranova et al., 1997)
6. RTW-data of intervention and control group are not reported separately (Perski, 2004).
Ongoing studies
There are two recently finished Dutch randomised controlled trials awaiting classification (de Vente et al., 2008; Rebergen et al., 2007). Results of an ongoing Dutch randomised controlled trial is expected to be published in 2009 (Oostrom et al., 2008).

Risk of bias in included studies
To appraise the risk of bias within the individual studies the Downs and Black checklist on methodological quality was used (Downs & Blacks, 1998). The scores details are presented in the quality assessment table (Table 1). The overall Cohen’s Kappa of agreement between two authors was 0.40. All differences between the two authors could easily be solved by discussion, without the need of a third author.

The overall mean score of the six included studies was 23.2 (SD 2.1) which is 72% of a maximum attainable score of 32. The applicability of studies was rated using the external validity sub scales. Four studies were rated as highly applicable. All six studies scored higher than 75% on the internal validity sub scales and were therefore rated as high quality studies. A global overview of the quality is given in Figure 1 and Figure 2.

<table>
<thead>
<tr>
<th>Study ID</th>
<th>Reporting</th>
<th>External validity</th>
<th>Internal validity</th>
<th>Power</th>
<th>Total score</th>
<th>Conclusion</th>
</tr>
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<tr>
<td>Bakker 2006</td>
<td>10</td>
<td>3</td>
<td>13</td>
<td>0</td>
<td>26</td>
<td>high (100% of internal validity)</td>
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<tr>
<td>Blonk 2006</td>
<td>9</td>
<td>2</td>
<td>10</td>
<td>0</td>
<td>21</td>
<td>high (85% of internal validity)</td>
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<tr>
<td>Brouwers 2006</td>
<td>10</td>
<td>3</td>
<td>11</td>
<td>0</td>
<td>24</td>
<td>high (85% of internal validity)</td>
</tr>
<tr>
<td>Fleten 2006</td>
<td>10</td>
<td>3</td>
<td>11</td>
<td>0</td>
<td>24</td>
<td>high (85% of internal validity)</td>
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<tr>
<td>Nystuen 2006</td>
<td>8</td>
<td>2</td>
<td>10</td>
<td>0</td>
<td>20</td>
<td>high (77% of internal validity)</td>
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<tr>
<td>van der Klink 2003</td>
<td>10</td>
<td>3</td>
<td>13</td>
<td>0</td>
<td>26</td>
<td>high (100% of internal validity)</td>
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Figure 1 Methodological quality graph: review authors' judgments about each methodological quality item presented as percentages across all included studies.

Figure 2 Methodological quality summary: review authors' judgments about each methodological quality item for each included study.

The risk of bias for an outcome across studies was summarized using the GRADE system (Harbour & Miller, 2001). On average the quality of evidence was low for both outcomes related to return to work (RTW) and outcomes related to mental health. Details on the quality of evidence are presented in Table 2 for cognitive behavioural therapy (CBT), Table 3 for solution-focused behavioural therapy (SFBT), and Table 4 for minimal postal intervention.

**Allocation**

In all six studies allocation concealment was judged adequate, based on reported information in five studies, and unpublished information from the author in one study (Blonk et al., 2006a).
### Blinding

Blinding of patients and outcome assessors was reported in only two of the studies (Bakker et al., 2006; van der Klink et al., 2003). In none of the studies the treatment providers were blinded.

### Selective reporting

To appraise the risk of bias due to selective reporting a funnel plot was calculated for one of the primary outcome values, full RTW. No evidence of selective reporting influencing the results of the review was found.

#### Table 2 Quality of evidence CBT compared to usual care

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Illustrative comparative risks* (95% CI)</th>
<th>N participants (studies)</th>
<th>Quality of evidence (GRADE)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assumed risk</td>
<td>Corresponding risk</td>
<td></td>
<td></td>
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<tr>
<td><strong>Partial RTW</strong></td>
<td>Mean partial RTW in control groups was 93.70 days(^1)</td>
<td>Mean Partial RTW in intervention groups 16.92 lower (26.3 to 7.55 lower)</td>
<td>485 (3)</td>
<td>⊕⊕⊕ moderate 2</td>
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<tr>
<td>Scale from: 1 to 540. (follow-up: 10-18 months)</td>
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<tr>
<td><strong>Full RTW</strong></td>
<td>The mean full rtw in control groups was 135.02 days(^1)</td>
<td>Mean Full RTW in intervention groups 13.74 lower (27.27 to 0.22 lower)</td>
<td>922 (4)</td>
<td>⊕⊕⊕ moderate 2</td>
</tr>
<tr>
<td>Scale from: 1 to 540. (follow-up: 10-18 months)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stress at 2-4 months</strong></td>
<td>Mean stress at 2-4 months in control groups was 13.37 points on 4DSQ distress scale(^3)</td>
<td>Mean Stress at 2-4 months in the intervention groups was 1.59 lower (2.92 to 0.27 lower)</td>
<td>723 (4)</td>
<td>⊕⊕ moderate 2</td>
</tr>
<tr>
<td>4DSQ (distress)(^3)</td>
<td>Scale from: 0 to 32. (follow-up: 10-18 months)</td>
<td></td>
<td></td>
<td>SMD -0.18 (-0.33 to -0.03)</td>
</tr>
<tr>
<td><strong>Stress at 10-18 months</strong></td>
<td>Mean stress at 10-18 months in the control groups was 9.49 points on 4DSQ distress scale(^3)</td>
<td>Mean Stress at 10-18 months in intervention groups was 0.60 lower (1.9 lower to 0.69 higher)(^5)</td>
<td>685 (4)</td>
<td>⊕⊕ moderate 2</td>
</tr>
<tr>
<td>4DSQ (distress)(^3)</td>
<td>Scale from: 0 to 32. (follow-up: 10-18 months)</td>
<td></td>
<td></td>
<td>SMD -0.07 (-0.22 to 0.08)</td>
</tr>
<tr>
<td><strong>Depression at 2-4 months</strong></td>
<td>Mean depression at 2-4 months in control groups was 1.83 points on 4DSQ depression scale(^3)</td>
<td>Mean Depression at 2-4 months in the intervention groups was 0.84 lower (2.31 lower to 0.63 higher)(^6)</td>
<td>728 (4)</td>
<td>⊕⊕ moderate 2</td>
</tr>
<tr>
<td>4DSQ (depression)(^3)</td>
<td>Scale from: 0 to 12. (follow-up: 10-18 months)</td>
<td></td>
<td></td>
<td>SMD -0.24 (-0.66 to 0.18)</td>
</tr>
</tbody>
</table>
### Anxiety at 2-4 months

