Psychotherapeutic treatments for older depressed people (Review)

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ABSTRACT

Background
Despite a number of reviews advocating psychotherapy for the treatment of depression, there is relatively little evidence based on randomised controlled trials that specifically examines its efficacy in older people.

Objectives
To examine the efficacy of psychotherapeutic treatments for depression in older people.

Search strategy
CCDANCTR-Studies and CCDANCTR-References were searched on 11/9/2006. The International Journal of Geriatric Psychiatry and Irish Journal of Psychiatry were handsearched. Reference lists of previous published systematic reviews, included/excluded trial articles and bibliographies were scrutinised.Experts in the field were contacted..

Selection criteria
All randomised controlled trials that included older adults diagnosed as suffering from depression (ICD or DSM criteria) were included. All types of psychotherapeutic treatments were included, categorised into cognitive behavioural therapies (CBT), psychodynamic therapy, interpersonal therapy and supportive therapies.

Data collection and analysis
Meta-analysis was performed, using odds ratios for dichotomous outcomes and weighted mean differences (WMD) for continuous outcomes, with 95% confidence intervals. Primary outcomes were a reduction in severity of depression, usually measured by clinician rated rating scales. Secondary outcomes, including dropout and life satisfaction, were also analysed.

Main results
The search identified nine trials of cognitive behavioural and psychodynamic therapy approaches, together with a small group of 'active control' interventions. No trials relating to other psychotherapeutic approaches and techniques were found. A total of seven trials provided sufficient data for inclusion in the comparison between CBT and controls. No trials compared psychodynamic psychotherapy with controls. Based on five trials (153 participants), cognitive behavioural therapy was more effective than waiting list controls (WMD -9.85, 95% CI -11.97 to -7.73). Only three small trials compared psychodynamic therapy with CBT, with no significant difference in treatment effect indicated between the two types of psychotherapeutic treatment. Based on three trials with usable data, CBT was superior to active control interventions when using the Hamilton Depression Rating Scale (WMD -5.69, 95% CI -11.04 to -0.35), but equivalent when using the Geriatric Depression Scale (WMD -2.00, 95% CI -5.31 to 1.32).

Authors' conclusions
Only a small number of studies and patients were included in the meta-analysis. If taken on their own merit, the findings do not provide strong support for psychotherapeutic treatments in the management of depression in older people. However, the findings do reflect those of a larger meta-analysis that included patients with broader age ranges, suggesting that CBT may be of potential benefit.

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PLAIN LANGUAGE SUMMARY

Psychotherapeutic treatments for older depressed people

Depression is a common problem facing older people and is often associated with loneliness, physical illness and pain. The condition can last for some years and causes considerable distress and illness. A significant majority of depressed elders do not receive treatment because of difficulty in recognition of the condition. Not only can it present with lowered mood but may also present with physical problems including sleep disturbance, loss of appetite, loss of interest, anxiety and lack of energy. Psychotherapy is recognised as a treatment for mild depression. In this review we included seven small trials, involving a total of 153 participants, that examined psychotherapeutic treatments for depression in older people. Five trials compared a form of cognitive behavioural therapy (CBT) against control conditions, and the findings showed that CBT was more effective than control. Two individual trials compared CBT against psychodynamic therapy, with no significant difference in effectiveness indicated between the two approaches. Our review shows that there is relatively little research in this field and care must be taken in generalising what evidence there is to clinical populations.

BACKGROUND

Description of condition and population

Depression can present with varying severity. It can be a long-standing condition, fluctuating in severity over the years, or it can present acutely. In older people, it is associated with handicap, loneliness, pain and loss (Prince 1997). A significant proportion of older people with the condition will describe themselves as experiencing a loss of enjoyment and a feeling of ill health rather than sadness or a feeling of depression. In particular, depression may be associated with increased lack of energy, early morning wakening and other somatic symptoms in older people (Christensen 1999).

The condition is associated with high levels of morbidity (Pennix 2000) and increased use of medical services (Pearson 1999), reflecting the high cost imposed on health services by under-treated, older depressed people (Katon 2003). It has a high mortality rate (Lavretsky 2003) and is one of the major causes of suicide in this age group (Lebowitz 1997). The majority of older people with depression suffer from mild (but often chronic forms) and approximately 2% suffer from major depression (Beekman 1999). In a large study of community residents aged 75 and over Osborn 2002 found a depression prevalence rate of 13.1%. Using similar instruments (a Geriatric Depression Scale of five or more), Stek 2004 found a prevalence of 15.4% in community subjects aged 85 and over. Despite this, depression remains under-diagnosed and under-treated; it is often difficult to diagnose and confused with somatic complaints and may even be inappropriately considered a normal aspect of the ageing process (Nierenberg 2001).

Description of intervention

Even though many older, depressed people suffer from concomitant physical ill health, antidepressants are still likely to be effective (Gill 2003; Wilson 2001). Most guidelines advocate the additional benefit of supporting antidepressant medication with psychological interventions. The British Royal Colleges of Psychiatrists and Primary Care (Baldwin 2003) also emphasise the importance of psychotherapy in the treatment of mild depression in this age group. The World Health Organisation defines four main psychotherapeutic treatment groups (WHO 2007). These include: psychodynamic therapy, interpersonal therapy (IPT), supportive counselling (Rogerian person-centered therapy) and cognitive behavioural therapy (CBT). The more commonly examined psychotherapies are derived from cognitive behavioural schools. These therapies are developed from cognitive therapy, which focuses on dysfunctional beliefs, and then incorporates components of behavioral psychotherapy, and its aim is to correct the negative distorted cognitions and dysfunctional underlying beliefs that maintain depressive symptoms (WHO 2007). They include cognitive therapies, behavioural therapies, problem solving therapies and therapeutic reading materials (bibliotherapies). Numerous descriptive studies have examined the technical issues in adapting these therapies to the clinical diversity associated with ageing (Yost 1986). Some of the more important adaptations include emphasising behavioural techniques, particularly earlier in therapy and often repeating information, using different sensory modalities (Grant 1995).

Psychodynamic therapies are grounded in psychoanalytic principles (WHO 2007). Adaptations may be necessary, including an understanding of physical illness and the implications of approaching the end of life (Shiller 1992). The psychodynamic therapy groups include brief psychodynamic therapies and insight-orientated therapies.

Why it is important to do this review

The main groups have usually been compared with each other or with less structured interventions employed as controls, including reminiscence therapy, psycho-eduction groups, support groups and visual imagery techniques. On occasion, waiting list control groups have been used. Most trials have been conducted on small numbers of older people recruited from a wide variety of sources. Seven meta-analyses (Pinquart 2001, Gerson 1999; Cuijpers 1998; McCusker 1998; Engels 1997; Koder 1996; Scogin 1994a) including three evidence based reviews (Laidlow 2001; Thorpe 2001; Gatz 1998) and four expert consensus statements

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(narrative reviews of the evidence) (Alexopoulos 2001; ASH Pharmacists 1998; Lebowitz 1997; NIH 1992) on psycho-social treatments for geriatric depression, have been produced (Bartels 2002). However, it is evident from these reviews that the evidence base relating to randomised controlled trials is limited. Previous reviews have combined different types studies, including non-randomised studies and continuation studies. It is the purpose of this review to examine the randomised controlled trial evidence. We hope to characterise the patient populations and the nature of the control groups included within the research so as to provide the clinician and patient with as much information as possible to enable informed decisions regarding clinical implications of the findings.

OBJECTIVES

1. To determine whether psychotherapy treatments are effective in the treatment of depression in older people
2. To investigate if there are differences in efficacy between the different types of psychotherapeutic treatment in an older depressed population.
3. Where possible, to perform a meta-analytic synthesis of studies

CRITERIA FOR CONSIDERING STUDIES FOR THIS REVIEW

Types of studies

The review included all randomised controlled trials (RCTs) and cluster randomised trials.

Types of participants

Diagnosis

Patients were included in this review if diagnosed as suffering from depression, either defined by trialists according to DSM, ICD or RDC criteria., or where trials failed to employ diagnostic criteria, the severity of depression was described by the use of standardised rating scales, including the Hamilton Depression Rating Scale, Montgomery and Asberg Rating Scale and the Geriatric Depression Rating Scale.

The review included patients suffering from concomitant physical illness. However, trials including patients with an explicit diagnosis of dementia or Parkinson's disease were excluded. Patients suffering from other mental illnesses were excluded from the review.

Patient characteristics

The review included trials in which patients were described as elderly, geriatric, senile, or older adults, or in which all patients were aged 55 or over (many North American trials of older adult populations use a cut-off of 55 years). Trials in which adults and older people were included were only eligible if they were stratified by the two age groups and then randomised and analysed separately. The review included trials with subjects of either sex.

Settings

The review included trials conducted in primary, secondary, community and in-patient settings, to include nursing homes.

Types of intervention

Psychotherapeutic treatments

Eligible interventions included all psychotherapeutic treatments, which were grouped, where possible, into the following groups:
1. Cognitive behavioural therapies (to include cognitive behavioural therapy, cognitive therapy, behavioural therapy, brief rational insight and problem-solving therapy)
2. Psychodynamic therapies (to include brief psychotherapy and insight orientated psychotherapy)
3. Interpersonal therapies
4. Supportive/counselling therapies

Psychotherapeutic treatments were required to be manualised, with evidence of standardisation. Therapy was given on an individual or group basis. Bibliotherapies derived from the cognitive behavioural school were included as an active form of cognitive behavioural therapy. There were no restrictions on the nature of intervention, duration or frequency of treatment.

Control groups

Control groups included waiting list conditions and active control interventions, which in the case of bibliotherapy included reading material designed to be of a non-therapeutic nature, and also included reminiscence, educational therapy and visual imagery.

Main comparisons

Where possible, comparisons were made between:
1. Psychotherapeutic treatments versus waiting list or standard care control groups
2. Different psychotherapeutic treatment groups e.g. CBT versus psychodynamic therapy, CBT versus IPT.

