Mindfulness-based 'third wave' cognitive and behavioural therapies versus treatment as usual for depression

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Abstract

This is the protocol for a review and there is no abstract. The objectives are as follows:

1. To examine the effectiveness and acceptability of all third wave CBT approaches compared with treatment as usual/waiting list/attention placebo control conditions for acute depression.
2. To examine the effectiveness and acceptability of different third wave CBT approaches (ACT, compassionate mind training, functional analytic psychotherapy, meta-cognitive therapy, dialectical behaviour therapy, MBCT, extended behavioural activation and meta-cognitive therapy) compared with treatment as usual/waiting list/attention placebo control conditions for acute depression.

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CONTRIBUTIONS OF AUTHORS Rachel Churchill conceived, designed, secured funding for, and is managing this programme of linked reviews. She has worked on all aspects of the development of this project, including building a review team, protocol development, developing a search strategy and compiling data-extraction forms. Dr Churchill is responsible for writing and preparing this review. Along with Dr Vivien Hunot, she conducted the original review on which this programme is based. She is guarantor of the individual reviews in this programme of work.

Theresa Moore is managing the organisation of data for the 12 linked reviews of psychotherapies for depression including the search results, tracking of papers, and management of references for the project. She has developed the data collection forms. She designed the database and spreadsheets for data collection and has contributed to writing sections of the protocols and commented on text of the protocols.

Philippa Davies contributed to the design of the review and development of the protocol.

Deborah Caldwell provided methodological and statistical advice for each of 12 linked protocols assessing the effects of different psychotherapies for depression. She contributed to the design of the data extraction form, drafted some sections of the protocols and commented on the protocol manuscripts. She designed the plan for the multiple treatment meta-analysis for the overview of reviews. Glyn Lewis provided a clinical perspective on 12 linked psychotherapies for depression protocols.

Vivien Hunot provided theoretical and clinical expertise for designing this programme of linked reviews, drawing from her training and clinical practice as a psychotherapeutic counsellor and cognitive behavioural therapist in NHS primary care settings. She worked on protocol development, developing a search strategy and compiling data extraction forms, and wrote the protocols for each review. Along with Dr Rachel Churchill, she conducted the original review on which this programme is based.

Hannah Jones read and commented on the protocols.

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DECLARATIONS OF INTEREST None known.

3. To examine the effectiveness and acceptability of all third wave CBT approaches compared with different types of comparator (standard care, no treatment, waiting list, attention placebo) for acute depression.

BACKGROUND

Description of the condition

Major depression is characterised by persistent low mood and loss of interest in pleasurable activities, accompanied by a range of symptoms including weight loss, insomnia, fatigue, loss of energy, inappropriate guilt, poor concentration and morbid thoughts of death (APA 2000). Somatic complaints are also a common feature of depression, and people with severe depression may develop psychotic symptoms (APA 2000).

Depression is the third leading cause of disease burden worldwide and is expected to show a rising trend over the next 20 years (WHO 2004; WHO 2008). A recent European study has estimated the point prevalence of major depression and dysthymia at 3.9% and 1.1% respectively (ESEMED/MHEDEA 2004). As the largest source of non-fatal disease burden in the world, accounting for 12% of years lived with disability (Ustun 2004), depression is associated with marked personal, social and economic morbidity, loss of functioning and productivity and creates significant demands on service providers in terms of workload (NICE 2009). Depression is also associated with a significantly increased risk of mortality (Cuijpers 2002). The strength of this association, even taking account of confounders such as physical impairment, health-related behaviours and socio-economic factors, has been shown to be comparable to, or greater than, the strength of the association between smoking and mortality (Mykletun 2009).

Description of the intervention

Clinical guidelines recommend pharmacological and psychological interventions, alone or in combination, in the treatment of moderate to severe depression (NICE 2009). The prescribing of antidepressants has increased dramatically in many Western countries over the last 20 years, mainly with the advent of selective serotonin reuptake inhibitors and newer agents such as venlafaxine. Antidepressants continue to be the mainstay of treatment for depression in health care settings (Ellis 2004; NICE 2009).

Whilst antidepressants are of proven efficacy in acute depression (Cipriani 2005; Guaiana 2007; Arroll 2009; Cipriani 2009; Cipriani 2009a; Cipriani 2009b), adherence rates remain very low (Hunot 2007; van Geffen 2009), in part due to patients' concerns about side effects and possible dependency (Hunot 2007). Furthermore, surveys consistently demonstrate patients' preference for psychological therapies over antidepressants (Churchill 2000; Riedel-Heller 2005). Therefore, psychological therapies can provide an important alternative or adjunctive intervention for depressive disorders.

A diverse range of psychological therapies is now available for the treatment of common mental disorders (Pilgrim 2002). Psychological therapies may be broadly categorised into four separate philosophical and theoretical schools, comprising psychoanalytic/dynamic (Freud 1949; Klein 1960; Jung 1963), behavioural (Watson 1924; Skinner 1953; Wolpe

1958), humanistic (Maslow 1943; Rogers 1951; May 1961) and cognitive approaches (Lazarus 1971; Beck 1979). Each of these four schools incorporates a number of differing and overlapping psychotherapeutic approaches. Some psychotherapeutic approaches, such as cognitive analytic therapy (Ryle 1990), explicitly integrate components from several theoretical schools. Other approaches, such as interpersonal therapy for depression (Klerman 1984), have been developed to address characteristics considered to be specific to the disorder of interest.