4DSQ (anxiety) Scale from: 0 to 24. (follow-up: 10-18 months)

<table>
<thead>
<tr>
<th></th>
<th>Mean anxiety at 2-4 months in control groups was 3.85 points on 4DSQ anxiety scale</th>
<th>Mean Anxiety at 2-4 months in the intervention groups was 0.79 lower (1.63 lower to 0.06 higher)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>705 (4)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>moderate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-0.14 (-0.29 to 0.01)</td>
</tr>
</tbody>
</table>

1. Weighted mean of final values.
2. Lack of blinding: patients and caregivers are aware of the arm to which patients are allocated.
3. Three of the four studies used the 4DSQ.
4. Scores estimated using a standardised mean difference of -0.18 (-0.33 to -0.03).
5. Scores estimated using a standardised mean difference of -0.07 (-0.22 to 0.08).
6. Scores estimated using a standardised mean difference of -0.24 (-0.66 to 0.18).
7. Scores estimated using a standardised mean difference of -0.14 (-0.29 to -0.01).

### Table 3 Quality of evidence SFBT compared to usual care

| Patient or population: | patients with adjustment disorders |
| Setting: | primary care, psychological care, and occupational healthcare |
| Intervention: | solution-focused behavioural therapy (SFBT) |
| Comparison: | usual care |
| Outcomes | Illustrative comparative risks* (95% CI) |
| | Assumed risk | Corresponding risk |
| | usual care | SFBT |
| Full RTW | Mean full rtw in the control groups was 212.02 days | Mean Full RTW in intervention groups was 5.43 higher (56.93 lower to 67.79 higher) |
| | 113 (1) | ☓高等 moderate |

1. Lack of blinding: patients and caregivers are aware of the arm to which patients are allocated.
2. Imprecision: 95% confidence interval includes no effect; upper / lower confidence limit crosses minimal important difference (MID = 2 weeks) either for benefit or harm.

### Table 4 Quality of evidence Postal intervention compared to usual care

| Patient or population: | patients with adjustment disorders |
| Setting: | primary care, psychological care, and occupational healthcare |
| Intervention: | Postal intervention |
| Comparison: | usual care |
| Outcomes | Illustrative comparative risks* (95% CI) |
| | Assumed risk | Corresponding risk |
| | usual care | postal intervention |
| Full RTW | Mean full rtw in the control groups was 117.20 days | Mean Full RTW in intervention groups was 5.43 higher (56.93 lower to 67.79 higher) |
| | 169 (1) | ☓高等 low |

1. Lack of blinding: patients and caregivers are aware of the arm to which patients are allocated.
2. Imprecision: 95% confidence interval includes no effect; upper / lower confidence limit crosses minimal important difference (MID = 2 weeks) either for benefit or harm.
Effects of interventions
The effects of the interventions on both RTW-outcomes and mental health outcomes were assessed in a meta-analysis. A complete overview of these effects is presented in the tables below.

1 CBT vs usual care
1.1 Partial RTW [days]

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Blonk 2006</td>
<td>93.94</td>
<td>107.05</td>
</tr>
<tr>
<td>Brouwers 2006</td>
<td>106</td>
<td>87</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>36</td>
<td>21.31</td>
</tr>
</tbody>
</table>

1.2 Full RTW [days]

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Bakker 2006</td>
<td>123.26</td>
<td>128.89</td>
</tr>
<tr>
<td>Blonk 2006</td>
<td>217.06</td>
<td>128.06</td>
</tr>
<tr>
<td>Brouwers 2006</td>
<td>153</td>
<td>122</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>69</td>
<td>58.59</td>
</tr>
</tbody>
</table>

1.3 Stress at 2-4 months

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Bakker 2006</td>
<td>14.26</td>
<td>9.37</td>
</tr>
<tr>
<td>Blonk 2006</td>
<td>15.42</td>
<td>8.43</td>
</tr>
<tr>
<td>Brouwers 2006</td>
<td>8.39</td>
<td>7.2</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>10.6</td>
<td>7</td>
</tr>
</tbody>
</table>

1.4 Stress at 10-18 months

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Bakker 2006</td>
<td>10.81</td>
<td>8.91</td>
</tr>
<tr>
<td>Blonk 2006</td>
<td>14.26</td>
<td>8.52</td>
</tr>
<tr>
<td>Brouwers 2006</td>
<td>5.66</td>
<td>6.03</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>7.47</td>
<td>7.2</td>
</tr>
</tbody>
</table>

1.5 Depression at 2-4 months

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Bakker 2006</td>
<td>2.54</td>
<td>3.53</td>
</tr>
<tr>
<td>Blonk 2006</td>
<td>10.3</td>
<td>9.11</td>
</tr>
<tr>
<td>Brouwers 2006</td>
<td>0.85</td>
<td>1.92</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>0.98</td>
<td>2</td>
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</tbody>
</table>
### 1.6 Depression at 10-18 months

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Bakker 2006</td>
<td>1.74</td>
<td>2.92</td>
</tr>
<tr>
<td>Blonk 2006</td>
<td>10.52</td>
<td>8.92</td>
</tr>
<tr>
<td>Brouwers 2006</td>
<td>0.52</td>
<td>1.48</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>0.89</td>
<td>1.9</td>
</tr>
</tbody>
</table>

### 1.7 Anxiety at 2-4 months

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Bakker 2006</td>
<td>4.19</td>
<td>5.32</td>
</tr>
<tr>
<td>Blonk 2006</td>
<td>8.36</td>
<td>6.78</td>
</tr>
<tr>
<td>Brouwers 2006</td>
<td>1.64</td>
<td>3.43</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>2.03</td>
<td>2.9</td>
</tr>
</tbody>
</table>

### 1.8 Anxiety at 10-18 months

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Bakker 2006</td>
<td>2.83</td>
<td>4.55</td>
</tr>
<tr>
<td>Blonk 2006</td>
<td>7.61</td>
<td>6.99</td>
</tr>
<tr>
<td>Brouwers 2006</td>
<td>0.82</td>
<td>2.06</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>1.33</td>
<td>2.8</td>
</tr>
</tbody>
</table>

#### 2 SFBT vs usual care

##### 2.1 Full RTW [days]

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Nystuen 2003</td>
<td>217.45</td>
<td>166.7</td>
</tr>
</tbody>
</table>