Types of outcome measures

Primary outcome

The primary outcome measure used in this review was the trialists' dichotomous outcome of responded versus not responded to the treatment/control. This is determined by the number of patients in each group that have shown significant clinical improvement at the end of the trial. This was based on either a change in score of a set amount or achieving a predetermined score, at or below, a cut off point on the Hamilton Depression Rating Scale (HDRS), Clinical Global Impression (CGI) scale or other rating scale. Meta-analysis also included continuous data from these rating scales.

Secondary outcomes

Where data were available in trial articles, secondary outcomes included:
1. Patient acceptability of intervention
2. Patient attrition from trials
3. Quality of life

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SEARCH METHODS FOR IDENTIFICATION OF STUDIES

See: Cochrane Depression, Anxiety and Neurosis Group methods used in reviews.

1. Electronic searches
CCDANCTR-Studies - searched on 11/9/2006
Diagnosis = Depress* or Dysthymi* or "Adjustment Disorder*" or "Mood Disorder*" or "Affective Disorder" or "Affective Symptoms")
and
Age-Group = Aged
and
Intervention = *Therapy

CCDANCTR-References - searched on 11/9/2006
Keyword = Depress* or Dysthymi* or "Adjustment Disorder*" or "Mood Disorder*" or "Affective Disorder*" or "Affective Symptoms")
and
Free-text = Elder* or Geriatri* or Senil* or Older or "Old Age" or "Late Life" or "Aged, 80-And-Over"
and
Free-text =*therapy or intervention or counsel*

2. Hand searching
The International Journal of Geriatric Psychiatry 1986-2006
The Irish Journal of Psychiatry 1996-2006

3 Reference lists
Reference lists of previous published systematic reviews, included/excluded trial articles and bibliographies were scrutinised.

4.Personal communication
Experts in the field have been contacted for ongoing and unpublished trials.

METHODS OF THE REVIEW

Selection of studies
All review authors independently assessed (blind to the decision made by each other) the relevance of each abstract produced by the search strategy. These were categorised into relevant, not relevant and unsure. Articles of all relevant and unsure citations were retrieved. Citations were read by each review author (blind to the decision made by each other) using pre-set criteria and a recording sheet to identify those to be included in the review. In cases of disagreement, open discussion took place between all review authors and a decision was reached by consensus. Reasons for inclusion and exclusion were recorded.

Data extraction
Data were extracted from trials that met the inclusion criteria. Data included; inclusion/exclusion criteria, number screened, number suitable, total number started, method of randomisation, allocation concealment, number in each arm, intent to treat numbers, number completed in each arm, number and reasons for drop-outs, age, gender, health status, recruitment source, initial scores and standard deviation of all rating scales used (including QOL), diagnosis and criteria used, length of trial and any follow-up period, therapy type and model used, length of sessions and frequency, setting of therapy, group or individual therapy, compliance to therapy, therapists' background/qualifications, supervision, single centre/multi centre, country/ies conducting the trial. For the primary outcome, end point scores and standard deviation from all rating scales including dichotomous responded/not responded decisions (and its basis) were extracted together with secondary outcome data where available. In trials using pharmacotherapy the name of medication, dosage, frequency, side-effects, and compliance were recorded. Where data were unclear or missing, trialists were contacted.

Assessment of trial quality
Pertinent data concerning the trial design and execution were examined in terms of quality. These data included: Objective of the trial and its relationship to the design and delivery, sample size, recruitment source, randomisation techniques, allocation and concealment techniques, evidence of power analysis, reported reasons for withdrawal, clear description of treatments, definition of outcomes and related instruments, details of side effects, method of analysis, use of 'intention to treat' analysis, appropriateness of conclusion and generalisability of findings. Studies were quality assessed using the Quality Rating Scale (Moncrieff 2001), consisting of 23 items examining the quality and generalisability of trials, with each item scored from 0-2, with a maximum score of 46.

Standardisation of intervention and protocol compliance: data concerning the manualisation of psychotherapeutic intervention, evidence of monitoring standardisation of delivery and the experience and training of psychotherapists were extracted. Data were reported and discussed in the context of the results.

Data synthesis
Measures of treatment effect
Trials included a number of outcome measures, the main one being symptom levels (often measured by rating scales) presented either as continuous (means and SDs) or dichotomous outcomes (e.g. clinically significant improvement versus no clinically significant improvement). For dichotomous data, odds ratios and 95% confidence limits were calculated for each trial and a pooled estimate made using the Peto method. Continuous data were pooled by calculating the weighted mean difference (WMD) where studies used the same instruments, providing the sample size, mean and standard deviation for each group. The weight given to each study was determined by the precision of its estimate of

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effect. In the Review Manager software program this is equal to the inverse of variance. Where trials used different scales to measure outcome, the standardised mean difference (SMD) was used, with the difference between two means divided by an estimate of the within-group standard deviation.

Both the dichotomous and continuous outcomes were presented with 95% confidence intervals (CIs). These provide the range within which the 'true' value (e.g. size of effect of an intervention) is expected to lie with 95% certainty.

Where there was no evidence of statistical heterogeneity, a fixed effect model was used in the first instance to combine data. This statistical model stipulates that the units under analysis (e.g. people in a study included in a meta-analysis) are the ones of interest, and thus constitute the entire population of units. Only within-study variation is taken to influence the uncertainty of results (as reflected in the CI) of a meta-analysis using a fixed effect model. Variation between the estimates of effects from each study (heterogeneity) does not affect the CI in a fixed effect model. Where there was evidence of statistical heterogeneity, results were recalculated using a random effects model. In this statistical model both within-study sampling error (variance) and between-studies variation are included in the assessment of the uncertainty (CI) in the results of a meta-analysis. If significant heterogeneity was found among the results of the included studies, a random effects model was calculated to give wider confidence intervals than a fixed effect model.

Unit of analysis issues

Where included trials had more than two comparator groups, when possible, the psychotherapeutic treatment was compared with waiting list control group. We next prioritised comparisons between different types of psychotherapeutic treatments (eg cognitive behavioural therapy versus psychodynamic therapy). Where studies had more than one treatment group, data from one group only were used.

Dealing with missing data

Where data were missing or unclear, authors were contacted to provide information.

Assessment of heterogeneity

A formal test for statistical heterogeneity, the chi square test, was undertaken, to assess whether the observed variability in study results (effect size) was larger than expected to occur by chance.

Sensitivity analysis

As a test of the robustness of our results, sensitivity analysis was planned to assess the effects of low quality trials. The trials were assessed according to QRS scores (Moncrieff 2001). The effect of poorer quality trials (scores of <25) was assessed by seeing how the results changed when lower quality trials were removed.

Subgroup analysis and investigation of heterogeneity

Where possible, it was planned to explore clinical heterogeneity in terms of severity of depression, length of study/number of sessions and by age (under 75 versus over 75). It was also planned to examine other variables associated with the ageing process (such as physical ill health), likely to influence the outcome of trials in the context of sub-analysis. In post-hoc subgroup analyses, trials were subgrouped by the modality of intervention used, and whether the intervention was controlled against a waiting list control or active control intervention.

Publication bias

We used a funnel graph to test for publication bias.

DESCRIPTION OF STUDIES

Results of the search

Electronic searches and bibliographies generated a total 82 studies, 65 of which were excluded. A total of 12 studies met the inclusion criteria for the review (Abraham 1992b; Arean 1993; Floyd 1999; Fry 1984; Gallagher 1982a; Gallagher 1982b; Gallgr-Thompson 1994; Rokke 2000; Scogin 1987; Scogin 1989; Breckenridge 1985; Barrett 1999). Three studies (Fry 1984; Gallagher 1982b; Rokke 2000) were not included in the meta-analysis, as we were unable to obtain suitable usable data. Nine trials had data for inclusion in meta-analyses, and are described below. Three studies are still being assessed (Arean 2003; Laidlaw 2002b; Licht-Strunk 2005b) and two studies are ongoing (Meeks 2003; Walsh 2004)

Types of studies

All the trials were of parallel design and all patients were randomised to therapeutic or control conditions. Only two trials were multi-centre (Abraham 1992b; Barrett 1999) with the remaining trials all single centre.

Six trials included more than two arms. Breckenridge 1985 compared psychodynamic therapy, behavioural therapy and cognitive therapy with a waiting list control group. Abraham 1992b compared cognitive behavioural therapy, visual imagery and education. Arean 1993 compared problem solving therapy, reminiscence therapy and a waiting list control group. Barrett 1999 compared problem solving with an antidepressant and a drug placebo. Scogin 1989 compared cognitive bibliotherapy, behavioural bibliotherapy and delayed treatment control, and Gallagher 1982a compared cognitive therapy, behavioural therapy and brief relational insight therapy.

Most of the trials were small. Only one trial (Barrett 1999) had more than 40 individuals randomised to each arm of treatment, and in two trials 30 to 39 (inclusive) individuals were assigned to a treatment arm. In one of these (Abraham 1992b) the numbers assigned to different groups were 30, 29 and 17 and in the Gallgr-Thompson 1994 1994 trial, both arms had between 30-36 patients assigned to treatment. The remaining trials had fewer than 30 patients assigned to each treatment modality.