Increasing interest in the role of cognition gave rise to a 'cognitive revolution' the field of psychology in the 1970s (Mahoney 1978). The most influential approaches were rational emotive behaviour therapy (Ellis 1962), cognitive behaviour modification (Meichenbaum 1977) and cognitive therapy (Beck 1979). The latter developed as an approach for understanding and treating depression. However, Beck and Ellis both acknowledged the value of behaviour therapy (Rachman 1997), and during the 1980s and 1990s the two approaches merged to form cognitive-behavioural therapy (CBT).

CBT is generally regarded as a family of allied therapies (Mansell 2008) that draw on a common base of behavioural and cognitive models of psychological disorders and utilise a set of overlapping techniques (Roth 2008). In CBT, cognition is central to the treatment of psychological disorders, with emotions and behaviour thought to be mediated by cognitive processes. The fundamental aim of CBT is to identify unhelpful cognitions or 'negative automatic thoughts', derived from long-standing negative beliefs/assumptions about the self, other people or the world. Through challenging their meaning, and eliciting more realistic thoughts and assumptions, the CBT model proposes that emotions and behaviour will also be changed (Clark 1995). There is an extensive evidence base for the effectiveness of CBT, which is recommended as the first-line psychological therapy approach for depression (NICE 2009).

Although the evolution of CBT over the past three decades has tended to overshadow more behavioral approaches, evidence supporting pure behavioural approaches has continued to emerge. The findings from Jacobson 1996, a component analysis trial of CBT, suggested that behavioral components alone might work just as well as CBT. These findings revitalized interest in purely behavioral treatments for depression and the development of a more fully realized behavioural intervention based on a contextual approach (Martell 2001).

Prompted by continuing debate in this area, a recent systematic review of 17 RCTs demonstrated equivalence between CBT and behavioural therapy in terms of depression recovery rates, symptom levels and participant dropout (Ekers 2008). Proponents of a new generation of behaviour therapies, the 'third wave' of CBT, suggest that the rational challenging of thoughts (a principal feature of CBT interventions) is less important (Longmore 2007) and have sought new strategies by which to achieve change (Segal 2002). Key third wave CBT approaches in the treatment of depression include acceptance and commitment therapy (ACT) (Hayes 2004), compassionate mind training (CMT) (Gilbert 2005), functional analytic psychotherapy (FAP) (Kohlenberg 1991), meta-cognitive therapy (MCT) (Wells 2008), mindfulness-based cognitive therapy (MBCT) (Teasdale 1995), dialectical behaviour therapy (DBT) (Linehan 1993), and the expanded model of

behavioural activation (BA) (Martell 2001) (see Types of interventions section for a detailed description of each type of therapy).

How the intervention might work

Third wave approaches conceptualise cognitions and cognitive thought processes as a form of 'private behaviour' (Hayes 2006; Hofmann 2008) and target the emotional response to the situation, focusing primarily on the function of cognitions, such as thought suppression or experiential avoidance (Hofmann 2008). This contrasts with traditional CBT which links thoughts, feelings and behaviour, and targets the situation or trigger that generates the emotional response, encouraging the cognitive appraisal of these triggers, and focusing on changing the content of cognitions.

Third wave approaches use strategies such as mindfulness exercises, acceptance of unwanted thoughts and feelings, and cognitive diffusion (stepping back and seeing thoughts as just thoughts) to elicit change in the thinking process. Whilst third wave CBT methods are more often delivered in an experiential rather than didactic manner (Hayes 2004), features of traditional behavioural and cognitive therapies, such as goal setting, exposure work and skills acquisition (Hayes 2006) continue to play an important role in helping to reduce depressive symptoms.

Why it is important to do this review

It has been suggested that proponents of third wave CBT approaches were 'getting ahead of the data' (Corrigan 2001). However, some systematic reviews have already been undertaken. For example, Hayes and colleagues conducted a narrative review across all conditions/disorders to provide empirical support for dialectical behaviour therapy (DBT) (a treatment used most commonly for borderline personality disorder), functional analytic psychotherapy (FAP) and acceptance and commitment therapy (ACT), but no meta-analyses were conducted (Hayes 2004). A more recent systematic review of mindfulness-based cognitive therapy (MBCT) focused on the prevention of relapse or recurrence of major depression (Coelho 2007). Ost 2008 undertook a review and meta-analysis of third wave CBT approaches for any disorder compared with treatment as usual or any other intervention, and drew attention to the 'less stringent' research methodology used in third wave treatment RCTs. However, for each third wave approach, effect sizes were calculated across disorders, rather than by individual disorder.

Although there is much interest amongst CBT practitioners in the application of third wave CBT approaches, the updated National Institute for Health and Clinical Excellence treatment guidelines for depression (NICE 2009) only recommend MBCT, and specifically for preventing depression in patients who have had three or more episodes of depression. These guidelines also recommend the use of behavioural activation (BA) for moderate to major depressive disorder, but acknowledge that the evidence for BA is currently less robust. However, the reviews upon which this recommendation was based, like other recent systematic reviews, combined studies using both pure behavioural therapy and those using an 'extended' behavioural activation approach (which is regarded as a third wave CBT intervention) (Churchill 2001; Cuijpers 2007; Ekers 2008; Cuijpers 2008; NICE 2009).

Given the increasing popularity of third wave CBT approaches and the growing body of evidence, a comprehensive review of the effectiveness and acceptability of third wave CBT interventions for depression is required to inform clinical practice and future clinical guideline development. This review forms part of a programme of 12 reviews covering behavioural, cognitive behavioural, psychodynamic, interpersonal, cognitive analytic and other integrative, humanistic and mindfulness-based 'third wave' cognitive and behavioural psychological therapies, all compared with treatment as usual or with one another.