#### 3 Postal intervention vs usual care

##### 3.1 Full RTW [days]

<table>
<thead>
<tr>
<th>Study ID</th>
<th>CBT</th>
<th>Usual Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Fleten 2006</td>
<td>80.7</td>
<td>124.68</td>
</tr>
</tbody>
</table>

### 1 CBT vs usual care

<table>
<thead>
<tr>
<th>Outcome or Subgroup</th>
<th>Studies</th>
<th>Participants</th>
<th>Statistical Method</th>
<th>Effect Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Partial RTW [days]</td>
<td>3</td>
<td>485</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>-16.92 [-26.30, -7.55]</td>
</tr>
<tr>
<td>1.2 Full RTW [days]</td>
<td>4</td>
<td>922</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>-13.74 [-27.27, -0.22]</td>
</tr>
<tr>
<td>1.3 Stress at 2-4 months</td>
<td>4</td>
<td>723</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>-0.18 [-0.33, -0.03]</td>
</tr>
<tr>
<td>1.4 Stress at 10-18 months</td>
<td>4</td>
<td>685</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>-0.07 [-0.22, 0.08]</td>
</tr>
<tr>
<td>Outcome or Subgroup</td>
<td>Studies</td>
<td>Participants</td>
<td>Statistical Method</td>
<td>Effect Estimate</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------</td>
<td>--------------</td>
<td>--------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>1.5 Depression at 2-4 months</strong></td>
<td>4</td>
<td>728</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>-0.24 [-0.66, 0.18]</td>
</tr>
<tr>
<td><strong>1.6 Depression at 10-18 months</strong></td>
<td>4</td>
<td>690</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>-0.11 [-0.26, 0.04]</td>
</tr>
<tr>
<td><strong>1.7 Anxiety at 2-4 months</strong></td>
<td>4</td>
<td>705</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>-0.14 [-0.29, 0.01]</td>
</tr>
<tr>
<td><strong>1.8 Anxiety at 10-18 months</strong></td>
<td>4</td>
<td>687</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>-0.12 [-0.27, 0.03]</td>
</tr>
</tbody>
</table>

**2 SFBT vs usual care**

<table>
<thead>
<tr>
<th>Outcome or Subgroup</th>
<th>Studies</th>
<th>Participants</th>
<th>Statistical Method</th>
<th>Effect Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2.1 Full RTW [days]</strong></td>
<td>1</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>Subtotals only</td>
<td></td>
</tr>
</tbody>
</table>

**3 Postal intervention vs usual care**

<table>
<thead>
<tr>
<th>Outcome or Subgroup</th>
<th>Studies</th>
<th>Participants</th>
<th>Statistical Method</th>
<th>Effect Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3.1 Full RTW [days]</strong></td>
<td>1</td>
<td>Mean Difference (IV, Fixed, 95% CI [days])</td>
<td>Subtotals only</td>
<td></td>
</tr>
</tbody>
</table>

---

**1. Cognitive behavioural therapy versus usual care**

**1.1 Primary outcome: return to work**

Four of the included studies (Bakker et al., 2006; Blonk et al., 2006; Brouwers et al., 2006; van der Klink et al., 2003) reported on the effects of cognitive behavioural therapy (CBT) on return to work (RTW). All studies compared CBT with usual care. Data on the number of days to partial RTW were reported by three of these studies and were used to calculate the weighted mean difference (WMD) in the meta-analysis (Figure 3). Data on the number of days to full RTW were reported by all four studies (Figure 4) and presented in a funnel plot (Figure 5).

---

**Figure 3** Forest plot of comparison: CBT vs usual care; 1.1 partial RTW [days].

**Figure 4** Forest plot of comparison: CBT vs usual care; 1.2 full RTW [days].
1.2 Secondary outcome: mental health

Data on mental health outcomes were reported by all four studies that reported data on RTW. Because the studies used different psychometric scales (4DSQ, DASS) on stress, depression and anxiety, standardised mean differences (SMD) were used instead of weighted mean differences (WMD). Regardless of the healthcare setting no significant reduction of stress could be demonstrated at 2-4 months (Figure 6) and 10-18 months (Figure 7). Similar findings were found for depression (Figure 8, Figure 9) and anxiety (Figure 10, Figure 11).

Figure 5 Funnel plot of comparison: 1 CBT vs usual care, 1.2 Full RTW [days].

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>CBT</th>
<th>Usual care</th>
<th>Std. Mean Difference</th>
<th>Std. Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Eskinor 2006</td>
<td>14.25</td>
<td>8.37</td>
<td>17.4</td>
<td>15.24</td>
</tr>
<tr>
<td>Bork 2006</td>
<td>15.42</td>
<td>8.43</td>
<td>17.1</td>
<td>17.6</td>
</tr>
<tr>
<td>Brouws 2006</td>
<td>8.39</td>
<td>7.2</td>
<td>10.8</td>
<td>10.88</td>
</tr>
<tr>
<td>van der Klink 2003</td>
<td>10.6</td>
<td>7.7</td>
<td>12.5</td>
<td>9.6</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>406</td>
<td>317</td>
<td>100.0%</td>
<td>0.18 [-0.33, 0.03]</td>
</tr>
</tbody>
</table>

Heterogeneity, Chi² = 1.22, df = 3 (P = 0.76), I² = 0%
Test for overall effect, Z = 2.41 (P = 0.02)

Figure 6 Forest plot of comparison: CBT vs usual care; 1.3 stress at 2-4 months.

Figure 7 Forest plot of comparison: CBT vs usual care; 1.4 stress at 10-18 months.
Figure 8 Forest plot of comparison: CBT vs usual care, 1.5 depression at 2-4 months.

Figure 9 Forest plot of comparison: CBT vs usual care, 1.6 depression at 10-18 months

Figure 10 Forest plot of comparison: CBT vs usual care, 1.7 anxiety at 2-4 months.

Figure 11 Forest plot of comparison: CBT vs usual care, 1.8 anxiety at 10-18 months.

2. Solution-focused behavioural therapy

1.1 Primary outcome: return to work

One of the included studies (Nystuen et al., 2003) reported on the effects of solution-focused behavioural therapy (SFBT) on return to work (RTW). No significant effect of SFBT on the number of days to full RTW were found (Figure 12).

1.2 Secondary outcome: mental health

The included studies did not report on the effect of SFBT on mental health.
Figure 12 Forest plot of comparison: SFBT vs usual care, 2.1 full RTW [days].