Types of participants

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Diagnoses, measurement and severity of depression

Five trials used Research Diagnostic Criteria for depression (Arean 1993; Floyd 1999; Gallgr-Thompson 1994; Breckenridge 1985). Four included those with major depressive disorder and Gallgr-Thompson 1994 also included those with minor or intermittent depression. Floyd 1999 recruited volunteers with major depression, minor depression and dysthymia. Barrett 1999 employed the Diagnostic and Statistical Manual (DSM III-R) for dysthymia or a diagnosis of minor depression derived from version IV of the DSM. In addition all these trials required a score above a cut-off on a variety of scales used in depression measurement. Arean 1993 used a score of greater than 20 on the Beck Depression Inventory (BDI) and greater than 10 on the Geriatric Depression Scale (GDS). Gallagher 1982a employed a score of greater than 14 on the Hamilton Depression Rating Scale (HDRS). Barrett 1999 used a cut-off of 10 or more on the 17 item HDRS and Gallgr-Thompson 1994 used a score of 17 or more on the BDI and 14 or more on the HDRS. Floyd 1999 employed a cut off of 10 or greater, using the HDRS. Three trials used a cut-off point on a depression rating scale without evidence of diagnostic instruments being employed. Abraham 1992b included those with a GDS score of 11 or more or with a score of 10 or more in addition to "clinical evidence of depression". Scogin 1987; Scogin 1989 utilised a cut-off point of 10 or more on the HDRS.

Recruitment source

The three trials examining the efficacy of bibliotherapy (Floyd 1999; Scogin 1987; Scogin 1989) and the Arean 1993 trial of group problem solving and reminiscence recruited volunteers from the local community. Gallagher 1982a; Breckenridge 1985 trials comparing cognitive therapies, behavioural therapies and brief dynamic therapy recruited from outpatient clinics. Abraham 1992b (comparing CBT with focused visual imagery) recruited through nursing homes and Gallgr-Thompson 1994 recruited care-giver volunteers in comparing CBT with psychodynamic therapy. The Barrett 1999 trial of problem solving compared with active antidepressant and placebo recruited patients through primary care clinics.

Comorbid disorders: exclusion criteria

All trials excluded patients with cognitive impairment, and in three trials this was defined as less than 24 on the Mini Mental State Examination (Gallgr-Thompson 1994; Breckenridge 1985; Barrett 1999). Gallgr-Thompson 1994 excluded patients with 'gross cognitive impairment'. Scogin 1989 used a cut-off of less than eight on the Mental Status Questionnaire, Abraham 1992b based exclusion on informal cognitive assessment and Scogin 1987 (examining the efficacy of bibliotherapy) gained an impression of eligibility by asking patients to read. Floyd 1999 in another trial comparing cognitive bibliotherapy and cognitive therapy and a waiting list control group excluded patents that could not read sufficiently. Other exclusion criteria included psychosis, bipolar disorder and alcoholism and substance abuse (Arean 1993; Gallagher 1982a; Gallgr-Thompson 1994; Breckenridge 1985; Barrett 1999). Severe depression (Scogin 1987) and suicidality (Gallgr-Thompson 1994; Breckenridge 1985; Barrett 1999) were also excluded. None of the trials excluded patients with physical illnesses (unless life threatening or unstable) or classed depression as 'primary' or 'secondary 'in relationship to the presence of physical illness.

Patient characteristics

Trials describing patients as elderly, geriatric, senile or older adults were included, different minimum ages are used, however all patients included in the trials were aged 55 or over as a consequence of the search strategy. One trial included patients who are 55 years of age and over (Arean 1993); one trial included those aged 59 years and over (Gallgr-Thompson 1994); four trials (Floyd 1999; Scogin 1987; Breckenridge 1985; Barrett 1999) included those who were 60 or more years old. In one trial the subjects ranged in age from a minimum of 71 years (Abraham 1992b). In five trials the mean age of participants was in the range 60-70 years (inclusive): (Arean 1993; Gallgr-Thompson 1994 1994; Scogin 1987; Scogin 1989; Breckenridge 1985) In one trial the mean age was in the range 70-80 years (Barrett 1999) and in one trial in the range 80 to 90 years (Abraham 1992b). In two trials there were patients aged 90 years of age and more (Abraham 1992b; Barrett 1999). In all trials (apart from Scogin 1989 which failed to provide data) the majority of patients were female, with usually considerably less than half being male.

Types of intervention

Psychotherapeutic treatment approaches

Despite being nonspecific with regard to type of psychotherapeutic treatment, the search strategy only identified trials of psychotherapies that could be classified as derived from psychodynamic or cognitive behavioural therapy schools, with the exception of three 'active control' comparator groups; reminiscence, visual imagery and education.

Five trials generated data that could be included within the meta-analysis of psychotherapeutic treatments compared with waiting list controls. All these trials employed experimental interventions derived from the cognitive behavioural school of psychotherapy. Arean 1993 used group-based problem solving techniques compared with a waiting list control. Breckenridge 1985 compared individual cognitive therapy, behavioural therapy and a delayed treatment control group. Floyd 1999 compared individual cognitive therapy with a waiting list control. Two trials, Scogin 1987 and Scogin 1989 compared cognitive and behavioural bibliotherapy with a non-therapeutic controlled bibliotherapy and delayed bibliotherapy.

Three trials compared cognitive behavioural therapies with psychodynamic therapies (Gallgr-Thompson 1994;Breckenridge 1985, Gallagher 1982a). Three trials, Scogin 1989 (bibliotherapy), Gallagher 1982a and Breckenridge 1985, compared cognitive and behavioural therapies. Barrett 1999 compared problem based therapy with a drug/placebo control group. Three studies compared cognitive behavioural therapy with active intervention

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control groups (Abraham 1992b; Arean 1993; Scogin 1987), and were analysed separately in a subgroup analysis. Three of the trials (Floyd 1999, Scogin 1987; Scogin 1989) examined the efficacy of bibliotherapy (cognitive or behavioural). These trials were included in the cognitive behavioural therapy group, but were also analysed separately in a subgroup analysis.

Modalities of psychotherapeutic treatment

Five trials examined individual psychotherapy. Gallagher 1982a compared behavioural therapy with cognitive therapy and brief relational/insight psychotherapy. Breckenridge 1985 subsequently compared behaviour therapy with cognitive therapy, brief psychodynamic therapy and a delayed treatment control condition. Gallgr-Thompson 1994 compared individual CBT with psychodynamic therapy. Barrett 1999 compared individual problem solving therapy against treatment with an antidepressant (paroxetine) and a tablet placebo treatment. Abraham 1992b and Arean 1993 used group therapies. Abraham 1992b compared cognitive behavioural therapy with focused visual imagery group therapy and an education-discussion control group. Arean 1993 compared group problem solving therapy with reminiscence therapy and a waiting list control group.

Bibliotherapy

Three trials used individual bibliotherapies in which individuals were given specific bibliotherapy literature. In the Scogin 1987 trial patients in the bibliotherapy and delayed bibliotherapy groups received the book 'Feeling Good' (Burns 1980), a self-help book based on cognitive therapy principles. The control group received literature recognised as an 'attention placebo'. In the second trial (Scogin 1989) one group received a self-help book relating to behavioural therapy (Control Your Depression, Lewinsohn 1986) and the cognitive bibliotherapy group received an equivalent self-help book based on cognitive therapies (Feeling good, Burns 1980). These two groups were compared against a delayed treatment group. The bibliotherapy group in Floyd 1999 trial were given the same book 'Feeling Good' (Burns 1980) compared with a waiting list control group.

Duration of treatment

Trials were classified by duration of the post randomisation phase. One trial lasted for 24 weeks (Abraham 1992b), in two trials the duration of the intervention varied. Gallgr-Thompson 1994 lasted between 12 and 20 weeks (including 16-20 therapy sessions). The Breckenridge 1985 trial lasted for 14-18 weeks (delivering between 16 and 20 therapy sessions). In two of the trials the length of the intervention was 12 weeks. Arean 1993 conducted weekly group sessions and Gallagher 1982a provided 16 individual psychotherapy sessions. The Barrett 1999 trial lasted 11 weeks and provided six sessions of individual problem solving. The Scogin 1987 and Scogin 1989 trials examining the efficacy of bibliotherapy, lasted four weeks. The Floyd 1999 trial was designed to provide a month of bibliotherapy of between 12 and 20 individual psychotherapy sessions, twice a week. Follow-up was between 12 and 16 weeks

Types of outcome measures

Primary outcome

The outcome measures were changes in scores in well established depression scales. In three trials the Schedule for Affective Disorders Change Interview (SADS-C) was used to generate a diagnosis of depression to see if patients had responded. The HDRS was the most commonly employed scale, and was used in eight of the trials; the full version was used by Arean 1993; Gallagher 1982a; Gallgr-Thompson 1994;Scogin 1987; Scogin 1989; Breckenridge 1985. The 17 item version was used by Barrett 1999 and Floyd 1999. The Geriatric Depression Scale (GDS) was used in seven trials (Abraham 1992b, Arean 1993; Floyd 1999; Gallagher 1982a; Scogin 1987; Scogin 1989; Breckenridge 1985). The BDI was used in six instances by Arean 1993; Gallagher 1982a; Gallgr-Thompson 1994; Scogin 1987; Scogin 1989; Breckenridge 1985. Other miscellaneous scales were used once by some groups: Gallgr-Thompson 1994 used the Zung Depression Scale, Barrett 1999 utilised a 20 item self-report scale consisting of the 13 item of the Hopkins Symptom checklist Depression Scale (HSCL-D-20) and seven additional depression related items, Breckenridge 1985 used the depression sub scale of the Brief Symptom Inventory.

