| **Authors &**  **year** | **Design** | **Sample** | **% of sample with adjustment disorder (Diagnostic method), stressor** | **Intervention type (Name)** | **Key intervention components** | **Intervention delivery method, frequency, duration, (delivered to)** | **Outcomes**  **(Measure(s))** | **Participants** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Behavioural-based** | | | | | | | | |
| Arends et al. (2014) | Clustered RCT with 3, 6 and 12 month follow-up | Dutch workers who returned to work after sickness absence due to mental health disorders  Intervention:  Age: 41.3  Male: 27%  Control:  Age: 43.3  Male: 38% | Intervention: 73%  Control: 50%  (ICD-10)  **Stressor:** Not reported | Problem solving intervention (SHARP) | **Intervention:**  1. Create inventory of problems related to return to work  2. Develop solutions and an action plan  3. Evaluate action plan/implemented solutions  **Control:** Care as usual (Guidelines around management of mental health problems in workers) | Occupational therapist delivered 30 minute consultations (2 – 5 sessions) over 3 months | * Hospital Anxiety and Depression Scale * Four-Dimensional Symptom Questionnaire * Return to work | N = 153 |
| Both groups improved on mental health functioning at all follow-up time points, with no significant differences between groups in level of improvement. Full return to work occurred 65 days earlier and partial return to work occurred 12 days earlier for the intervention group compared to controls. | | | | | | | | |
| Hosaka et al. (2000) | Single group pre-post with 6 month follow-up | Japanese cancer patients  Age: 51.3 (8.8)  Male: Unknown | 26% (DSM-IV)  **Stressor:** Not reported | Psychiatric intervention | 1. Cancer psychoeducation 2. Problem-solving 3. Psychological support 4. Relaxation training 5. Guided imagery (cancer-focused) | Five weekly 90 minute group based sessions | - Profile of Mood States (POMS) | N = 47 |
| There were no significant changes in individuals with adjustment disorder from pre to post treatment or at follow-up. | | | | | | | | |
| Hosaka et al. (2001) | Single group pre-post with 6 month follow-up | Japanese cancer patients  Age: 50.2 (6.0)  Male: Unknown | 26% (DSM-IV)  **Stressor:** Not reported | Psychiatric intervention | 1. Cancer psychoeducation 2. Problem-solving 3. Psychological support 4. Relaxation training 5. Guided imagery   (cancer-focused) | Five weekly 90 minute group based sessions, followed by 3 further monthly free talk group session | - Profile of Mood States (POMS) | N = 34 |
| This study reported contradictory findings. | | | | | | | | |
| **Relaxation-based** | | | | | | | | |
| Bos et al. (2014) | Pre-post | Dutch psychiatric outpatients  Age: 45.5 (10.5)  Male 31% | 10% adjustment disorder (DSM-IV)  **Stressor:** Not reported | Mindfulness training (MBSR + MBCT) | 1. Formal mindfulness exercises (Body scan, sitting meditation, yoga) 2. Group discussion of above experiences 3. Psychoeducation 4. Homework | Group therapy for 8 weekly session of 2.5 hours each | - Short Symptom List (SSL)  - World Health Organization Quality of Life (WHOQOL-Bref) | N = 214 |
| The adjustment disorder sub-analyses revealed a significant improvement to SSL and WHOQOL-Bref scores, with moderate to large effect sizes of *d* = 0.59 and 0.87, respectively. | | | | | | | | |
| Hsiao et al. (2014) | RCT with 5, 8, and 14 month follow-up | Taiwanese psychiatric outpatients  Intervention:  Age: 44.5  Male 32%  Control:  Age: 44.0  Male 27% | 100% adjustment disorder with depression (DSM-IV)  **Stressor:** Not reported | Holistic/Eastern therapy (Body-Mind-Spirit) | **Intervention:** Treatment as usual (TAU) + Body-Mind-Spirit:  1. Cognitive restructuring  2. Meditation, relaxation and guided imagery  3. Emotion work  4. Physical exercises  5. Spiritual work  **Control:** TAU (medication and psychoeducational advice) | Eight weekly group-based sessions | - Beck Depression Inventory (BDI)  - State Trait Anxiety Inventory (STAI)  - Suicidal ideation | N = 71 |