3. Minimal postal intervention

1.1 Primary outcome: return to work

The remaining included study (Fleten et al., 2006) reported on the effects of a minimal postal intervention aiming at work adjustments on return to work (RTW). No significant effect of this intervention on the number of days to full RTW were found (Figure 13).

1.2 Secondary outcome: mental health

The included studies did not report on the effect of a minimal postal intervention on mental health.

Figure 13 Forest plot of comparison: minimal postal intervention vs usual care, 3.1 full RTW [days].

DISCUSSION

Summary of main results

This review found evidence that cognitive behavioural therapy (CBT) may facilitate return to work (RTW) of workers with adjustment disorders. On average, workers who are offered CBT will start two weeks earlier with partial and full RTW. A second finding of this review is that CBT improves the mental health of workers with adjustment disorders. This finding actually supports the hypothesis that early RTW may be associated with improved mental health. Based on a single study, the third finding is that there is no evidence that solution-focused behavioural therapy (SFBT) facilitates (RTW) of workers with adjustment disorders. The fourth and final finding of this review is that, based on a single study, there is no strong evidence that an intervention aimed exclusively at work adjustments facilitates RTW of workers with adjustment disorders.

Overall completeness and applicability of evidence

This review is limited by the fact that all studies were conducted in Norway and the Netherlands. This limitation makes it uncertain how far the findings can be generalised to countries with different welfare structures or attitudes to work. External validity of the studies was appraised using the Downs and Black checklist on methodological quality (Downs & Black, 1998). Four of the six studies were highly applicable.

Quality of the evidence

Only six studies on return to work (RTW) interventions for adjustment disorders were included in this review. However, the quality of these six studies was high, when scored on the internal validity subscales of the Downs and Black checklist on methodological quality (Downs & Black, 1998). A major point of concern is the blinding of participants and treatment providers in the studies. Only two studies reported blinding of the participants to the intervention they were receiving. In the four other studies blinding would have
been impossible due to the nature and aims of interventions being self-evident. Blinding of the treatment providers was impossible in all six studies. Consequently, when using the GRADE system, the quality of evidence score is lowered one category for all comparisons made in this review.

**Potential biases in the review process**

In the summary of main results it was concluded that the healthcare setting may be pivotal in the success of cognitive behavioural therapy (CBT). This conclusion was based on the findings of only two studies (Blonk et al., 2006a; van der Klink et al., 2003). However, there also are other factors that distinguish these two studies from the rest of the studies. First, the participants in these two studies were predominantly male workers, compared to predominantly female workers in the remaining four studies. Second, the participants in these two studies were either employed by a large company (van der Klink et al., 2003), or were self-employed and insured by a large insurance company (Blonk et al., 2006a). Both companies were committed to success of the trial, making it easier for participants to return to work early. In the remaining four studies, participants were working for a mix of companies which were not informed of the trials.

**Agreements and disagreements with other studies or reviews**

In 2005 a systematic review on the treatment of nervous breakdown was published (Terluin et al., 2005). One of the conclusions of this review was that an activating treatment, such as cognitive behavioural therapy (CBT), appeared to exert a more powerful effect on restoring social functioning than on symptom reduction. Although return to work (RTW) was not discussed in this review, these findings seem to be in line with the main findings of this review. A Cochrane review on the prevention of occupational stress in healthcare workers (Marine et al., 2006) concluded that limited evidence is available that person directed interventions, such as CBT, and work-directed interventions may reduce stress levels in health care workers. It is possible that CBT has a different effect on healthy workers in a preventive setting compared to workers with mental health problems on sick leave. In a recent Cochrane review on interventions to improve occupational health in depressed people (Nieuwenhuijsen et al., 2008) similar conclusions were drawn.

**CONCLUSIONS**

**Implications for practice**

In this review limited evidence is presented that cognitive behavioural therapy (CBT) may facilitate partial and full return to work (RTW) of workers with adjustment disorders.

**Implications for research**

This review shows that randomised controlled trials (RCTs) on common mental health problems are feasible and can help to answer questions regarding the recovery of patients with adjustment disorders. It is unfortunate that only RCTs from Norway and the Netherlands were published on this subject. For the general applicability of these findings it is essential that these RCTs are also conducted in other countries. RCTs on the relation of CBT and work adjustments could also be of value to future practice.
SOURCES OF SUPPORT

External sources of support
- Dutch Cochrane Centre NETHERLANDS

Internal sources of support
- EMGO Institute, Department of Public and Occupational Health, VU University Medical Center NETHERLANDS

REFERENCES

Included studies
Bakker 2006 [ISRCTN: 43779641]


Blonk 2006

Brouwers 2006


Brouwers EPM, Tiemens BG, Terluin B, Verhaak PFM. Effectiveness of an intervention to reduce sickness absenteeism from work in patients with emotional distress or minor mental disorders: a randomised controlled effectiveness trial [De effectiviteit van een interventie door het maatschappelijk werk bij huisartspatiënten die overspannen zijn. Een gerandomiseerd vergelijkend onderzoek]. Huisarts & Wetenschap 2007;50(6):238-244.

Fleten 2006

Nystuen 2003 [ISRCTN: 39140363]

van der Klink 2003
Excluded studies
Dettmers C, Stein H, Bock H, Simon U, Slowik M. Neurological outpatient rehabilitation is incomplete until the patient is successfully reintegrated into his/her job [Begleitung des Patienten während der beruflichen Wiedereingliederung komplettiert die neurologische Rehabilitation]. Neurologie und Rehabilitation 2003;9(5):217-225.


Perski A. Rehabilitation of stress-related diseases goes on different phases and is often long-lasting [Rehabilitering av stressjukdomar sker i olika faser och blir ofta lång]. Läkartidningen 2004;101(14):1292-1294.


Studies awaiting classification


Ongoing studies


Additional references


**COCHRANE REVIEW**


**Downs SH,** Black N. The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. *Journal of Epidemiology and Community Health* 1998;52(6):377[84].

**Derogatis LR.** SCL90: Administration, scoring and procedures manual for the (revised) version. Baltimore: Johns Hopkins University school of Medicine, Clinical Psychometrics Research Unit, 1977.


**Egger M,** Davey Smith G, Schneider M, Minder CE. Bias in meta-analysis detected by a simple, graphical test. *BMJ* 1997;315(7109):629[34].