Secondary outcomes

Most of the studies were relatively small in terms of participants. This was compounded by a significant drop-out rate. In the Gallgr-Thompson 1994 trial, nine out of 30 out of the psychodynamic arm, and five out of 33 from the cognitive behavioural arm dropped out. In the Gallgr-Thompson 1994 trial, a third of those receiving behavioural treatment dropped out (5), together with two out of 12 receiving brief rational therapy and one out of 11 receiving cognitive therapy. In Abraham 1992b, 11 out of 30 receiving cognitive behavioural therapy, 14 out of 29 receiving visual imagery therapy and nine out of 17 in the control group dropped out. In the trial by Breckenridge 1985, ten out of 27 participants dropped out of cognitive therapy, and four out of 24 dropped out of psychodynamic therapy, with none of the 19 control subjects dropping out.. In Arean 1993 trial of group therapy, nine dropped out of problem solving therapy (from 28) and seven from reminiscence therapy (from 27). Barrett 1999 trial comparing paroxetine (an antidepressant) with problem solving therapy was the largest study included in the meta-analysis. Nineteen patients dropped out of the placebo group (n=138), 31 dropped out of the problem solving treatment (n=140) and 43 dropped out of the paroxetine group (n=137). The trials involving bibliotherapy also experienced drop-outs. In the Floyd 1999 study, three of the 16 bibliotherapy arm and eight of the 16 individual cognitive therapy participants dropped out, although all 14 of the delayed treatment were available for assessment at the end of the trial. In the Scogin 1987 trial, ten participants received cognitive bibliotherapy and two dropped out, 11 received delayed cognitive bibliotherapy, from which five dropped out, and eight received control bibliotherapy, from which two dropped out. In the trial by Scogin 1989, 22 participants received cognitive bibliotherapy

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of which seven dropped out, 23 received behavioural therapy, of which nine dropped out and seven of the 22 receiving delayed treatment dropped out.

No trials reported quality of life measurements, however, Abraham 1992b did employ a dissatisfaction with life scale, which was not included in the analysis.

Ongoing studies
We are not aware of any ongoing studies that meet our criteria.

Studies awaiting assessment
Three studies are awaiting assessment and data extraction. Two of these studies are published, and include Arean 2003 (a study of CBT group therapy) and Licht-Strunk 2005b (a study of interpersonal psychotherapy). The third study (Laidlaw 2002b) has not yet been published.

METHODOLOGICAL QUALITY

Overall methodological quality of studies
Based on Quality Rating Scale (QRS) assessments (Moncrieff 2001), the nine studies included in the meta-analysis achieved QRS scores of between 17 and 30, with an overall mean score of 22.67 (SD 4.58).

Standardisation of psychotherapeutic interventions
A number of the trials used a manualised psychotherapy: Arean 1993 used an adapted version of problem-solving procedures detailed by Nazu 1989 and reminiscence therapy adapted from Matteson 1984 and Butler 1974. Gallgr-Thompson 1994 used published CBT manuals modified for working with older people (Gallagher 1981, Zeiss 1986) and psychodynamic therapy based on the work of Rose 1990. Gallagher 1981 used behavioural therapy based on Lewinsohn 1976 and brief relational insight psychotherapy derived from the work of Bellack 1965. Breckenridge 1985 used cognitive therapy based on the work of Beck 1979, behavioural therapy based on Gallagher 1981 and Lewinsohn 1974 and brief psychodynamic therapy based on Horowitz 1979. Barrett 1999 used problem solving techniques based on the work of Mynors-Wallis 1996. It is unclear whether Abraham 1992b used a manual-directed intervention.

Expertise of therapists
Abraham 1992b employed nurse specialists with experience in each psychotherapeutic intervention. Arean 1993 employed clinical psychologist graduates with specific training in the relevant interventions. Gallagher 1982a; Gallgr-Thompson 1994; Breckenridge 1985 employed senior psychologists or the equivalent with experience of working in the relevant psychotherapeutic modality. In all three trials, interventions were subjected to video monitoring and independent verification of integrity. Barrett 1999 employed seven psychologists, three social workers and two counsellors all of which had specific training in problem solving techniques, well founded in cognitive behavioural therapies. A manual was used in therapy but there was no evidence of examining the integrity of treatment. In Scogin 1987; Scogin 1989 both bibliotherapy books were independently rated, employing a categorisation of 50 key interventions based on accepted definitions. Floyd 1999 employed clinical psychology graduate students and each session was audio taped and supervised by a trained psychotherapist. Independent monitoring of sample takes was undertaken.

Adherence to therapeutic protocol
Abraham 1992b made no attempt to check the standardisation of the intervention. The therapists in Arean 1993 trial had regular supervision but no formal methods were employed to test therapeutic standardisation. Gallagher 1982a; Gallgr-Thompson 1994 and Breckenridge 1985 subjected interventions to video monitoring and independent verification of standardisation. Barrett 1999 provided no evidence of attempts to standardise the interventions.

Randomisation/allocation concealment
Arean 1993; Gallagher 1982a; Gallgr-Thompson 1994; Scogin 1987; Scogin 1989; Breckenridge 1985 all used randomisation techniques with no evidence of blinding of assessors. The first three trials mentioned employed a form of minimisation, in that the arms of the trials were balanced in terms of age (Gallagher 1982a), gender (Breckenridge 1985), severity (Gallagher 1982a; Breckenridge 1985), endogenous type (Breckenridge 1985) and duration of caring (Gallgr-Thompson 1994). Floyd 1999 used randomisation and all assessors were blind to allocation except in the case of four assessments undertaken by the main investigator, responsible for randomisation. Abraham 1992b randomised treatment conditions to seven nursing homes except in one case in which the nursing home was large enough to accommodate two treatment groups. Assessors were blind to treatments. Barrett 1999 used randomisation, all assessors were blind to treatment and concealment (by envelopes, held by non-assessor) is described.

RESULTS

1. PSYCHOTHERAPEUTIC TREATMENT VERSUS CONTROL CONDITIONS

Primary Outcome
Reduction in symptoms (Comparison 01 01 and 01 02)
Five of the seven trials that generated data (Arean 1993; Floyd 1999; Scogin 1987; Scogin 1989; Breckenridge 1985) compared therapies from the cognitive behavioural schools with waiting list controls. They employed the HDRS as a continuous outcome variable. Interventions involved cognitive therapy (Scogin 1987; Scogin 1989), cognitive bibliotherapy (Floyd 1999) and problem-solving therapy (Arean 1993). Seventy-three patients were included in the treatment group and 80 in the control group. Cognitive behavioural therapies were significantly more effective than waiting list controls (WMD -9.85, 95% CI -11.97 to -7.73). Arean

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1993 used the GDS as an outcome variable. The trial showed differences between problem solving therapy and waiting list control (WMD -4.80, 95% CI -8.32 to -1.28). However, there were only 19 patients in the treatment group and 20 patients in the control group.

Clinical response (Comparison 01 03)
Barrett 1999 (231 participants) was the only trial to use a dichotomous outcome, and failed to demonstrate improvement of problem solving therapy compared to a non-active drug placebo group (OR 0.88, 95% CI 0.52 to 1.47).

Secondary outcomes

1. Treatment acceptability
No data were available.

2. Dropout (Comparison 01 04)
Six trials contributed to this outcome (462 participants). A significant difference was shown between the CBT group and the control condition, with an OR of 0.41 (95% CI 0.24 to 0.69), however, significant heterogeneity was observed (chi-square 19.82, df=6, p=0.003).

3. Quality of life
The secondary outcome of life satisfaction index was used by Abraham 1992b. There were only 25 patients included in this trial, comparing CBT with a control group. The trial failed to show any improvement in terms of life satisfaction .

Secondary outcomes

1. Treatment acceptability
No data were available.

2. Dropout (Comparison 01 04)
Seven trials contributed to this outcome (511 participants). A significant difference was shown between the CBT group and the control condition, with an OR of 0.52 (95% CI 0.34 to 0.81), however, significant heterogeneity was observed (chi-square 19.82, df=6, p=0.003).

3. Quality of life
The secondary outcome of life satisfaction index was used by Abraham 1992b. There were only 25 patients included in this trial, comparing CBT with a control group. The trial failed to show any improvement in favour of CBT in terms of life satisfaction (Barrett 1999).

2. PSYCHOTHERAPEUTIC TREATMENT VERSUS OTHER PSYCHOTHERAPEUTIC TREATMENT

1) Cognitive behavioural therapy versus psychodynamic therapy
Three trials (Gallgr-Thompson 1994; Breckenridge 1985; Gallagher 1982a) compared cognitive behavioural therapy with psychodynamic therapy .

Primary outcome

Reduction in symptoms (Comparison 02 01 and 02 02)
Two trials (Breckenridge 1985; Gallagher 1982a, 57 participants) compared the effectiveness of CBT against psychodynamic therapy. No significant differences were found between the two therapy approaches (WMD -1.57, 95% CI -5.59 to 2.44).

Clinical response (Comparison 02 03)
One trial (Gallgr-Thompson 1994, 52 participants) generated dichotomous outcomes, and failed to show advantage for one intervention compared to the other (OR 0.48, 95% CI 0.14 to 1.60).

Secondary outcomes

1. Treatment acceptability
No data were available.

2. Dropout (Comparison 02 04)
One trial contributed to this comparison (Breckenridge 1985, 117 participants). No significant difference in dropout rates was indicated between the two types of psychotherapeutic treatment (OR 0.34, 95% CI 0.09 to 1.28).

3. Quality of life
No data were available.

2) Cognitive therapy versus behavioural therapy

Primary outcome
Reduction in symptoms (Comparison 03 01 and 03 03)
Scogin 1989, comparing cognitive and behavioural bibliotherapies and Breckenridge 1985, comparing individual cognitive therapy and behavioural therapy, involved 78 patients, and failed to demonstrate differences between these interventions in terms of continuous outcomes (HDRS) (WMD 0.63, 95% CI -4.29 to 3.04). Gallgr-Thompson 1994 was the only trial to provide data regarding other continuous measures, including the BDI and GDS.

Secondary outcomes

1. Treatment acceptability
No data were available

2. Dropout (Comparison 03 04)
Three trials contributed to this comparison (Gallagher 1982a; Scogin 1989; Breckenridge 1985). No significant difference in dropout rates was indicated between the two types of psychotherapeutic treatment (OR 0.56, 95% CI 0.23 to 1.38).