OBJECTIVES

1. To examine the effectiveness and acceptability of all third wave CBT approaches compared with treatment as usual/waiting list/attention placebo control conditions for acute depression.
2. To examine the effectiveness and acceptability of different third wave CBT approaches (ACT, compassionate mind training, functional analytic psychotherapy, meta-cognitive therapy, dialectical behaviour therapy, MBCT, extended behavioural activation and meta-cognitive therapy) compared with treatment as usual/waiting list/attention placebo control conditions for acute depression.
3. To examine the effectiveness and acceptability of all third wave CBT approaches compared with different types of comparator (standard care, no treatment, waiting list, attention placebo) for acute depression.

METHODS

Criteria for considering studies for this review

Types of studies—Randomised controlled trials (RCTs) will be eligible for inclusion in the review. Trials employing a cross-over design will be included in the review (whilst acknowledging that this design is rarely used in psychological therapy trials) but data from the first active treatment phase only will be used. Cluster RCTs will also be eligible for inclusion.

Quasi-randomised controlled trials, in which treatment assignment is decided through methods such as alternate days of the week, will not be eligible for inclusion.

Types of participants

Participant characteristics: Studies of men and women aged 18 years will be included. A Cochrane review on psychotherapy for depression in children and adolescents (<18 years) has been undertaken separately and is soon to be published (Watanabe 2004). The increasing prevalence of memory decline (Ivnik 1992), cognitive impairment (Rait 2005) and multiple comorbid physical disorders/polypharmacy (Chen 2001) in individuals over 74 years may differentially influence the process and effect of psychological therapy interventions. Therefore, to ensure that older patients are appropriately represented in the review (Bayer 2000; McMurdo 2005) an upper age cut-off of <75 years will be used (when a study may have included individuals 75, we will include it so long as the average age is <75) and a previously published Cochrane review on psychotherapeutic treatments for older depressed

people which covers the older age group (Wilson 2008) will be updated concurrently by the authors.

Setting: Studies may be conducted in primary care and community-based settings, or in secondary or specialist settings, and will include referrals as well as volunteers. Studies involving inpatients will be excluded. Studies that focus on specific populations - nurses, care givers, depressed participants at a specific work place - will be included if the participants all meet the criteria for depression.

Diagnosis: We will include all studies that focus on acute phase treatment of clinically diagnosed depression.

1. Studies adopting any standardised diagnostic criteria to define participants suffering from an acute phase unipolar depressive disorder will be included. Accepted diagnostic criteria include Feighner criteria, Research Diagnostic Criteria, DSM-III (APA 1980), DSM- III-R (APA 1987), DSM-IV-TR (APA 2000) or ICD-10 (WHO 1992) criteria. Earlier studies may have used ICD-9 (WHO 1978), but ICD-9 is not based on operationalised criteria, so studies using ICD-9 will be excluded from this category.
2. Mild, moderate and severe depressive disorders are all found in primary care (Mitchell 2009; Rait 2009; Roca 2009). In order to fully represent the broad spectrum of severity of depressive symptoms encountered by healthcare professionals in primary care, studies that used non-operationalised diagnostic criteria or used a validated clinician or self-report depression symptom questionnaire, such as Hamilton Rating Scale for Depression (Hamilton 1960) and Beck Depression Inventory (Beck 1961), to identify depression caseness based on a recognised threshold, will also be included. However, the influence of including this category of studies will be examined in a sensitivity analysis.

Accepted strategies for classifying mild, moderate and severe depression will be employed based, where possible, on those criteria used in the evidence syntheses underpinning the NICE 2009 guidelines for depression.

Studies focusing on chronic depression or treatment resistant depression, i.e. studies that list these as inclusion criteria, will be excluded from the review. Studies in which participants are receiving treatment to prevent relapse following a depressive episode (that is, where participants are not depressed at study entry) will also be excluded.

Studies of people described as 'at risk of suicide' or with dysthymia or other affective disorders such as panic disorder will be included if the participants meet criteria for depression as stated above, but will be excluded if not.

We will not include subgroup analyses of people with depression, selected out of people with mixed diagnoses, because such studies would be susceptible to publication bias (the authors reported such subgroup studies because the results were "interesting"). In other words we will include such studies only if the inclusion criteria for the entire study satisfied our eligibility criteria.

Comorbidity: Studies involving participants with comorbid physical or common mental disorders will be eligible for inclusion, as long as the comorbidity is not the focus of the study. In other words, we will exclude such studies which focused on depression among patients with Parkinson's disease or after acute myocardial infarction but will accept such studies which may have included some subjects with Parkinson's disease or with acute myocardial infarction.

Types of interventions

Experimental interventions: Third wave CBT approaches eligible for inclusion will be grouped into seven main categories, according to the theoretical principles set out by trial authors, as follows:

1. Acceptance and commitment therapy: In acceptance and commitment therapy (ACT) (Hayes 1999; Hayes 2004) therapists aim to transform the relationship between the experience of symptoms and difficult thoughts/feelings, so that symptoms no longer need to be avoided and become just uncomfortable transient psychological events (Harris 2006). In this way, symptom reduction becomes a by-product of treatment (Harris 2006). Clients are encouraged to develop psychological flexibility through six core principles: cognitive defusion (perceiving thoughts, images, emotions, and memories as what they are, rather than what they appear to be); acceptance (allowing these to come and go without struggling with them); contact with the present moment (awareness of and receptiveness to the here and now); use of the observing self (accessing a transcendent sense of self); personal values (discovering what is most important to one's true self); and committed action (setting goals according to values and carrying them out responsibly) (Hayes 1999). In terms of committed action, ACT uses methods in line with traditional behaviour therapy, such as exposure, skills acquisition and goal setting.