| Both groups showed significant reductions in the BDI and STAI, with no significant differences between groups. Suicidal ideation decreased significantly for both groups and there was a greater reduction in suicidal ideation in the intervention group. | | | | | | | | |
| **Cognitive behavioural therapy based** | | | | | | | | |
| Bachem & Maercker (2016) | RCT with 3 month follow-up (for intervention only) | Burglary victims  Intervention:  Age: 50.4 (15.7)  Male 21%  Control:  Age: 41.9 (15.9)  Male 0% | 100% adjustment disorder or adjustment disorder symptomatology (ICD-11)  **Stressor:** Burglary | Self-help bibliotherapy | **Intervention:** Manualised CBT-based self-help including psychoeducation, learning coping strategies, activation of self and social network, and relaxation  **Control:** Wait-list | Self-help manual self-administered over 1 month | - Adjustment disorder New Module – 20 (ADNM-20)  - Post-traumatic stress symptoms  - Depression anxiety and stress scale (DASS-21) | N = 103 |
| There were significant reductions in both groups in ADNM-20 preoccupation scores from pre to post treatment; reductions were significantly greater for the intervention group (*d* = .90). For PTSD symptoms, both groups reduced significantly from pre to post treatment, with significantly greater reductions in the intervention group (*d* = .66). DASS-21 stress and depression scores showed no significant reductions for either group, but the anxiety score showed a significant reduction between pre and post treatment in both intervention and control groups (*d* = .71 and *d* = .36, respectively). At the end of treatment, the number of participants still meeting criteria for adjustment disorder was half as big in the intervention group compared to control.s | | | | | | | | |
| Carta et al.,2012 | Clustered RCT | Rural Italian patients attending GPs with no access to psychological care  Intervention:  Age: 42.2 (19.1)  Male 35%  Control:  Age: 42.8 (18.5)  Male 33% | Intervention: 59%  Control: 53%  (DSM-IV-TR)  **Stressor**: Not defined | Psychological therapy | **Intervention:** Manualised cognitive behavioural counselling  **Control:** TAU (not described) | **Intervention:** TAU delivered by GPs, intervention delivered by psychologists fortnightly over 6 months  **Control:** TAU delivered by GPs | - Beck Depression Inventory (BDI)  - World Health Organization Quality of Life (WHOQOL-Bref)  - Clinical Global Impression (CGI) | N = 64 |
| At the halfway point of treatment, BDI scores had reduced significantly for both intervention and controls. However, at the end of treatment, intervention had significantly lower BDI scores compared to controls. Quality of life also improved significantly in the intervention group compared to controls from the start of treatment to the end. CGI improved significantly in the intervention group but not in controls. | | | | | | | | |
| Hirsh et al. (2009) | Case study | Male with an Implantable Cardioverter Defibrillator  Age: mid 50’s | 100% adjustment disorder with anxiety (DSM-IV)  **Stressor:** Health | Psychological therapy | Cognitive behaviour stress management adapted from manual, including psychoeduction, stress management/relaxation and family therapy. | Five session inpatient and five session outpatient over six weeks, with further follow-up sessions at one and three months | - State Trait Anxiety Inventory (STAI)  - Beck Depression Inventory (BDI) | N = 1 |
| Scores on STAI-State reduced from 72 at baseline to 24 at post treatment and STAI-Trait reduced from 62 at baseline to 22 at post treatment. BDI scores reducing from 18 at pre-treatment to 1 at follow-up (14 weeks). | | | | | | | | |