3. Quality of life
No data were available

SUB-GROUP ANALYSES

Bibliotherapy compared with waiting list control (post-hoc analysis) (Comparison 04 01 and 04 02)
We conducted a sub-analysis for the three trials that examined cognitive bibliotherapy (Floyd 1999; Scogin 1987; Scogin 1989) that examined cognitive bibliotherapy. These trials involved 45 patients in the active CBT intervention and 41 patients in either

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waiting list control or bibliotherapy control. A highly significant difference between groups was found in favour of cognitive bibliotherapy (WMD -9.29, 95% CI -11.65 to -6.93). No differences were found in dropout rates between the therapeutic intervention and control groups.

Cognitive therapy compared with active control groups (post-hoc analysis) (Comparison 05 01 to 05 03)

We conducted a sub-group analysis on three trials (Abraham 1992b; Arean 1993; Scogin 1987) comparing active control groups of reminiscence, education and non-therapeutic reading against cognitive behavioural therapy, problem solving therapy and cognitive bibliotherapy. These studies generated 46 patients receiving therapies derived from cognitive behavioural school and 34 patients receiving an active control. A significant difference between groups (2 studies, 27 treatment and 26 control patients) was found using the HDSR (WMD -5.69, 95% CI -11.04 to -0.35), however, this was not significant when using the GDS (WMD -2.00, 95% CI -5.31 to 1.32), which had more data (3 studies, 46 treatment and 34 control patients). No differences were found in dropout rates between the therapeutic treatment and active control groups.

No other a priori subgroup analyses were conducted, due to the small number of included studies.

DISCUSSION

Twelve trials were eligble for inclusion in the review, of which nine had data to contribute to meta-analyses. All trials examined cognitive behavioural or psychodynamic therapies, together with a small group of 'active control' interventions. No trials relating to other psychotherapeutic approaches and techniques were found. A total of seven trials provided sufficient data for inclusion in the comparison between cognitive behavioural therapy and controls. No trials compared psychodynamic psychotherapy with controls. Based on five trials (153 participants), cognitive behavioural therapies was more effective than controls. Only three small trials compared psychodynamic therapy with cognitive behavioural therapy, with no significant difference in treatment effect indicated between the two types of psychotherapeutic treatment.

The most obvious limitation regarding this review is the relatively few trials and small sample sizes. These issues are compounded by the varying definitions relating to nature and severity of depression. Some of the trials employed standardised diagnostic definitions, usually derived from the Diagnostic and Statistical Manual of Diseases (versions III and IV) or Research and Diagnostic Criteria (RDC). Patients with both major and minor depression and dysthymia were included. Other trials used varying cut-offs on the HDRS to define inclusion eligibility, whereas others employed cut-offs on the GDS. Care must also be taken in generalising these findings to clinical populations, as the studies examining the efficacy of bibliotherapy and the study by Arean 1993 examining problem solving therapy recruited through community volunteers. These issues significantly limit the clinical implications of our findings. The largest analysis compared cognitive behavioural therapies against waiting list controls. Seventy-four patients received psychotherapeutic intervention compared with 81 in the control group. Unfortunately, we were unable to extract continuous data from the trial with the largest number of participants (Barrett 1999) for use in meta-analyses. In this trial of 415 patients with minor depression or dysthymia, participants were randomised to one of three groups: treatment with an antidepressant, treatment with a placebo, or individual problem solving therapy. Additionally the conclusions we can draw from our analyses are also constrained by the heterogeneity of the included trials. The interventions consisted of individual cognitive therapies and problem solving therapies and included three trials using cognitive bibliotherapy (reading self help manuals) (Floyd 1999; Scogin 1987; Scogin 1989). Two of the trials (Abraham 1992b; Arean 1993) used group psychotherapy (CBT and problem solving respectively). The heterogeneity is further compounded by the diversity of control conditions that have been used. While Abraham 1992b used a fairly active, participatory intervention in the form of group education-discussion as a control, Arean 1993 employed a waiting list control group and Breckenridge 1985 employed a delayed treatment control group. Both Scogin 1987 and Scogin 1989 compared self-help reading cognitive bibliotherapy with reading a non-self help book, while Floyd 1999 compared cognitive bibliotherapy with a delayed waiting list control.

With regard to the relative efficacy of the psychotherapies derived from the cognitive behavioural school, the analysis suggests that these interventions are better than waiting list controls. However, the small size of the meta-analysis, the nature of the participants, the high dropout rate and the heterogeneity of the interventions has considerable implications with regard to generalising these findings to clinical populations. Abraham 1992b and Arean 1993 compared group cognitive behavioural therapy and group problem solving therapies with controls, using the GDS as a continuous outcome. No significant differences in outcome were found between the intervention and control conditions. Again, the small size of the analysis prevents any worthwhile conclusions to be drawn. Barrett 1999 was the only trial generating data that could be included in the analysis of dichotomous outcomes (demonstrating efficacy in terms of achieving remission by gaining an HDRS score of less than seven). This trial, which had over 100 patients in each arm, failed to demonstrate differences in outcome between an individual problem solving therapy and a tablet placebo control group.

In the next analysis we attempted to compare differing interventions, grouping all the therapies derived from psychodynamic schools and comparing them with all the therapies derived from cognitive behavioural schools. The three analyses that we un-

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dertook (continuous variables derived from the HDRS and the BDI, and the dichotomous variable of 'failed to recover' versus 'recovery') had too few numbers for any conclusions. We attempted a similar analysis comparing cognitive interventions with behavioural interventions, and again the numbers were too small for any meaningful conclusions to be derived.

We subjected all three bibliotherapy trials to a separate subgroup analysis with a view to comparing the efficacy of cognitive bibliotherapy with control conditions. These three trials all employed the same reading material as an intervention. All trials recruited patients from the community through advertisements. They included patients with major and minor depression and dysthymia, and all had an HDRS score of greater than nine. Contact with patients was controlled. The three trials generated just over 40 patients in each of the intervention and control groups. Our analysis demonstrated that bibliotherapy is significantly more effective as an intervention that the control condition. Finally, we examined the relative efficacy of cognitive behavioural therapies (including cognitive bibliotherapy) with active interventions as comparator groups, including reminiscence, education and reading non-therapeutic material. This analysis produced mixed results, suggesting that there is a difference when using the HDRS in the context of two trials (Scogin 1987, Arean 1993), but no difference when analysing three trials employing the GDS (Abraham 1992b; Arean 1993; Scogin 1987). As the numbers are small in both analyses, the results are ambiguous and the relative efficacy of these interventions remains unproven.

The relative lack of secondary outcomes provided by most of the trials is disappointing. Only the Abraham 1992b trial examined life satisfaction as an outcome in the context of comparing CBT with an education/discussion group. The trial was small (19 patients receiving treatment and eight receiving education/discussion as a control condition) and showed no significant differences between the groups.

This review clearly illustrates the relative paucity of high quality randomised controlled trials examining the efficacy of psychotherapeutic treatments in the management of older people with depression. The analysis demonstrates that cognitive behavioural treatments are relatively more efficacious than waiting list controls and active intervention comparators. However, the number of patients is very small, patient characteristics may not be representative of patients usually attending health services and there are high dropout rates. Consequently, great care and circumspection should be undertaken in generalising these findings to clinical settings

AUTHORS' CONCLUSIONS

Implications for practice

In isolation, the findings of this review have limited clinical implications because of the small number of trials and patients included in the analysis. This is exacerbated by the high dropout rate in these trials. Our main finding that cognitive-behavioural therapies are likely to be efficacious in older people when compared to waiting list controls is consistent with the findings of a larger meta-analysis undertaken across a wider age range (NICE 2004) but considerable care should be taken in generalising these findings to clinical populations. The review has highlighted the potential of bibliotherapy in treating the older person, suffering from mild depression and living in a community setting. But again, the patients included in these trials were relatively well, mobile and not representative of depressed patients attending health services.

Implications for research

In undertaking this review a comprehensive search of the literature was completed. The paucity of high quality research in this field is self-evident. There are remarkably few randomised controlled trials examining all types of psychotherapeutic intervention in this age group. Further research should focus on addressing more specific issues often confronting older depressed people. These include an examination of efficacy and modification of CBT in the context of managing older frail depressed patients, patients in nursing home or institutional environments, patients experiencing pain or suffering from visual or sensory impairment. It is also important to compare these relatively sophisticated interventions against more generalisable social interventions, especially in the context of lonely, isolated older people living in the community. Outcome measures should be broader than just scores on depression rating scales and should include assessments such as quality of life.

POTENTIAL CONFLICT OF INTEREST

None

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** Indicates the major publication for the study*

TABLES

Characteristics of included studies

Study	Abraham 1992b
Methods	RCT Duration: 24 weeks
Participants	Inclusion criteria: Depression (not specified) GDS>9 Age: 84.34 mean, SD 6.13 Gender: Not given Country: USA Setting: Nursing homes
Interventions	1. CBT 2. Focused visual imagery 3. Educational discussion
Outcomes	1. GDS 2. Life Satisfaction 3. Beck Hopelessness Scale 4. Dropout
Notes	
Allocation concealment	B – Unclear

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Characteristics of included studies (*Continued*)

Study	**Arean 1993**
Methods	RCT Duration: 12 weeks
Participants	Inclusion criteria: Major Depressive Disorder (RCD) Age: 55+ Gender: 19 male, 56 female Country: USA Setting: Community volunteers
Interventions	1. Problem solving therapy 2. Reminiscence therapy 3. Waiting list control
Outcomes	1. HDRS 2. Social Problem Solving Inventory 3. Dropout
Notes	
Allocation concealment	B – Unclear

Study	**Barrett 1999**
Methods	RCT Duration: 11 weeks (6 sessions)
Participants	Inclusion criteria: DSM IV, minor depression or dysthymia Age: 60-93 Gender: 90 male, 172 female Country: USA Setting: Primary care
Interventions	1. Problem solving therapy 2. Paroxetine 3. Placebo
Outcomes	1. HDRS(17) 2. SF-36 3. Hopkins Symptom Checklist 4. Dropout
Notes	
Allocation concealment	B – Unclear