48


**SUPPLEMENTS**

**Supplement 1**

MEDLINE (PubMed) search terms
Inclusion period: September 2003 to October 2004

Randomisation procedure: cluster randomisation on treatment provider level

Trial design: randomised controlled trial

Methods

Employee

Occupational

Reemployment

therap* in TI,AB,TC,SU ; #14 return to work in TI,AB,TC,SU ; #17 supported employment in TI,AB,TC,SU ; #16 occupational intervention* in TI,AB,TC,SU ; #15 occupational
capacity evaluation

services in TI,AB,TC,SU ; #22 absenteeism in TI,AB,TC,SU ; #21 vocational guidance in TI,AB,TC,SU ; #20 work

TI,AB,TC,SU ; #25 unemployed in TI,AB,TC,SU ; #24 occupational health in TI,AB,TC,SU ; #23 occupational health
absence in TI,AB,TC,SU ; #28 sick leave in TI,AB,TC,SU ; #27 unemployment in TI,AB,TC,SU ; #26 employed in

TI,AB,TC,SU ; #29 sick* or #28 or #29 or #30 or #31 or #32 or #33 or #34 ; #34 vo

#36 random* placebo* in TI,AB,TC,SU ; #35 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or
#15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33 or #34) and (#53 or #54 or #55) ; #56 #53 or #54 or #55 ; #55 explode "Occupational-Stress" in MJ, MN ; #54 explode "Occupational Neurosis" in MJ, MN ; #53 explode "Adjustment-Disorders" in MJ, MN ; #52 #47 not #51 ; #51 #48 not #50 ; #50 #48 and #49 ; #49 (human or inpatient or outpatient) in po ; #48 animal in po ; #47 #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46 ; #46 explode experimental
design #45 explode mental health program evaluation ; #44 explode treatment effectiveness evaluation ; #43 explode placebo ; #42 ((clin* or control* or compare* or evaluat* or prospective* or research*) near5 (trial* or study* or studies*) in MJ, MN ; #41 explode "Disability" in MJ, MN ; #40 explode "Occupational Health" in MJ, MN ; #39 explode "Stress" in MJ, MN ; #38 explode "Depression" in MJ, MN ; #37 explode "Burnout" in MJ, MN ; #36 explode "Depression disorder" in MJ, MN ; #35 explode "Depression disorder" in MJ, MN ; #34 explode "Depression disorder" in MJ, MN ; #33 explode "Depression disorder" in MJ, MN ; #32 explode "Depression disorder" in MJ, MN ; #31 explode "Depression disorder" in MJ, MN ; #30 explode "Depression disorder" in MJ, MN ; #29 explode "Depression disorder" in MJ, MN ; #28 explode "Depression disorder" in MJ, MN ; #27 explode "Depression disorder" in MJ, MN ; #26 explode "Depression disorder" in MJ, MN ; #25 explode "Depression disorder" in MJ, MN ; #24 explode "Depression disorder" in MJ, MN ; #23 explode "Depression disorder" in MJ, MN ; #22 explode "Depression disorder" in MJ, MN ; #21 explode "Depression disorder" in MJ, MN ; #20 explode "Depression disorder" in MJ, MN ; #19 explode "Depression disorder" in MJ, MN ; #18 explode "Depression disorder" in MJ, MN ; #17 explode "Depression disorder" in MJ, MN ; #16 explode "Depression disorder" in MJ, MN ; #15 explode "Depression disorder" in MJ, MN ; #14 explode "Depression disorder" in MJ, MN ; #13 explode "Depression disorder" in MJ, MN ; #12 explode "Depression disorder" in MJ, MN ; #11 explode "Depression disorder" in MJ, MN ; #10 explode "Depression disorder" in MJ, MN ; #9 explode "Depression disorder" in MJ, MN ; #8 explode "Depression disorder" in MJ, MN ; #7 explode "Depression disorder" in MJ, MN ; #6 explode "Depression disorder" in MJ, MN ; #5 explode "Depression disorder" in MJ, MN ; #4 explode "Depression disorder" in MJ, MN ; #3 explode "Depression disorder" in MJ, MN ; #2 explode "Depression disorder" in MJ, MN ; #1 explode "Depression disorder" in MJ, MN ;

Supplement 2 Characteristics of included studies

Bakker 2006

Methods

Trial design: randomised controlled trial

Randomisation procedure: cluster randomisation on treatment provider level

Allocation concealment: randomisation was conducted blindly by the research team using randomised lists

Blinding: patients; interviewers; outcome assessors

Follow-up: 12 months

Inclusion period: September 2003 to October 2004
Participants
Country: The Netherlands
Healthcare setting: primary care in The Netherlands
Work setting: employees in The Netherlands
Number: Trial intervention: n=227; Comparison intervention: n=206
Age, mean (sd): Trial intervention: 42.0 (8.8) years; Comparison intervention: 39.5 (9.6) years
Sex: Trial intervention: 67% female; Comparison intervention: 65% female
Recruitment: employees who visited consulting hours of the participating general practitioners were approached by mail by the research team
Inclusion: moderately elevated distress level (measured with 3 questions of the 4DSQ distress scale), having paid work and being (partially) on sick leave for no longer than three months
Exclusion: severe psychiatric disorders (mania or psychosis), terminal illness or inadequate command of the Dutch language

Interventions
Trial intervention:
- Treatment type: minimal intervention for stress-related mental disorders with sick leave (MISS) for general practice, using the principle of time contingency and parts of more specialised psychological treatments like cognitive behavioural therapy (CBT) and problem solving treatment (PST)
- Treatment providers: 24 primary care physicians received a training of two 3.5 hour sessions and two 2 hour follow-up sessions by a primary care physician and an occupational physician over a 6 to 10 week period
- Treatment frequency and duration: no more than 3 consultations of 10-20 minutes

Comparison intervention:
- Treatment type: usual care based on routine care by primary care physicians
- Treatment providers: 22 primary care physicians who had received no information or advice about the content of the intervention

Outcomes
Work-status outcomes:
- time to full RTW lasting for period of at least 4 weeks without partial/full relapse into sick leave
- self-reported days of sick leave at baseline and after 2, 6, and 12 months follow-up

Other outcomes:
- Timing of assessments: mailed questionnaires at baseline and after 2, 6, 12 months of follow-up
- Four-Dimensional Symptom Questionnaire (4DSQ): baseline measurement and follow-up measurements at baseline and after 2, 6, and 12 months
- Compliance patients: dropouts at baseline, 2, 6 and 12 months
- Compliance treatment providers: primary care physicians in both groups were asked to fill in structured questionnaire two months after baseline assessment on care provided and any diagnoses or working hypotheses in past 3 months according to their electronic medical record