| Lagerveld et al. (2012) | Clustered controlled trial with 12 month follow-up | Dutch employees on sick leave due to psychological problems | 67% adjustment disorder (DSM-IV)  **Stressor:** Not reported | Psychological therapy | **Intervention:** Work-focused CBT, which was CBT with a work context, plus an additional module focusing on returning to work  **Control:** Manualised CBT | **Intervention:** Individual therapist delivered 12 sessions over 6 months  **Control:** Individual therapist delivered 12 sessions over 6 months | - Symptom Checklist (SCL-90)  - Depression anxiety and stress scale (DASS-21) | N = 208 |
| While the intervention was more effective on return to work levels, it did not significantly differ from controls in the impact on mental health outcomes. Depression and anxiety levels significantly improved in both groups but there was no significant impact of either intervention or control on stress levels. | | | | | | | | |
| Powell & McCone (2004) | Case study | US military cadet  Age: 20  Male | 100% adjustment disorder with anxiety (DSM-IV-TR)  **Stressor:** Terrorism | Psychological therapy | CBT with the following components:  Cognitive impulse control  Challenging irrational beliefs  Stress management skills  Relaxation training | 13 sessions over 12 months | * Outcome Questionnaire 45 (OQ-45) | N = 1 |
| The individual participant showed a reduction from 66 on the OQ-45 at the first session to 11 at 12 month follow-up. | | | | | | | | |
| van der Heiden & Melchior (2012) | Pre post with three month follow-up | Dutch GP patients referred to an outpatient treatment centre  Age: 43.6  Male 32% | 100% adjustment disorder: 50% with depressed mood; 30% with anxiety; 20% other (DSM-IV)  **Stressor:** Not reported | Psychological therapy | Manualised CBT consisting of psychoeducation, self-monitoring of stress, improving lifestyle and coping strategies, modifying negative thoughts | Individual weekly 45 minute sessions | - Symptom Checklist (SCL-90) | N = 10 |
| There were significant reductions in symptomatology as measured by the SCL-90 between pre and post treatment (*d* = 1.25) and from pre-treatment to follow-up (*d* = 1.37). | | | | | | | | |
| van der Klink et al. (2003) | Cluster RCT with 12 month follow-up | Dutch employees from a private company who were on 2 weeks sick leave for an adjustment disorder | 100% adjustment disorder (DSM-IV)  **Stressor:** Not reported | Psychological therapy | **Intervention:** Graded activity approach resembling stress inoculation training (a form of CBT)  **Control:** Usual care (empathic counselling, stress and lifestyle advice, and work-related issue discussion) | Four to five consultations over six weeks, 90 minutes in length, delivered by occupational therapists and a relapse prevention session | - Symptom Checklist (SCL-90)  - Four-Dimensional Symptom Questionnaire (4DSQ) | N = 192 |
| At 3 and 12 months, both groups improved significantly on outcomes with no significant differences between groups. | | | | | | | | |
| **Psychodynamic psychotherapy-related** | | | | | | | | |
| Ben-Itzhak et al. (2012) | RCT | Israeli outpatients  Intervention: Age: 46.7 (10.9)  Male: 23%  Control:  Age: 40.6 (10.2)  Male: 19% | 100% adjustment disorder: 85% mixed depression and anxiety (DSM-IV)  **Stressor:** interpersonal, occupational, economic, health | Psychological therapy | **Intervention:** Manualised brief psychodynamic psychotherapy  **Control:** Intermediate psychotherapy | **Intervention:** Twelve sessions over 12 weeks  **Control:** Approximately 48 sessions for 1 year | - Symptom Checklist (SCL-90) | N = 91 |
| Both groups improved significantly in SCL-90 scores from pre-treatment to 3 months with no significant differences between groups. The additional 9 months of therapy in the control group did not add any significant improvement to participants, and at post-treatment for the controls (12 months) compared to the same time point of 9 month follow-up for the intervention group, scores did not significantly differ. | | | | | | | | |