2. Compassionate mind training: The key principles of compassionate mind training (CMT), also known as compassion focused therapy (Gilbert 2005; Gilbert 2009), are to motivate the individual to care for their own wellbeing, to become sensitive to their own needs and distress, and to extend warmth and understanding towards themselves (Gilbert 2009). Through developing this style of thinking, individuals may increase the generation of prosocial behaviours that others are more likely to engage with and reward (Allen 2005). Within the therapeutic relationship, the client is encouraged to employ self-soothing actions whilst engaging in CBT techniques, compassionate meditation and imagery.

3. Functional analytic psychotherapy: In functional analytic psychotherapy (FAP) therapists regard cognition as a form of covert behaviour (the activity of thinking, planning, believing and organising) (Kohlenberg 1991), with the relationship between cognition and behaviour seen as a sequence of two behaviours. Major FAP enhancements to CBT include the use of an expanded rationale for the causes and treatment of depression. Based on the premise that the closer in time and place a behaviour is to its consequences, the greater will be the effect of those consequences, the client-therapist relationship is used as an in vivo teaching opportunity to highlight processes occurring during therapy and link these with situations in day to day life (Kohlenberg 2002).

4. Behavioural activation: The original behavioural activation (BA) approach manualised by Jacobson 1996 includes teaching relaxation skills, increasing pleasant events and social and problem-solving skills training, and is regarded as a traditional behavioural therapy model. More recently, the BA approach has been extended by Martell 2001, building on the original behavioural models of depression (Lewinsohn 1974) by introducing a contextual approach to depression. The extended BA model suggests that just as avoidance maintains anxiety, avoidant coping patterns (withdrawal from situations and people) maintain depressed mood, and, therefore, avoidant coping is targeted as a primary problem. Following functional analysis, in which a detailed assessment of how an individual maintains depressive behaviour is carried out, the individual is taught to formulate and accomplish behavioural goals, irrespective of prevailing negative thoughts and mood states (Hopko 2003). Traditional behavioural therapy strategies such as activity charts, relaxation training and increasing pleasant events are also used (Dobson 2001). A second BA approach, behavioral activation treatment for depression (BATD) (Lejuez 2001), proposes that depression is maintained through the use of reinforcers such as increased social attention and escape from aversive tasks. Following functional analysis as described in the extended BA model above, access is weakened to reinforcements such as sympathy and escape from responsibility, and healthy behaviour is systematically activated through the use of goal setting and increased activities (Hopko 2003).

5. Meta-cognitive therapy: Metacognitive therapy for depression (Wells 2008; Wells 2009) is based on the premise that depression is maintained by problematic and difficult to control thinking patterns dominated by rumination and excessive self-focused attention on thoughts and feelings. Depression is maintained and intensified by activation of rumination and patterns of attention. Metacognitive therapy incorporates attention training (ATT) as a means of increasing awareness of thinking and regaining flexible control over it. The programmed practice of ATT serves to counteract depressive inertia through the provision of a set of daily exercises, which consist of actively listening and focusing attention in the context of simultaneous sounds presented at different loudness and spatial locations. MCT also focuses on reducing rumination and unhelpful coping behaviours, and modifies positive (e.g. 'thinking about the causes of depression will help me prevent it') and negative (e.g. 'there's nothing I can do about my thoughts') metacognitive beliefs about rumination. Although MCT is commonly regarded as a third wave CBT approach, Hofmann 2008 reports that Adrian Wells does not view it as such.

6. Mindfulness-based cognitive therapy (MBCT): Mindfulness-based cognitive therapy (MBCT) has been designed as a manualised group-skills training programme to address vulnerability between episodes of recurrent major depression (Williams 2008). As Segal 2002 and colleagues have suggested, the intensity of negative thinking and low concentration experienced by people with acute depression may make it difficult for these individuals to fully participate in MBCT. For these reasons, MBCT has not yet been evaluated as a treatment for acute depression. However, studies of MBCT will be included in this review if, in the future, they are used/modified for the treatment of acute depression.

7. Dialectical Behaviour Therapy (DBT): DBT was originally developed as a treatment for chronically suicidal or self-injurious women with borderline personality disorder (Linehan 1993; Koons 2001). However, the coping skills that comprise an essential component of DBT can be conceptualised as skills useful for managing life, independent of diagnosis, and more recently, standard DBT has been modified for use with depressed older adults (Lynch 2000). Skills hypothesized to be particularly relevant in treating this population, include acceptance of elements of life that cannot be changed (radical acceptance), increased awareness without judgment (mindfulness), attentional control (mindfulness), better tolerance of pain (distress tolerance), acting opposite to depressive urges (opposite action), and increased interpersonal effectiveness (Lynch 2003). Although DBT is commonly regarded as a third wave CBT approach, Hofmann 2008 has noted that Marsha Linehan herself views it, not as a form of third wave CBT, but as a form of CBT that includes acceptance strategies.