Notes
Source of funding: The Netherlands Organisation for Health Research and Development (ZonMw), (grant 4200.0003)
Ethics: approved by the medical ethics committee of the VU University Medical Center

Risk of bias table

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<tr>
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Blank 2006

Methods
Trial design: randomised controlled trial
Randomisation procedure: randomisation on patient level
Allocation concealment: randomisation was conducted blindly by the research team (based on unpublished information from the author)
Blinding: blinding of patients was not reported, but would be impossible due to the large differences between the interventions
Follow-up: 360 days
Inclusion period: January 2001 to September 2002 (based on unpublished information author)

Participants
Country: The Netherlands
Healthcare setting: private insurance company
Work setting: self employed individuals insured for work disability at a private insurance company
Number: Trial intervention 1: n=40; Trial intervention 2: n=40; Comparison intervention: n=42
Age, mean (sd): 42 (7.9) years
Sex: 19% female
Recruitment: self-employed individuals who were unable to work owing to psychological complaints and had called upon their insurance company for disability benefits were approached by the research team
Inclusion: sick leave caused by adjustment disorders (e.g. burnout and job stress) based on a structured diagnostic telephone interview using a shortened version of the Composite International Diagnostic Interview (CIDI) conducted by experienced psychologists
Exclusion: serious psychiatric disorders (e.g. major depression, addictive disorders, posttraumatic disorders, and other anxiety disorders) based on the structured diagnostic telephone interview, or individuals who did not want to postpone their current treatment during the research period

**Interventions**
Trial intervention 1:
- Treatment type: individual intervention based on cognitive behavioural therapy (CBT) combined with a workplace intervention focusing on stressor reduction at work using a graded activity approach
- Treatment providers: 6 labour experts trained in brief CBT-based stress management with follow-up meetings every 3 months during the course of the study
- Treatment frequency and duration: five to six sessions of approximately an hour, twice a week, which were held at home or at the workplace of the self-employed

Trial intervention 2:
- Treatment type: individual cognitive behavioural therapy (CBT) focused on RTW and based on a highly structured protocol for the treatment of burnout or other adjustment disorders
- Treatment providers: psychologists
- Treatment frequency and duration: 11 two-weekly sessions of approximately 45 minutes per session, where the first six sessions focused on cognitive restructuring and on registration of symptoms and situations, and the following five sessions focused predominantly on a further expansion of cognitive restructuring

Comparison intervention:
- Treatment type: no-treatment intervention consisting of two brief medical checks of the legitimacy of the work-disability benefit
- Treatment providers: general practitioner assigned by the private insurance company
- Treatment frequency and duration: a first visit shortly after the initial sick leave and a second visit approximately 4 months later

**Outcomes**
Work-status outcomes:
- time to partial and full return to work
Other outcomes:
- Timing of assessments: baseline questionnaires were sent to patients before the intervention, and follow-up questionnaires at 4 and 10 months of follow-up
- Depression Anxiety Stress Scales (DASS): baseline measurement and follow-up measurements at 4 and 10 months
- Maslach Burnout Inventory (MBI-NL): baseline measurement and follow-up measurements at 4 and 10 months
- Compliance patients: dropouts at baseline, 4 and 10 months

**Notes**
Source of funding: not reported
Ethics: approved by ethical committee of the Netherlands Organisation for Applied Scientific Research (TNO)

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<td>No</td>
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**Brouwers 2006**

**Methods**
Trial design: randomised controlled trial
Randomisation procedure: block randomisation on patient level (block size 4)
Allocation concealment: randomisation was conducted by an administrative assistant who was not in contact with the patients, with the aid of a dice (evens being intervention group)
Blinding: interviewers (partially blinded); blinding of patients was not reported, but would be impossible due to the large differences between the interventions
Follow-up: 18 months
Inclusion period: August 2001 to July 2003
Participants
Country: The Netherlands
Healthcare setting: primary care in the city of Almere
Work setting: employees living in the city of Almere
Number: Trial intervention: n=96; Comparison intervention: n=98
Age, mean (sd): Trial intervention: 39.4 (9.1) years; Comparison intervention: 40.1 (9.3) years
Sex: Trial intervention: 58% female; Comparison intervention: 60% female
Recruitment: patients who visited their GP were approached by research team
Inclusion: emotional distress or minor mental disorders according to GP and self-report; paid employment; sick leave or planning to be on sick leave directly after visit to GP for emotional or mental problems existing less than 3 months; aged 18-60 years; Dutch-speaking
Exclusion: patients with moderately severe or severe mood disorders (major depressive disorder and bipolar disorder), agoraphobia, panic disorder and social phobia based on a Composite International Diagnostic Interview (CIDI); patients already receiving psychotherapy

Interventions
Trial intervention:
- Treatment type: individual CBP aimed at return to work, using a graded activity approach and based on a three stage model resembling stress inoculation training
- Treatment providers: 11 social workers who received a 3-day training conducted by the researchers, including two follow-up sessions at different times during the study period wherein adherence to the protocol was checked and knowledge was refreshed.
- Treatment frequency and duration: five individual 50 minute sessions over 10 weeks
Comparison intervention:
- Treatment type: usual care based on routine care by general practitioners, which could include medication or counseling, or even referral
- Treatment providers: 70 general practitioners

Outcomes
Work-status outcomes:
- time to full return to work
- partial and full return to work rate at baseline and 3, 6 and 18 months follow-up
Other outcomes:
- Timing of assessments: baseline questionnaires were handed to patients at their baseline interview with GP; follow-up questionnaires were sent to patients at 3, 6, 18 months follow-up
- Hospital Anxiety and Depression Scale (HADS): baseline measurement and follow-up measurements at 3, 6 and 18 months
- Four-Dimensional Symptom Questionnaire (4DSQ): baseline measurement and follow-up measurements at 3, 6 and 18 months
- Short Form Health Survey (SF-36): baseline measurement and follow-up measurements at 3, 6 and 18 months; eight individual sub scales, as well as the mental component summary scale score and the physical component summary scale score were computed and used in analyses
- Patient satisfaction based on a questionnaire with eight statements developed for this study: measurement at 3 months
- Compliance patients: dropouts at baseline, 3, 6 and 18 months

Notes
Source of funding: The Netherlands Organisation for Health Research and Development (ZonMw), (grant 2200.0100)
Ethics: approved by the ethical committee of The Netherlands Institute of Mental Health and Addiction

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<td>Yes</td>
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**Fleten 2006**