Study	**Breckenridge 1985**
Methods	RCT Duration: 8- 10 weeks (16-20 sessions)
Participants	Inclusion criteria: Major Depressive Disorder (RDC) Age: 60+ Gender: 31 male, 64 female Country: USA Setting: Outpatient volunteers
Interventions	1. Behavioural therapy 2. Cognitive therapy 3. Brief psychotherapy 4. Waiting list control

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Characteristics of included studies (*Continued*)

Outcomes	1. HDRS 2. BDI 3. GDS 4. Brief Symptom Inventory 7. Drop out
Notes	
Allocation concealment	B – Unclear

Study	**Floyd 1999**
Methods	RCT Duration: 8-12 weeks (12-20 sessions)
Participants	Inclusion criteria: DSM IV major depressive disorder or HDRS >10 Age: 60-80 Gender: 11 male, 35 female Country: USA Setting: Volunteers (advert)
Interventions	1. Cognitive bibliotherapy 2. Individual cognitive psychotherapy 3. Delayed treatment group
Outcomes	1. HDRS 2. GDS 3. Brief Symptom Inventory 4. Dropout
Notes	
Allocation concealment	B – Unclear

Study	**Fry 1984**
Methods	RCT Duration: 5 weeks (five c 1.5 hour sessions)
Participants	Inclusion criteria: BDI - high depression subjects Age: 65-82 Gender: 66 male, 96 female Country: Canada/USA Setting: Volunteers (advert)
Interventions	1. Structured reminiscence training 2. unstructured reminiscence training 3. No-treatment control
Outcomes	1. BDI 2. Subjects' self-rating depression 3. Ego-Strength Scale 4. Dropout
Notes	mean change scores only.
Allocation concealment	B – Unclear

Study	**Gallagher 1982a**
Methods	RCT Duration: 11 weeks (6 sessions)
Participants	Inclusion criteria: Major Depressive Disorder (RCD)

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	Age: 55+ Gender: 7 males, 23 females Country: USA Setting: Referral from Regional Health Centers, private physician or self referral
Interventions	1. Behavioural therapy 2. Cognitive therapy 3. Brief relationl/Insight psychotherapy
Outcomes	1. HDRS 2. BDI 3. Zung Self Rating Scale.
Notes	
Allocation concealment	B – Unclear

Study	**Gallagher 1982b**
Methods	RCT Duration 10 weeks (ten x 1.5 hour sessions)
Participants	Inclusion criteria: Major Depressive Disorder (RCD) Age: 65+ Gender: unclear Country: USA Setting: Outpatient services & news paper articles
Interventions	1. Behavioural therapy 2. Supportive therapy
Outcomes	1. Zung Self Rating Scale 2. BDI 3. Therapist differences
Notes	SDs not available, unclear drop outs
Allocation concealment	B – Unclear

Study	**Gallgr-Thompson 1994**
Methods	RCT Duration: 12 weeks (16 sessions)
Participants	Inclusion criteria: RDC major, minor and intermitant depression Age: mean 62.0 SD 9.7 Gender: 6 male, 66 female Country: USA Setting:Caregiver volunteers
Interventions	1. CBT 2. Psychodynamic therapy
Outcomes	1. SADS-C 2. HDRS 3. Dropout
Notes	
Allocation concealment	B – Unclear

Study	**Rokke 2000**
Methods	RCT

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Characteristics of included studies (*Continued*)

	Duration: 10 weeks (10 sessions)
Participants	Inclusion criteria: DSM IV major depressive disorder or HDRS >10 Age: 60-80 Gender: 11 male, 35 female Country: USA Setting: Volunteers (advert)
Interventions	1. Self-management 2. Education and support 3. Waiting list control
Outcomes	1. HDRS 2. BDI 3. GDS
Notes	Unclear drop outs
Allocation concealment	B – Unclear

Study	**Scogin 1987**
Methods	RCT Duration: One month
Participants	Inclusion criteria: depression (not specified) Age: 60+ Gender: 6 male, 24 female Country: USA Setting: Community volunteers
Interventions	1. Cognitive bibliotherapy 2. Delayed cognitive bibliotherapy 3. Control bibliotherapy
Outcomes	1. HDRS 2. BDI 3. GDS (30) 4. CEQ 5. Dropout
Notes	
Allocation concealment	B – Unclear

Study	**Scogin 1989**
Methods	RCT Duration: 6 month follow-up
Participants	Inclusion criteria: Depression HDRS>9 Age: mean 68.3 Gender: Unclear Country: USA Setting: Community dwelling
Interventions	1. Behavioural bibliotherapy 2. Cognitive bibliotherapy 3. Delayed bibliotherapy
Outcomes	1. HDRS 2. GDS 3. Dysfunctional Attitudes Scale

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	5. Dropout
Notes	
Allocation concealment	B – Unclear

Characteristics of excluded studies

Study	Reason for exclusion
Azhar 1995	Not elderly
Bandura 1977	Not elderly
Banerjee 1996	Not psychotherapy
Bass 1996	Not depressed
Beck 1985	Not elderly
Bellack 1983	Not elderly
Beutler 1987	Psychotherapy not randomly assigned
Buller 1992	Not depressed
Churchill 2001	None of the trials within this review were in exclusively elderly patients
Collins 1997	Not depression trial
Cook 1998	Not all depressed
Copeland 1999	Not RCT
DeBerry 1982	Not depressed
DeBerry 1989	Not depressed
DeRubeis 1990	Not elderly
Dobson 1989	Not elderly
Drozdek 1997	Not elderly
Elder 1981	Not elderly
Elkin 1985	Not elderly
Fleming 1980	Not elderly
Haight 1988	Not depressed
Harp Scates 1986	Not depressed
Hebl 1993	No depression outcome
Hussian 1981	Not RCT
Ingersoll 1978	Not depressed
Jacobson 1991	Not elderly
Jacobson 1996	Critique of studies
Jarvik 1982	Not RCT
Klausner 1997	Subjects were on antidepressants
Landreville 1997	Sub analysis of a trial of depressed and non depressed
Lincoln 1996	Not elderly
Mann 1999	Service evaluation
Mossey 1996	Patients not depressed (excluded MDD, dysthymia)
Perrotta 1981	Not all depressed

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Characteristics of excluded studies (*Continued*)

Reynolds 1999	Open acute treatment - maintenence trial
Robinson 1990	Review paper not confined to elderly
Rohde 1994	Not elderly
Rothblum 1982	Study not completed
Rush 1977	Not elderly
Rush 1981	Not elderly
Russel 1987	Not elderly
Rybarczyk 1990	Not depressed
Sallis 1983	Not all depressed
Schneider 1986	Not elderly
Scogin 1994a	Review - trials extracted
Segal 1999	Not depressed
Seivewright 1998	Not elderly
Shaw 1977	Not elderly
Shefler 1995	Not elderly
Simons 1984	Not elderly
Stanley 1996	Not all depressed
Steinbrueck 1983	Meta-analysis - not elderly
Steuer 1983	Case reports
Stev-Ratchford 1993	Not depressed
Tanco 1998	Not depressed
Thase 1997	Not elderly
Treadwell 1996	Not elderly
Turner 1979	Not elderly
Tyrer 1988	Not elderly
Wang 2005a	Not all depressed
Williamson 1992	Not all depressed
Wilson 1995	Continuation study only
Wolk 1967	Mixed diagnoses
Youssef 1990	Not all depressed
Zerhusen 1995	Not RCT

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ANALYSES

Comparison 01. Cognitive behavioural therapy vs Control

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Reduction in symptoms (HDRS)	5	141	Weighted Mean Difference (Random) 95% CI	-9.85 [-11.97, -7.73]
02 Reduction in symptoms (GDS)	1	39	Weighted Mean Difference (Random) 95% CI	-4.80 [-8.32, -1.28]
03 Failed to respond	1	232	Peto Odds Ratio 95% CI	0.88 [0.52, 1.47]
04 Dropout	6	464	Peto Odds Ratio 95% CI	0.43 [0.27, 0.68]

Comparison 02. Cognitive behavioural therapy vs Psychodynamic therapy

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Reduction in symptoms (HDRS)	2	57	Weighted Mean Difference (Random) 95% CI	-1.57 [-5.59, 2.44]
02 Reduction in symptoms (BDI)	2	57	Weighted Mean Difference (Random) 95% CI	-2.28 [-11.14, 6.57]
03 Failed to respond	1	52	Peto Odds Ratio 95% CI	0.48 [0.14, 1.60]
04 Dropout	2	117	Peto Odds Ratio 95% CI	1.01 [0.43, 2.35]

Comparison 03. Cognitive therapy vs Behavioural therapy

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Reduction in symptoms (HDRS)	2	67	Weighted Mean Difference (Random) 95% CI	-0.63 [-4.29, 3.04]
03 Reduction in symptoms (BDI)	1	20	Weighted Mean Difference (Random) 95% CI	-3.01 [-11.24, 5.22]
04 Dropout	3	123	Peto Odds Ratio 95% CI	0.58 [0.27, 1.27]

Comparison 04. Cognitive bibliotherapy vs Control

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Reduction in symptoms (HDRS)	3	73	Weighted Mean Difference (Random) 95% CI	-9.29 [-11.65, -6.93]
02 Dropout	3	92	Peto Odds Ratio 95% CI	0.85 [0.32, 2.24]

Comparison 05. Cognitive behavioural therapy vs Active control

Outcome title	No. of studies	No. of participants	Statistical method	Effect size
01 Reduction in symptoms (HDRS)	2	53	Weighted Mean Difference (Random) 95% CI	-5.69 [-11.04, -0.35]
02 Reduction in symptoms (GDS)	3	80	Weighted Mean Difference (Random) 95% CI	0.00 [-5.31, 1.32]
03 Dropout	3	120	Peto Odds Ratio 95% CI	1.19 [0.55, 2.59]