Comparators: The control comparison will be ‘treatment as usual’ (also called standard care, usual care or no treatment; TAU), waiting list (WL), attention placebo (AP) and psychological placebo (PP). The type of ‘treatment as usual’ comparator used is likely to influence the observed effectiveness of the intervention and, where possible, for the purposes of heterogeneity analyses, comparators will be subgrouped as waiting list, treatment as usual/usual care or attention placebo. In each study, descriptions of ‘treatment as usual’ and attention placebo conditions will be scrutinised to ensure that they do not comprise an active psychological therapy treatment. Within the ‘treatment as usual’ and waiting list conditions, participants may receive any appropriate medical care during the course of the study on a naturalistic basis, including pharmacotherapy and/or psychological therapy, as deemed necessary by the clinician. Additional treatment(s) received naturalistically by participants in both the control and active comparisons for each included study will be documented.

Format of psychological therapies: The psychological therapy intervention is required to be delivered through face to face meetings between the patient and therapist. Interventions in which face to face therapy is augmented by telephone or Internet-based support will be included in the review. Psychological therapy that is provided wholly by telephone or over the Internet will not be eligible for inclusion. Psychological therapy approaches conducted on either an individual or on a group basis will be eligible for inclusion. There is no limit to the number of sessions and we accept psychological therapy delivered in only one session.

Excluded interventions: The earlier model of behavioural activation (BA) developed and tested by Jacobson 1996 was defined primarily by the proscription of cognitive interventions (Dimidjian 2006), and does not include more contemporary procedures such as identifying and understanding the functional aspects of behaviour change (Martell 2001). For the purposes of this review, this earlier version of BA will be classified as a comparator behavioural therapy intervention. Counselling interventions traditionally draw from a wide range of psychological therapy models, including person-centred, psychodynamic and cognitive behavioural approaches, applied integratively, according to the theoretical orientation of practitioners (Stiles 2008). Therefore, studies of counselling will usually be

included in the integrative therapies reviews. However if the counselling intervention consists of a single discrete psychological therapy approach, it will be categorised as such, even if the intervention is referred to as 'counselling'. If the intervention is manualised, this will inform our classification.

Psychological therapy models based on social constructionist principles (that focus on the ways in which individuals and groups participate in the construction of their perceived social reality) including couples therapy, family therapy, solution-focused therapy, narrative therapy, personal construct therapy, neuro-linguistic programming and brief problem-solving (Watzlavick 1974) will be excluded. These therapies work with patterns and dynamics of relating within and between family, social and cultural systems in order to create a socially constructed framework of ideas (O'Connell 2007), rather than focusing on one individual's reality. Previously published Cochrane reviews on couples therapy for depression (Barbato 2006) and family therapy for depression (Henken 2007) will be updated concurrently.

Studies of long-term, continuation or maintenance therapy interventions designed to prevent relapse of depression or to treat chronic depressive disorders will be excluded from the review. Similarly, studies of interventions designed to prevent a future episode of depression will be excluded.

Guided self-help, in which the practitioner provides brief face to face non-therapeutic support to patients who are using a self-help psychological therapy intervention, will be excluded as will bibliotherapy and writing therapies.

Psychological therapy that is provided wholly by telephone or over the Internet will not be eligible for inclusion.

Studies of dual modality treatments, in which patients are randomised to receive a third wave cognitive and behavioural psychotherapy intervention combined with pharmacological treatment and compared with a treatment as usual control condition, will be excluded from the current review, and will be examined in a separate programme of reviews on combination treatments for depression.

Component or dismantling studies, in which the effectiveness of individual components of a third wave cognitive behavioural approach are investigated, will not be included. Data from these studies will be extracted and included in a separate overview of psychological therapies for depression, in which multiple treatments meta-analysis (MTM) will be used to compare the relative effectiveness of all psychotherapies, regardless of whether they have been directly compared in direct RCTs. If there is sufficient data, we will use the MTM model proposed in Welton 2009 to allow conclusions to be drawn regarding which components, or combination of components, are most effective at reducing depressive symptoms. See Unit of analysis issues for further detail on MTM.

Types of outcome measures

Primary outcomes:

1. Treatment efficacy: the number of patients who respond to treatment, based on changes on Beck Depression Inventory (BDI) (Beck 1961), Hamilton Rating Scale for Depression (HAM-D) (Hamilton 1960) or Montgomery-Asberg Depression Rating Scale (MADRS) (Montgomery 1979), or any other validated depression scale. Many studies define response by 50% or greater reduction on BDI, HAM-D etc. but some studies define response using Jacobson's Reliable Change Index; we will accept the study authors' original definition. If the original authors report several outcomes corresponding with our definition of response, we will give preference to BDI for self-rating scale and HAM-D for observer-rating scale.
2. Treatment acceptability: the number of participants who drop out of psychological therapy treatment for any reason.

Secondary outcomes:

1. The number of patients who remit on treatment, based on the endpoint absolute status of the patients, as measured by Beck Depression Inventory (BDI) (Beck 1961), Hamilton Rating Scale for Depression (HAM-D) (Hamilton 1960) or Montgomery-Asberg Depression Rating Scale (MADRS) (Montgomery 1979), or any other validated depression scale. Examples of definitions of remission include 10 or less on BDI, 7 or less on HAM-D or 10 or less on MADRS; we will accept the study authors' original definition. If the original authors report several outcomes corresponding with our definition of response, we will give preference to BDI for self-rating scale and HAM-D for observer-rating scale
2. improvement in depression symptoms, based on a continuous outcome of group mean scores at the end of treatment using BDI, HAM-D, MADRS, or any other validated depression scale.
3. Improvement in overall symptoms, using the Clinical Global Impressions scale (CGI) (Guy 1976).
4. Improvement in anxiety symptoms, measured using a validated continuous scale, either assessor-rated, such as the Hamilton Anxiety Scale [HAM-A] (Hamilton 1959) or self-report, including the Trait subscale of the Spielberger State-Trait Anxiety Inventory (STAI-T) (Spielberger 1983) and the Beck Anxiety Inventory (BAI) (Beck 1988).
5. Adverse effects, such as completed suicides, attempted suicides and worsening of symptoms, where reported, will be summarised in narrative form.
6. Social adjustment, social functioning including the Global Assessment of Function (Luborsky 1962) scores, where reported, will be summarised in narrative form.
7. Quality of life, using validated measures such as the SF-36 (Ware 1993), HoNOS (Wing 1994) and WHOQOL (WHOQOL 1998), where reported, will be summarised in narrative form.
8. Economic outcomes (e.g. days of work absence/ability to return to work, number of appointments with primary care physician, number of referrals to secondary