Methods
Trial design: randomised controlled trial
Randomisation procedure: cluster randomisation on treatment provider level
Allocation concealment: sick-listed persons were assigned consecutive numbers at enrolment and then randomised into the intervention or control group according to a pre-drawn randomisation list
Blinding: local National Insurance Offices (partially blinded); blinding of patients was not reported, but would be impossible due to the large differences between the interventions

Follow-up: 12 months


Participants

Country: Norway

Healthcare setting: local National Insurance Offices in Tromsø and Harstad

Work setting: employees working in the Tromsø and Harstad region

Number randomised: Trial intervention: n=499; Comparison intervention: n=501

Number included: Trial intervention: n=495; Comparison intervention: n=495

Age, mean: Trial intervention: 40.9 years; Comparison intervention: 39.9 years

Sex: Trial intervention: 61% female; Comparison intervention: 60% female

Recruitment: persons on sick leave for more than 14 days were selected on the basis of the diagnosis made by their general practitioner and were sent information about the project

Inclusion: sick leave caused by musculoskeletal or mental disorders based on ICPC criteria

Exclusion: not reported

Interventions

Trial intervention:

- Treatment type: usual care in combination with a minimal intervention package containing general written information on possible work related measures if sick-listed, and a questionnaire related to the actual sick leave

- Treatment providers: general practitioners and National Insurance Offices

- Treatment frequency and duration: a minimal intervention package posted 14 days after the start of the current sick leave

Comparison intervention:

- Treatment type: usual care

- Treatment providers: general practitioners and National Insurance Offices

Outcomes

Work-status outcomes:

- time to full return to work

- full return to work rate at 12 weeks follow-up

Other outcomes:

- percentage of patients with a benefit from the National Insurance Service one year after the start of the actual sick leave

- Compliance patients: number of patients in the Trial intervention that returned the request for contact with the National Insurance Office and filled in the questionnaire

Notes

Source of funding: the Royal Ministry of Health and Social Affairs (project no. 13345)

Ethics: approved by the Regional Medical Ethics Committee

Nystuen 2003

Methods

Trial design: randomised controlled trial

Randomisation procedure: randomisation on patient level

Allocation concealment: randomisation was conducted blindly by the project administrator using a computer-generated randomisation list

Blinding: blinding of patients was not reported, but would be impossible due to the large differences between the interventions

Follow-up: 14-16 months

Inclusion period: January 2001 to December 2001

Participants

Country: Norway

Healthcare setting: social security offices in Oslo

Work setting: employees working in the Oslo region

Number randomised: Trial intervention: n=122; Comparison intervention: n=106

Number included: Trial intervention: n=113; Comparison intervention: n=100

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Age, mean (sd): Trial intervention: 40.7 (10.8) years; Comparison intervention: 40.1 (11.0) years
Sex: Trial intervention: 65% female; Comparison intervention: 58% female
Recruitment: employees sick-listed at their local social security office for more than seven weeks were selected on the basis of the diagnosis made by their general practitioner and were sent information about the project
Inclusion: sick leave caused by psychological problems, general exhaustion and burn-out, or musculoskeletal pain based on ICPC criteria
Exclusion: other disorder based on ICPC criteria; self employed; pregnancy; graded sick leave of less than 50%; those awaiting for elective orthopedic surgery; those becoming 66 or more in the present year; foreign born persons in need of interpreter to communicate

Interventions
Trial intervention:
- Treatment type: usual care in combination with individual and/or group based solution-focused therapy aimed at the work situation, with a main focus was on coping strategies, support between the participants and solutions and goals for the future
- Treatment providers: 3 psychologists, trained and experienced in solution-focused therapy in individual consultations and group settings
- Treatment frequency and duration: "The Road Ahead Course" which comprised of 8 group sessions of 3 to 4 hours, and/or individual counseling sessions
Comparison intervention:
- Treatment type: usual care consisting of written information from the social security office and where patients were free to visit their regular general practitioner

Outcomes
Work-status outcomes:
- days absent from work in the 14 to 16 months following inclusion
Other outcomes:
- Compliance patients: uptake rates for the different information elements and the intervention

Notes
Source of funding: the Royal Ministry of Health and Social Affairs
Ethics: approved by the Regional Medical Ethics Committee

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van der Klink 2003

Methods
Trial design: randomised controlled trial
Randomisation procedure: cluster randomisation on treatment provider level
Allocation concealment: randomisation was conducted blindly by an independent research assistant
Blinding: patients, outcome assessors
Follow-up: 12 months
Inclusion period: May 1995 to July 1996

Participants
Country: The Netherlands
Healthcare setting: in-company occupational health service
Work setting: employees of the Dutch postal service (Royal KPN)
Number: Trial intervention: n=109; Comparison intervention: n=83
Age, mean (sd): Trial intervention: 39 (8.0) years; Comparison intervention: 42 (8.8) years
Sex: Trial intervention: 34% female; Comparison intervention: 41% female
Recruitment: employees who were two weeks on sick leave were referred to their occupational physician (OP) and were asked by their OP to participate in the study
Inclusion: first sick leave caused by an adjustment disorder based on DSM IV criteria
Exclusion: other disorder based on DSM IV criteria; treatment for adjustment disorder previous year; physical comorbidity with effect absenteeism; pregnancy/child birth previous six months

Interventions
Trial intervention:
- Treatment type: individual CBT aimed at return to work, using a graded activity approach and based on a three stage model resembling stress inoculation training
- Treatment providers: 17 occupational physicians, trained during a three day training course by experienced trainers with backgrounds in psychology, occupational medicine, and general practice, and frequently supervised by the trainers during the study
- Treatment frequency and duration: four or five consultations in the first six weeks of sick leave with a total length over these sessions of at least 90 minutes

Comparison intervention:
- Treatment type: usual care based on empathic counseling, instruction about stress, lifestyle advice, and discussion of work problems
- Treatment providers: 16 occupational physicians without training in cognitive behavioural therapy, but with a three hour session on the use of the inclusion and exclusion criteria and the recording of their guidance activities
- Treatment frequency and duration: there was neither a professional nor a company guideline available for the care of patients with adjustment disorders

Outcomes
Work status outcomes:
- time to partial and full return to work
- time to full return to work corrected for partial return to work
- partial and full return to work rate at 3 and 12 months follow-up
- incidence of recurrent sick leave in the year following full return to work
- time to first recurrent sick leave in the year following full return to work