COVER SHEET

Title Psychotherapeutic treatments for older depressed people

Authors Wilson KCM, Mottram PG, Vassilas CA

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Contribution of author(s)	KW reviewed papers, extracted data and was the main author PW reviewed papers, extracted data, conducted analysis and co-authored CV reviewed papers, extracted data and co-authored
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Date of most recent amendment	13 November 2007
Date of most recent SUBSTANTIVE amendment	05 November 2007
What's New	Information not supplied by author
Date new studies sought but none found	Information not supplied by author
Date new studies found but not yet included/excluded	Information not supplied by author
Date new studies found and included/excluded	11 September 2006
Date authors' conclusions section amended	Information not supplied by author
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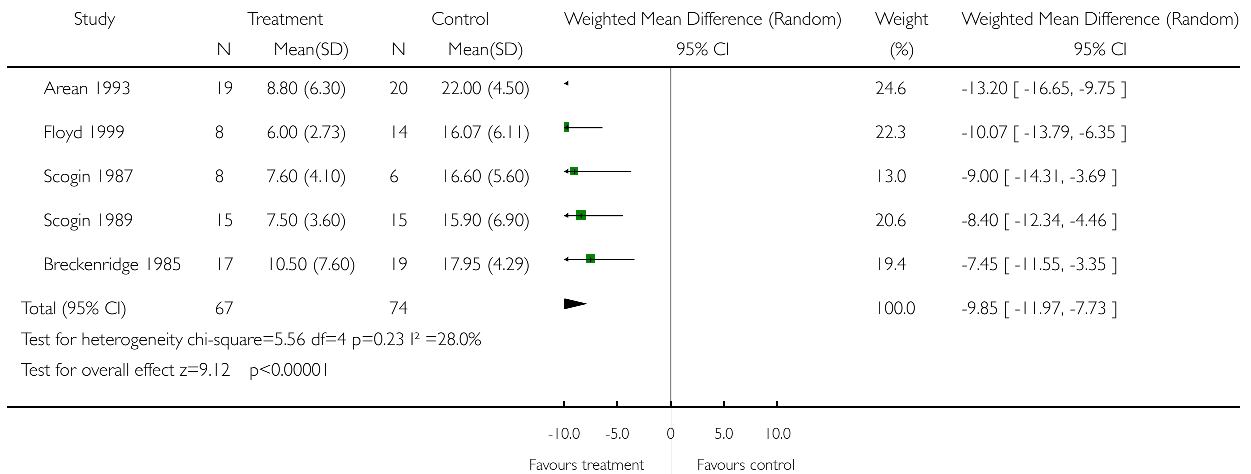
GRAPHS AND OTHER TABLES

Analysis 01.01. Comparison 01 Cognitive behavioural therapy vs Control, Outcome 01 Reduction in symptoms (HDRS)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 01 Cognitive behavioural therapy vs Control

Outcome: 01 Reduction in symptoms (HDRS)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Arean 1993	19	8.80 (6.30)	20	22.00 (4.50)		24.6	-13.20 [-16.65, -9.75]
Floyd 1999	8	6.00 (2.73)	14	16.07 (6.11)		22.3	-10.07 [-13.79, -6.35]
Scogin 1987	8	7.60 (4.10)	6	16.60 (5.60)		13.0	-9.00 [-14.31, -3.69]
Scogin 1989	15	7.50 (3.60)	15	15.90 (6.90)		20.6	-8.40 [-12.34, -4.46]
Breckenridge 1985	17	10.50 (7.60)	19	17.95 (4.29)		19.4	-7.45 [-11.55, -3.35]
Total (95% CI)	67		74			100.0	-9.85 [-11.97, -7.73]

Test for heterogeneity chi-square=5.56 df=4 p=0.23 I² =28.0%

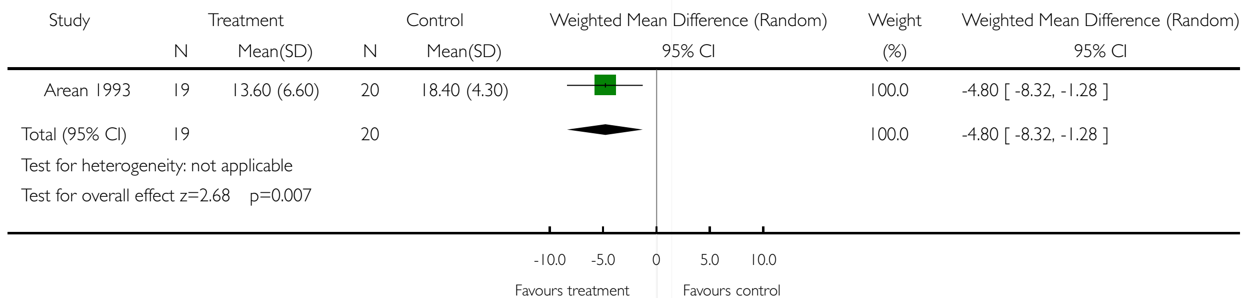
Test for overall effect z=9.12 p<0.00001

Analysis 01.02. Comparison 01 Cognitive behavioural therapy vs Control, Outcome 02 Reduction in symptoms (GDS)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 01 Cognitive behavioural therapy vs Control

Outcome: 02 Reduction in symptoms (GDS)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Arean 1993	19	13.60 (6.60)	20	18.40 (4.30)		100.0	-4.80 [-8.32, -1.28]
Total (95% CI)	19		20			100.0	-4.80 [-8.32, -1.28]

Test for heterogeneity: not applicable

Test for overall effect z=2.68 p=0.007

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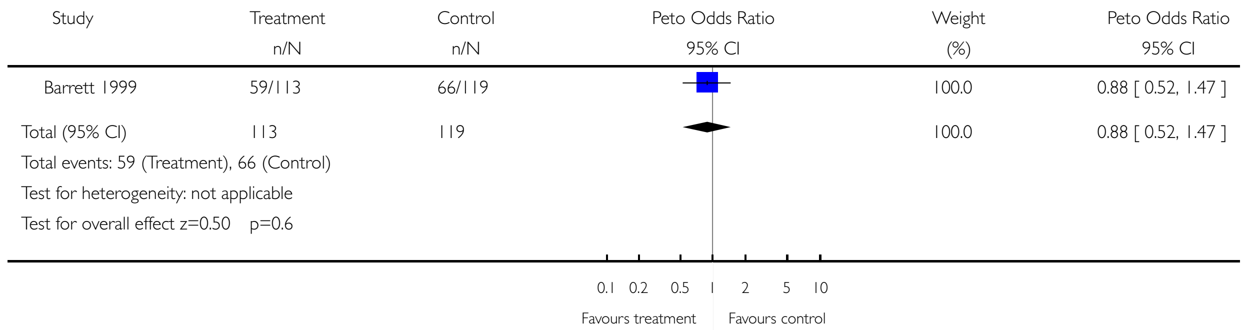
Analysis 01.03. Comparison 01 Cognitive behavioural therapy vs Control, Outcome 03 Failed to respond

Review: Psychotherapeutic treatments for older depressed people

Comparison: 01 Cognitive behavioural therapy vs Control

Outcome: 03 Failed to respond



Study	Treatment n/N	Control n/N	Peto Odds Ratio 95% CI	Weight (%)	Peto Odds Ratio 95% CI
Barrett 1999	59/113	66/119		100.0	0.88 [0.52, 1.47]
Total (95% CI)	113	119		100.0	0.88 [0.52, 1.47]

Total events: 59 (Treatment), 66 (Control)

Test for heterogeneity: not applicable

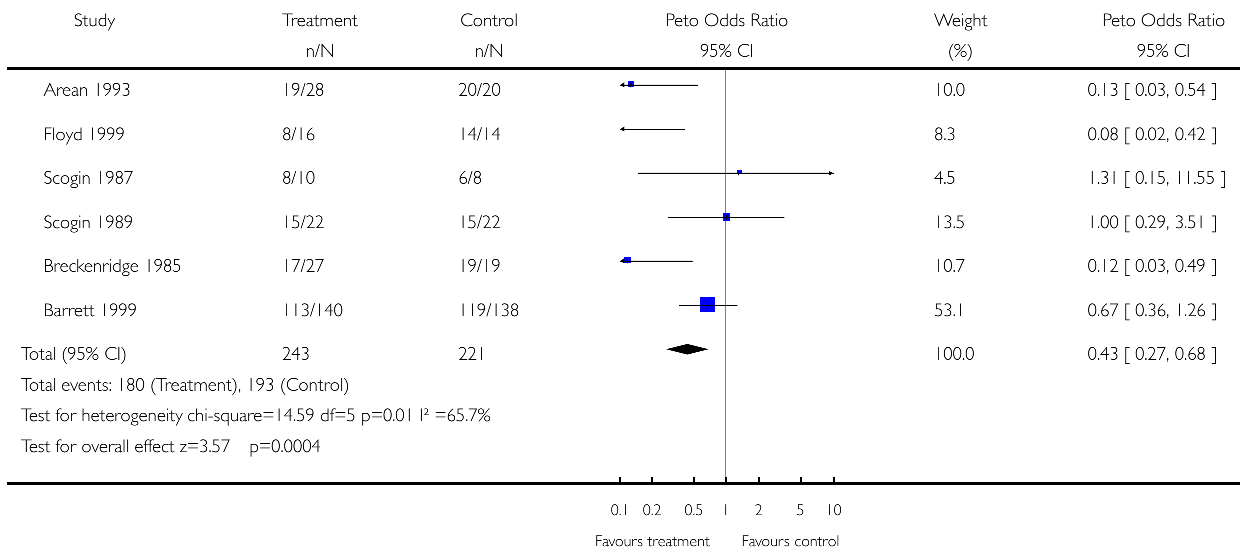
Test for overall effect z=0.50 p=0.6

Analysis 01.04. Comparison 01 Cognitive behavioural therapy vs Control, Outcome 04 Dropout