| Hofer et al. (2010) | Pre-post | Outpatients with an acquired brain injury (ABI)  Age: 51 (36 – 61)  Male 55% | 100% adjustment disorder: depressed mood (80%); anxiety (20%)  (DSM-IV-TR)  **Stressor:** Health | Psychological therapy | 1. Resource activation 2. Problem activation 3. Clarification of meaning 4. Problem mastery | Unlimited psychotherapy sessions which lead to on average 23 sessions over 12 to 18 months | - Beck Depression Inventory (BDI) | N = 11 |
| At the end of treatment, none of the patients retained their adjustment disorder diagnoses. From pre to post therapy, BDI scores reduced significantly (*d* = 1.3). | | | | | | | | |
| Kramer et al. (2010) | Pre-post | French university students  Age: 24 (3.86)  Male 18% | 100% with adjustment disorder with depressed mood  (DSM-IV)  **Stressor:** Not described | Psychological therapy | Manualised short-term psychodynamic psychotherapy | Treatment lasting up to one year of weekly sessions | - Symptom Checklist (SCL-90) | N = 32 |
| SCL-90 scores decreased significantly at the end of treatment (*d* = 1.24).  A second study (Kramer et al., 2015) published from this data set investigated changes in depression scores and found a significant reduction from pre to post treatment (*d* = 0.69) | | | | | | | | |
| **Pharmacotherapy – Depressive symptoms** | | | | | | | | |
| Amodeo et al. (2011) | RCT | Italian cancer patients with depressive disorders  Intervention:  Age: 59.9 (11.7)  Male: 27%  Control:  Age: 61.8 (10.5)  Male: 33% | 50% with adjustment disorder with depressed mood (DSM-IV-TR)  **Stressor**: Health | Pharmacotherapy | **Intervention:** Slow-up titration of paroxetine (SSRI)  **Control:** Standard-up titration of paroxetine (SSRI) | **Intervention:** 2.5 m/g day increasing by 2.5m/g each third day until 10m/g was reached day 8. Day 9 dose was increased to 15m/g day and on day 11 the full 20m/g day dose was reached  **Control:** 10m/g day and increased to 20m/g day on day 8  Both treatments lasted 8 weeks | * Hospital Anxiety and Depression Scale (HADS) * Montgomery Asberg Depression Rating Scale (MADRS) * Hamilton Anxiety Rating Scale (HAM-A) * Clinical Global Impression (CGI) * Quality of life (EORTC QLQ-C30) | N = 30 |
| Both groups reduced significantly in their MADRS, HADS, HAM-A scores, and CGI scores in addition to improving their quality of life scores from pre-treatment to end of treatment. Those who received slow-up titration paroxetine had significantly lower MADRS scores at mid-treatment (4 weeks) and significant lower HADS scores at mid treatment (4 weeks) and end of treatment (8 weeks). There was no significant differences between groups on HAM-A scores or quality of life total scores at the end of treatment. There was no significant differences in CGI improvement between groups. Participants in the intervention arm (slow-up titration paroxetine) reported less side effects than the controls. | | | | | | | | |
| Hameed et al. (2005) | Retrospective cohort followed over 4 months | Primary care patients with depressive disorders receiving anti-depressants  Age: Unknown  Male: 20% | 34% adjustment disorder with depressed mood (DSM-IV)  **Stressor**: Not reported | Pharmacotherapy | SSRIs (24% of patients received concurrent psychotherapy) | Naturalistic delivery of antidepressant medication as determined by the depression management team | - Number of DSM-IV symptoms  - Patient Health Questionnaire (PHQ-9) | N = 96 |
| Response was defined as when any follow-up symptom value was equal to 0. Patients who continued to have 0 symptoms throughout the follow-up period were defined as a sustained response. Overall response to treatment for adjustment disorder participants was 33-100% and sustained response over 4 months was achieved for 33-100% of patients. No specific SSRI was found to be more effective than any other. | | | | | | | | |