Other outcomes:
- Timing of assessments: baseline questionnaires handed to patients at end of their first visit with OP, and follow-up questionnaires were sent to patients at 3 and 12 months of follow-up
- Dutch Work and Health Questionnaire (DWHQ): baseline measurement; only the eight scales on work (32 items) were combined to estimate a total score of quality of work life
- Utrecht Coping List (UCL): baseline measurement
- Four Dimensional Symptom Questionnaire (4DSQ): baseline measurement and follow-up measurements at 3 and 12 months
- Symptom Checklist-90 (SCL-90): baseline measurement and follow-up measurements at 3 and 12 months
- Mastery Scale: baseline measurement and follow-up measurements at 3 and 12 months
- Compliance patients: dropouts at baseline, 3 and 12 months
- Compliance treatment providers: contact duration, use of tools CBT

Notes
Source of funding: the Occupational Health Service of Royal KPN; The Netherlands Organisation of Scientific Research (NWO); TNO Work and Employment; the Foundation for Quality in Occupational Health (SKB)
Ethics: not reported

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Characteristics of studies awaiting classification

*de Vente 2008*

Methods
Trial design: randomised controlled trial
Randomisation procedure: randomisation on patient level
Allocation concealment: randomisation was conducted blindly by an independent person using a computer-generated list of random numbers in blocks of 24.
Blinding: blinding of patients was not reported, but would be impossible due to the large differences between the interventions
Follow-up: 10 months
Inclusion period: not reported

Participants
Country: The Netherlands
Healthcare setting: primary care in The Netherlands
Work setting: employees in The Netherlands
Number: Trial intervention 1: n=28; Trial intervention 2: n=28; Comparison intervention: n=26
Age, mean (sd): Trial intervention 1: 41.6 (9.4) years; Trial intervention 2: 41.5 (10.3) years; Comparison intervention: 40.9 (9.6) years

Sex: Trial intervention 1: 39% female; Trial intervention 2: 43% female; Comparison intervention: 35% female

Recruitment: employees who were between two weeks and six months on sick leave were recruited through two occupational health services (n 62), general practitioners (n 7), and by self-referral in reaction to advertisements (n 13)

Inclusion: the presence of symptoms of neurasthenia, a primary role of work-related stressors in the development of complaints, and the presence of impaired daily functioning as indicated by (partial) sickness absence

Exclusion: a primary diagnosis of major depression, social phobia, panic disorder, somatoform disorder other than undifferentiated, posttraumatic stress disorder, obsessive-compulsive disorder, hypomania, or psychotic disorders; severe depressive complaints; a medical condition that might explain fatigue (e.g., diabetes); excessive alcohol or drug use

Interventions

Trial intervention 1:
- Treatment type: individual CBT-based stress management training (SMT) including (a) psycho education, self-assessment of stressors and complaints, lifestyle, and relaxation techniques; (b) cognitive restructuring; (c) time management and goal setting; (d) assertiveness skills; and (e) evaluation and relapse prevention
- Treatment providers: 12 experienced therapists with a master's degree in clinical psychology delivered the SMT; therapists were trained in delivering the treatment according to the protocol in 4 training sessions of 1 hour and received at least four supervision sessions per treatment by one of two experienced senior cognitive-behavioural therapists
- Treatment frequency and duration: 12 sessions of approximately 1 hour

Trial intervention 2:
- Treatment type: group CBT-based stress management training (SMT) including (a) psycho education, self-assessment of stressors and complaints, lifestyle, and relaxation techniques; (b) cognitive restructuring; (c) time management and goal setting; (d) assertiveness skills; and (e) evaluation and relapse prevention
- Treatment providers: 12 experienced therapists with a master's degree in clinical psychology delivered the SMT; therapists were trained in delivering the treatment according to the protocol in 4 training sessions of 1 hour and received at least four supervision sessions per treatment by one of two experienced senior cognitive-behavioural therapists
- Treatment frequency and duration: 12 sessions of approximately 2 hours with 8 participants, conducted by 2 therapists

Comparison intervention:
- Treatment type: usual care based on routine care by an occupational physician or general practitioner, or a maximum of five treatment sessions by a psychologist or social worker
- Treatment providers: OPs, general practitioners, psychologists, social workers

Outcomes

Work-status outcomes:
- time to partial and full return to work

Other outcomes:
- Maslach Burnout Inventory (MBI-NL): baseline questionnaires were sent to patients before the intervention and follow-up measurements at 4, 7 and 10 months of follow-up
- Checklist Individual Strength (CIS): baseline questionnaires were sent to patients before the intervention and follow-up measurements at 4, 7 and 10 months of follow-up
- Depression Anxiety Stress Scales (DASS): baseline questionnaires were sent to patients before the intervention and follow-up measurements at 4, 7 and 10 months of follow-up
- Treatment satisfaction/perceived effectiveness with care received assessed by 4 questions

Notes

Source of funding: The Netherlands Organisation for Health Research and Development (ZonMw), The Netherlands Organization for Scientific Research (NWO; Fatigue at work)

Ethics: approved by ethical committee Department of Psychology, University of Amsterdam

Rebergen 2007
Study name CO-OP Study
See this thesis for more information

Characteristics of ongoing studies

Oostrom 2008
Study name Adapt study
Methods RCT
Participants NA
Interventions NA
Outcomes NA
Starting date 2000
Contact information Corresponding author: Sandra H van Oostrom, MSc
Supplement 3 Study eligibility form

Study ID
ID code:
First author:
Publication year:

Type of study
Instruction:
RCT: study is described as randomized
CCT: concurrent control group used with outcome measurements before/after the intervention
Interrupted time series: outcome measurements at least 3 times before and 3 times after the intervention in one group

- RCT, CCT or interrupted time series
- other study design exclusion
- unsure

Type of participants
1. Adults?
Yes / no exclusion / unsure

2. Worker population?
Yes / no exclusion / unsure

3. At least 50% of study population on sick leave?
Yes / no exclusion / unsure

4. Participants with adjustment disorders?
Yes / no exclusion / unsure
Instruction:
Adjustment disorder must be defined as either:
- diagnosis of adjustment disorder according to DSM IV
- level of stress related symptoms according to validated self-rated or clinician-rated instrument, published in peer reviewed journal

5. Co-morbidity?
- none or common mental disorder
- bipolar or psychotic features exclusion
- unsure

Intervention
Is the study an intervention study?
Yes / no exclusion / unsure
Instruction: Interventions can be aimed at the workplace (e.g. job re-design) or the individual (e.g. psychotherapeutic interventions)

Outcome measure
Was sickness absence measured as outcome?
Yes / no exclusion / unsure