services, use of additional treatments) where reported, will be summarised in narrative form.

Search methods for identification of studies

Electronic searches

CCDANCTR Registers: We will search two clinical trials registers created and maintained by the Cochrane Depression, Anxiety and Neurosis Group (CCDAN), the CCDANCTR-Studies Register and the CCDANCTR-References Register. References to trials for inclusion in the Group's registers are collated from routine (weekly) searches of MEDLINE, EMBASE and PsycINFO, quarterly searches of the Cochrane Central Register of Controlled Trials (CENTRAL) and additional *ad hoc* searches of other databases (PSYINDEX, LILACS, AMED, CINAHL). These searches employ generic terms for depression anxiety and neuroses; together with sensitive (database specific) RCT filters.

References to trials are also sourced from international trials registers via the World Health Organisation's trials portal (<http://apps.who.int/trialsearch/>); drug companies; the hand-searching of key journals, conference proceedings and other (non-Cochrane) systematic reviews and meta-analyses.

Details of the generic search strategies can be found in the 'Specialized Register' section of the Cochrane Depression, Anxiety and Neurosis Group's module text.

1. The CCDANCTR-Studies Register: The CCDANCTR-Studies Register contains over 11,000 trials for the treatment or prevention of depression, anxiety and neurosis. Each trial has been coded using the EU-Psi coding manual (as a guide) and includes information on intervention, condition, comorbidities, age, treatment setting etc.

The studies register will be searched using the following search terms: Condition = (depress* or dysthymi*) and Intervention = (*therap* or training)

2. The CCDANCTR-References Register: The CCDANCTR-References Register contains bibliographic records of reports of trials coded in the CCDANCTR-Studies Register together with several other uncoded references (total number of records=24,500). This register will be searched using a comprehensive list of terms for 'psychotherapies' as indicated in Appendix 1. Records already retrieved from the search of the CCDANCTR-Studies Register will be de-duplicated.

Searching other resources

1. Reference lists: The references of all selected studies will be searched for more published reports and citations of unpublished studies. Relevant review papers will be checked.

2. Personal communication: Subject experts will be contacted to check that all relevant studies, either published or unpublished, have been considered for inclusion.

3. Other websites: A website relating specifically to mindfulness-based therapies <http://www.mindfulexperience.org/> will also be searched.

Data collection and analysis

Selection of studies: Two review authors (RC and VH) will examine the abstracts of all publications obtained through the search strategy. Full articles of all the studies identified by either of the review authors will then be obtained and inspected by the same two review authors for trials meeting the following criteria:

1. Randomised controlled trial;
2. Participants have depression diagnosed by operationalised criteria;
3. Any third wave CBT approach (ACT, compassionate mind training, functional analytic psychotherapy, extended behavioural activation model, meta-cognitive therapy, MBCT or DBT) compared with non-treatment, waiting list control or treatment as usual.

Conflicts of opinion regarding eligibility of a study will be discussed with a third review author, having retrieved the full paper and consulted the authors if necessary, until consensus is reached. External subject or methodological experts will be consulted if necessary.

Data extraction and management: Data from each study will be extracted independently by two review authors. Any disagreement will be discussed with an additional review author and where necessary, the authors of the studies will be contacted for further information.

Information relating to study population, sample size, interventions, comparators, potential biases in the conduct of the trial, outcomes including adverse events, follow-up and methods of statistical analysis will be abstracted from the original reports into specially designed paper forms then entered into a spreadsheet.

Management of time points: Post-treatment outcomes and outcomes at each reported follow-up point will be summarised. Where appropriate and if the data allow, outcomes will be categorised as short term (up to 6 months post-treatment), medium term (7 to 12 months post-treatment) long term (longer than 12 months).

Waiting list controls: A commonly used 'treatment as usual' is to randomise participants to active intervention groups and control group, and then to provide the active intervention to both groups but to delay delivery of the intervention to the control group until after those in the intervention group have completed treatment. Thus both groups receive the active intervention but at different times. Sometimes trialists describe this as a 'Waiting list control' or the control participants are placed 'on a waiting list'.

Data are collected at baseline, when groups are randomised and at the 'end-of-treatment' at which point participants in the active intervention group stop receiving the active intervention and the participants on the waiting list *start* the active intervention. There may be a follow-up of participants at time points after the end-of-treatment.

For studies like this we will include data up to the time point at which the waiting list participants start to receive treatment. Follow-up data for these participants will not be used.

To include follow-up data could introduce bias as the intervention is not as originally allocated at the point of randomisation and participants may no longer be comparable. For instance, baseline risk for participants who received delayed treatment may have changed (e.g. participants may be more depressed).