| Özten et al. (2015) | Case study | Psychiatric patient  Age: 34 years  Female | 100% adjustment disorder with mixed anxiety-depressive mood  **Stressor**: Interpersonal | Pharmacotherapy | Sertraline (SSRI) started and discontinued due to side effects; Fluoxetine (SSRI) started and maintained + Couples psychotherapy | Sertraline (25 mg/day – 50 mg/day) for a week, then fluoxetine (20m/g day) for 7 weeks | * Hamilton Depression Rating Scale (HDRS) * Hamilton Anxiety Rating Scale (HAS) * Beck Depression Inventory (BDI) | N = 1 |
| Pre-treatment scores were 18 (HDRS); 12 (HAS); and 24 (BDI), after 2 months of treatment scores had dropped to 11, 6, and 9. | | | | | | | | |
| **Pharmacotherapy – Anxious symptoms** | | | | | | | | |
| Nguyen et al. (2006) | RCT with 1 week follow-up after discontinuation | French outpatients seeing GPs  Intervention:  Age: 44.0 (13.4)  Male: 38%  Control:  Age: 42.0 (13.1)  Male: 30% | 100% adjustment disorder with anxiety (DSM-IV)  **Stressor:** 41% family-related; 30% work related; 9% health; 20% other | Pharmacotherapy | **Intervention:** Etifoxine (non-benzodiazepine anxiolytic)  **Control:** Lorazepam (benzodiazepine) | **Intervention:** 150 mg/day for 28 days  **Control:** 2 mg/day for 28 days | * Hamilton Anxiety Rating Scale (HAM-A) * Clinical Global Impression Scale (CGI) * Sheehan Disability Scale (SDS) * Social Adjustment Scale Self-Report (SAS-SR) | N = 191 |
| Etifoxine was found non-inferior (i.e. at least as effective) to the control, but a significantly higher percentage of the treatment group were classified as responders (72%) at the end of treatment compared to controls (56%). Both groups improved in CGI ratings, but etifoxine had a higher proportion of markedly improved individuals. SAS-SR and SDS scores improved comparably between groups with no significant differences. | | | | | | | | |
| Stein (2015) | RCT | South African outpatients  Intervention:  Age: 40.0 (11.8)  Male: 32%  Control:  Age: 38.9 (12.8)  Male: 30% | 100% adjustment disorder with anxiety (DSM-IV)  **Stressor**: 39% interpersonal, (38%) work/school; economic (12%); other (11%) | Pharmacotherapy | **Intervention:** Etifoxine (non-benzodiazepine anxiolytic)  **Control:** Alprazolam (benzodiazepine) | **Intervention:** Three capsules per day for 28 days (150mg/day) Control: Three capsules per day for 28 days (1.5mg/day) | * Hamilton Anxiety Rating Scale (HAM-A) * Self-report for the Assessment of Adjustment Disorders | N = 201 |
| Alprazolam improved outcomes on HAM-A significantly more than etifoxine at day 7 but at day 35 (one week after discontinuation), etifoxine demonstrated non-inferiority compared with alprazolam on HAM-A measures. There were no significant differences at day 35 for other measures. There were more adverse events reported in the alprazolam group. | | | | | | | | |
| **Combined psychological and pharmacotherapy** | | | | | | | | |
| Ichitovkina et al. (2014) | Controlled cohort | Russian combatants recently returned from assignment  Intervention: Age: 40.0 (1.4)  Male: Unknown  Control:  Age: 31.3 (1.5)  Male: Unknown | 60% with adjustment disorder: 27% with depressed mood; 32% with mixed anxiety and depressed mood; 10% conduct (ICD-10)  **Stressor:** Not defined | Medical-psychological rehabilitation | Psychological: Art therapy, collective hypnosuggestion, rational therapy, family therapy  Pharmacotherapy: Primarily SSRIs and benzodiazepines | Psychiatrist delivered 14 days of inpatient treatment followed by twice-weekly outpatient treatment for five weeks, consisting of individual, group and family therapy | - Adaptivity multi-factorial personality questionnaire (MPQ) | N = 199 |
| Symptoms of detachment, intrusive thoughts, feelings of emptiness, fear and anxiety, and irritability as measured by the MPQ were significantly reduced after treatment in the intervention group. It is unknown how these changes compared to controls. | | | | | | | | |