Assessment of risk of bias in included studies: Risk of bias will be assessed for each included study using the Cochrane Collaboration 'risk of bias' tool (Higgins 2008a). The following six domains will be considered:

1. Sequence generation: was the allocation sequence adequately generated?
2. Allocation concealment: was allocation adequately concealed?
3. Blinding of participants, personnel and outcome assessors for each main outcome or class of outcomes: was knowledge of the allocated treatment adequately prevented during the study?
4. Incomplete outcome data for each main outcome or class of outcomes: were incomplete outcome data adequately addressed?
5. Selective outcome reporting: are reports of the study free of suggestion of selective outcome reporting?
6. Other sources of bias: was the study apparently free of other problems that could put it at a high risk of bias? Additional items to be included here are therapist qualifications, treatment fidelity and researcher allegiance/conflict of interest.

A description of what was reported to have happened in each study will be provided, and a judgement on the risk of bias will be made for each domain within and across studies, based on the following three categories:

- A. Yes (low risk of bias)
- B. Unclear
- C. No (high risk of bias).

Two independent review authors will assess the risk of bias in selected studies. Any disagreement will be discussed with a third review author. Where necessary, the authors of the studies will be contacted for further information. All risk of bias data will be presented graphically and described in the text. Allocation concealment will be used as a marker of trial quality for the purposes of undertaking sensitivity analyses.

Measures of treatment effect

Continuous outcomes: Where studies have used the same outcome measure for comparison, data will be pooled by calculating the mean difference (MD). Where different measures are used to assess the same outcome, data will be pooled with standardised mean difference (SMD) and 95% confidence intervals calculated.

Dichotomous outcomes: These outcomes will be analysed by calculating a pooled odds ratio (OR) and 95% confidence intervals for each comparison. Because ORs can be difficult

to interpret, these pooled ORs will be converted to relative risks (RR) using the formula provided in The Cochrane Handbook (Higgins 2008) and presented in this form for ease of interpretation.

Unit of analysis issues—Studies with more than two intervention arms can pose analytical problems in pair-wise meta-analysis. Where studies have two or more active treatment arms to be compared against treatment as usual, data will be managed in this review as follows:

Continuous data: Means, SDs and number of participants for each active treatment group will be pooled across treatment arms as a function of the number of participants in each arm to be compared against the control group (Law 2003; Higgins 2008; Higgins 2008b).

Dichotomous data: Active treatment groups will be collapsed into a single arm for comparison against the control group, or the control group will be split equally between the treatment groups.

Multiple treatment meta-analysis: One method which retains the individual identity of each intervention and allows multiple intervention comparisons to be made, without the need to lump or split intervention arms, is a multiple treatment meta-analysis (MTM) (Lu 2004; Caldwell 2005; Cipriani 2009b). MTM (also known as Mixed Treatment Comparison or Network Meta-analysis) refers to ensembles of trial evidence in which direct and indirect evidence on relative treatment effects are pooled. The objective of an MTM analysis is to combine all the available trial evidence into an internally consistent set of estimates while respecting the randomisation in the evidence. An MTM provides estimates of the effect of each intervention relative to every other, whether or not they have been directly compared in trials. One can also calculate the probability that each treatment is the most effective. We do not intend to use an MTM in this review, as we are unlikely to have sufficient data for the analysis. However, this review forms part of a series of 12 reviews which will contribute studies to an overview of reviews (Becker 2008; Higgins 2008b) in which MTM will be used as the main analytical strategy.

Dealing with missing data—Missing dichotomous data will be managed through intention to treat (ITT) analysis, in which it will be assumed that patients who dropped out after randomisation had a negative outcome. Best / worse case scenarios will also be calculated for the clinical response outcome, in which it will be assumed that dropouts in the active treatment group had positive outcomes and those in the control group had negative outcomes (best case scenario), and that dropouts in the active treatment group had negative outcomes and those in the control group had positive outcomes (worst case scenario), thus providing boundaries for the observed treatment effect. If there is a large amount of missing information then these best / worst case scenarios will be given greater emphasis in the presentation of the results.

Missing continuous data will either be analysed on an endpoint basis, including only participants with a final assessment, or analysed using last observation carried forward to the final assessment (LOCF) if LOCF data were reported by the trial authors. Where SDs are

missing, attempts will be made to obtain these data through contacting trial authors. Where SDs are not available from trial authors, they will be calculated from P values, t-values, confidence intervals or standard errors, where reported in articles (Deeks 1997).

Where the vast majority of actual SDs are available and only a minority of SDs are unavailable or unobtainable, a method used for imputing SDs and calculating percentage responders devised by Furukawa and colleagues (Furukawa 2005; Furukawa 2006) will be used. Where this method is employed, data will be interpreted with caution, taking account of the degree of heterogeneity observed. A sensitivity analysis will also be undertaken to examine the effect of the decision to use imputed data.

Where additional figures are not available or obtainable, and it is not deemed appropriate to use the Furukawa method described above, the study data will not be included in the comparison of interest.

Assessment of heterogeneity—Statistical heterogeneity will be formally tested using the χ^2 test, which provides evidence of variation in effect estimates beyond that of chance.

Since the χ^2 test has low power to assess heterogeneity where a small number of participants or trials are included, the P value will be conservatively set at 0.1. Heterogeneity will also be quantified using the I^2 statistic, which calculates the percentage of variability due to heterogeneity rather than chance. We expect, a priori, that there will be considerable clinical heterogeneity between studies and so I^2 values in the range of 50% to 90% will be considered to represent substantial statistical heterogeneity and will be explored further. However, the importance of the observed I^2 will depend on the magnitude and direction of treatment effects and the strength of evidence for heterogeneity (Higgins 2003; Deeks 2008). Forest plots generated in RevMan 5 now also provide an estimate of τ^2 , the between-study variance in a random-effects meta-analysis. To give an indication of the spread of true intervention effects we will use the τ^2 estimate to form an approximate range of intervention effects using the method outlined in section 9.5.4 of the *Cochrane Handbook for Systematic Reviews of Interventions* (Deeks 2008). This will be undertaken for the primary outcomes only.

Assessment of reporting biases—As far as possible, the impact of reporting biases will be minimised by undertaking comprehensive searches of multiple sources (including trial registries), increasing efforts to identify unpublished material, and including non-English language publications.

We will also try and identify outcome reporting bias in trials by recording all trial outcomes, planned and reported and noting where there are missing outcomes. Where we find evidence of missing outcomes, we will attempt to obtain any available data direct from the authors.

Where sufficient numbers of trials allow for a meaningful analysis, funnel plots will be constructed to establish the potential influence of reporting biases and small study effects.

Data synthesis—Given the potential heterogeneity of psychological therapy approaches for inclusion, together with the likelihood of differing secondary comorbid mental disorders in the population of interest, a random-effects model will be used in all analyses.

Subgroup analysis and investigation of heterogeneity

Clinical heterogeneity:

1. Baseline depression severity: the severity of depression on entering the trial is expected to have an impact on outcome. Heterogeneity analyses will categorise baseline severity as mild, moderate or severe.
2. Number of sessions: there are likely to be differences in the numbers of therapy sessions received and this is expected to affect treatment outcome. Numbers of sessions will be categorised as 1 to 7 sessions, 8 to 12 sessions, 13 to 20 sessions and more than 20 sessions.
3. Type of comparison: the type of comparator used is likely to influence the observed effectiveness of the intervention. Where possible, comparators will be categorised as waiting list, treatment as usual/usual care, or attention placebo.
4. Strength of therapeutic alliance/perceived therapist empathy, based on validated measures such as the Barrett-Lennard Relationship Inventory (Barrett-Lennard 1986) or Working Alliance Inventory (Horvath 1986): where reported, this information will be summarised in narrative form.

In addition to the above, where appropriate, small study effects and potential publication bias will be examined using funnel plots.

Sensitivity analysis—

1. Fidelity to treatment: studies that have not assessed fidelity to the psychological therapy model(s) under evaluation through assessment of audio or videotapes of therapy sessions will be excluded.
2. Study quality: allocation concealment will be used as a marker of trial quality. Studies that have not used allocation concealment will be excluded.
3. Trials where missing data has been imputed will be excluded.
4. Antidepressant treatment (naturalistic use; combination treatment used in both psychological therapy arms).
5. Trials included in the review following post-hoc decisions about their eligibility as a third wave therapeutic approach will be excluded.

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Internal sources

- University of Bristol, UK.

External sources

• Department of Health, UK.

NIHR Programme Grant

APPENDICES: Appendix 1. CCDAN-CTR References Register search (psychotherapies for depression)

Title, Abstract, Keywords = (depress* or dysthymi*)

and

Title, Abstract, Keywords = ((*therap* and ((acceptance* or commitment*) or “activity scheduling” or alderian or art or aversion or brief or “client cent*” or cognitive or color or colour or “compassion-focused” or “compassion* focus*” or compassionate or conjoint or conversion or conversational or couples or dance or dialectic* or diffusion or distraction or eclectic or “emotion* focus*” or emotion-focus* or existential or experiential or exposure or expressive or family or focus-oriented or “focus oriented” or freudian or gestalt or group or humanistic or implosive or insight or integrative or interpersonal or jungian or kleinian or marital or metacognitive or meta-cognitive or milieu or morita or multimodal or multi-modal or music or narrative or nondirective or non-directive or “non directive” or nonspecific or non-specific or “non specific” or “object relations” or “personal construct” or “person cent*” or person-cent* or persuasion or play or “pleas* event*” or primal or problem-focused or “problem focused” or problem-solving or “problem solving” or process-experiential or “process experiential” or psychodynamic or “rational emotive” or reality or “reciprocal inhibition” or relationship* or reminiscence or restructuring or rogerian or schema* or self-control* or “self control*” or “short term” or short-term or sex or “social effectiveness” or “social skill*” or socio-environment* or “socio environment*” or “solution focused” or solution-focused or “stress management” or supportive or time-limited or “time limited” or “third wave” or transference or transtheoretical or validation)) or abreaction or “acting out” or “age regression” or ((assertive* or autogenic or mind or sensitivity) and train*) or autosuggestion or “balint group” or ((behavior* or behaviour*) and (activation or therap* or treatment or contracting or modification)) or biofeedback or catharsis or cognitive or “mind training” or counsel* or “contingency management” or countertransference or “covert sensitization” or “eye movement desensiti*” or “crisis intervention” or “dream analysis” or “emotional freedom” or “free association” or “functional analys*” or griefwork or “guided imagery” or hypno* or imagery or meditation* or “mental healing” or mindfulness* or psychoanaly* or psychodrama or psychoeducat* or “psycho* support*” or psychotherap* or relaxation or “role play*” or “self analysis” or “self esteem” or “sensitivity training” or “support* group*” or therapist or “therapeutic technique*” or “transactional analysis”)

WHAT'S NEW

Date	Event	Description
7 June 2012	Amended	Minor changes to methods

HISTORY

Protocol first published: Issue 9, 2010

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* *Indicates the major publication for the study*

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