Review: Psychotherapeutic treatments for older depressed people

Comparison: 01 Cognitive behavioural therapy vs Control

Outcome: 04 Dropout



Study	Treatment n/N	Control n/N	Peto Odds Ratio 95% CI	Weight (%)	Peto Odds Ratio 95% CI
Arean 1993	19/28	20/20		10.0	0.13 [0.03, 0.54]
Floyd 1999	8/16	14/14		8.3	0.08 [0.02, 0.42]
Scogin 1987	8/10	6/8		4.5	1.31 [0.15, 11.55]
Scogin 1989	15/22	15/22		13.5	1.00 [0.29, 3.51]
Breckenridge 1985	17/27	19/19		10.7	0.12 [0.03, 0.49]
Barrett 1999	113/140	119/138		53.1	0.67 [0.36, 1.26]
Total (95% CI)	243	221		100.0	0.43 [0.27, 0.68]

Total events: 180 (Treatment), 193 (Control)

Test for heterogeneity chi-square=14.59 df=5 p=0.01 I^2 =65.7%

Test for overall effect z=3.57 p=0.0004

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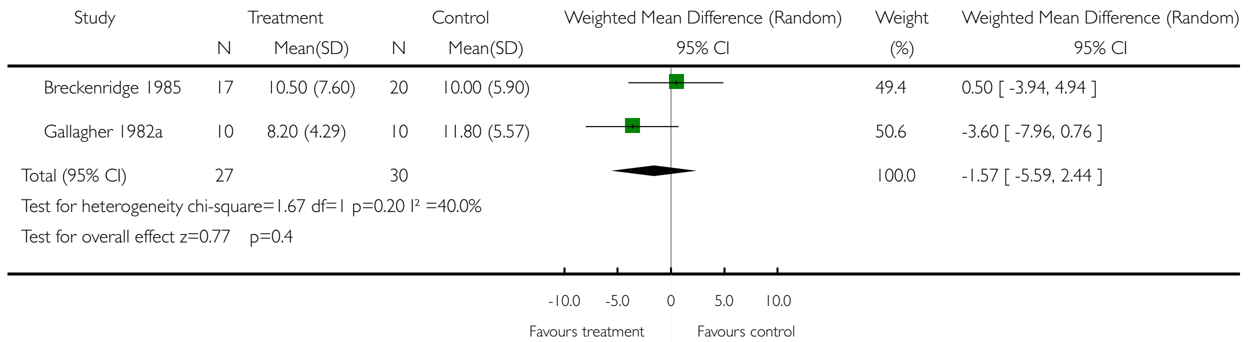
Analysis 02.01. Comparison 02 Cognitive behavioural therapy vs Psychodynamic therapy, Outcome 01 Reduction in symptoms (HDRS)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 02 Cognitive behavioural therapy vs Psychodynamic therapy

Outcome: 01 Reduction in symptoms (HDRS)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Breckenridge 1985	17	10.50 (7.60)	20	10.00 (5.90)		49.4	0.50 [-3.94, 4.94]
Gallagher 1982a	10	8.20 (4.29)	10	11.80 (5.57)		50.6	-3.60 [-7.96, 0.76]
Total (95% CI)	27		30			100.0	-1.57 [-5.59, 2.44]

Test for heterogeneity chi-square=1.67 df=1 p=0.20 I² =40.0%

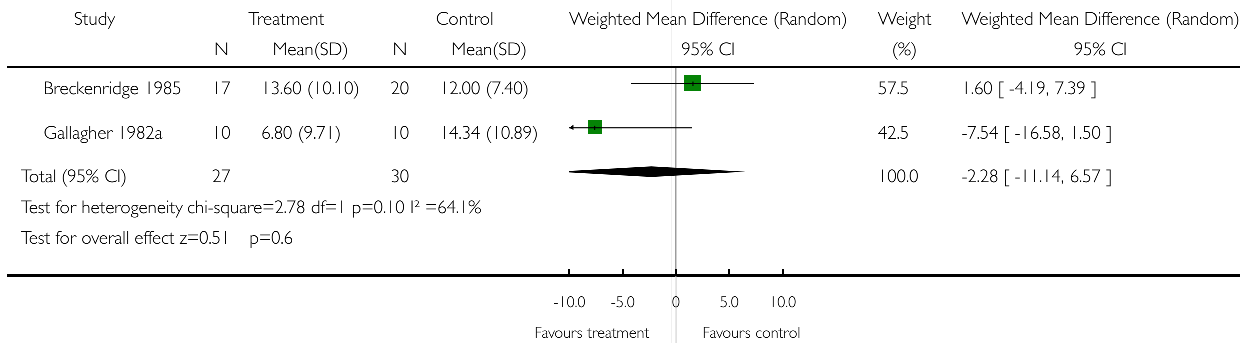
Test for overall effect z=0.77 p=0.4

Analysis 02.02. Comparison 02 Cognitive behavioural therapy vs Psychodynamic therapy, Outcome 02 Reduction in symptoms (BDI)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 02 Cognitive behavioural therapy vs Psychodynamic therapy

Outcome: 02 Reduction in symptoms (BDI)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Breckenridge 1985	17	13.60 (10.10)	20	12.00 (7.40)		57.5	1.60 [-4.19, 7.39]
Gallagher 1982a	10	6.80 (9.71)	10	14.34 (10.89)		42.5	-7.54 [-16.58, 1.50]
Total (95% CI)	27		30			100.0	-2.28 [-11.14, 6.57]

Test for heterogeneity chi-square=2.78 df=1 p=0.10 I² =64.1%

Test for overall effect z=0.51 p=0.6

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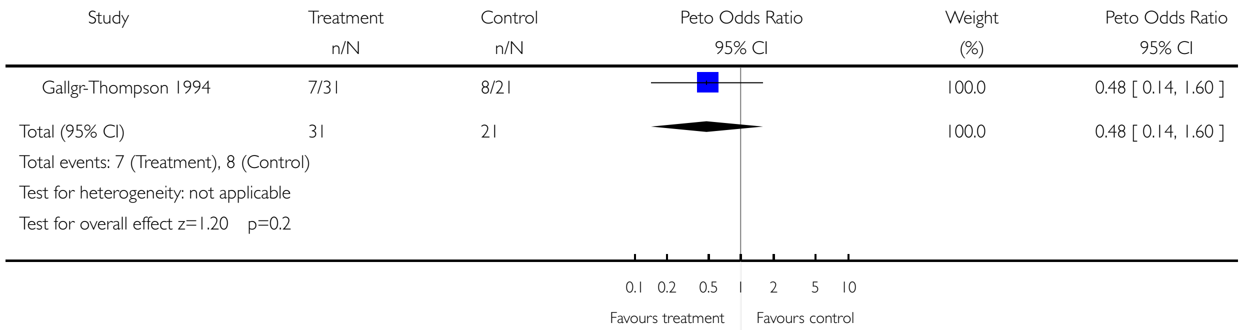
Analysis 02.03. Comparison 02 Cognitive behavioural therapy vs Psychodynamic therapy, Outcome 03 Failed to respond

Review: Psychotherapeutic treatments for older depressed people

Comparison: 02 Cognitive behavioural therapy vs Psychodynamic therapy

Outcome: 03 Failed to respond



Study	Treatment n/N	Control n/N	Peto Odds Ratio 95% CI	Weight (%)	Peto Odds Ratio 95% CI
Gallgr-Thompson 1994	7/31	8/21		100.0	0.48 [0.14, 1.60]
Total (95% CI)	31	21		100.0	0.48 [0.14, 1.60]

Total events: 7 (Treatment), 8 (Control)

Test for heterogeneity: not applicable

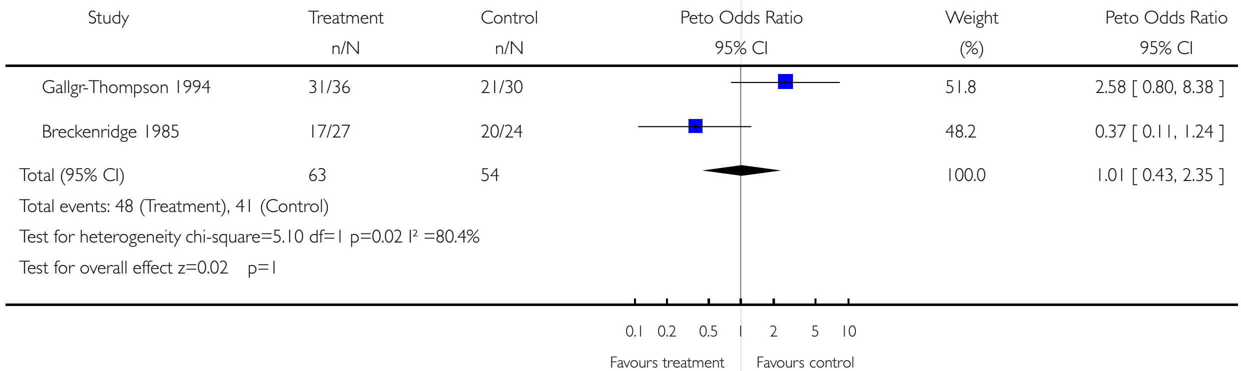
Test for overall effect z=1.20 p=0.2

Analysis 02.04. Comparison 02 Cognitive behavioural therapy vs Psychodynamic therapy, Outcome 04 Dropout

Review: Psychotherapeutic treatments for older depressed people

Comparison: 02 Cognitive behavioural therapy vs Psychodynamic therapy

Outcome: 04 Dropout



Study	Treatment n/N	Control n/N	Peto Odds Ratio 95% CI	Weight (%)	Peto Odds Ratio 95% CI
Gallgr-Thompson 1994	31/36	21/30		51.8	2.58 [0.80, 8.38]
Breckenridge 1985	17/27	20/24		48.2	0.37 [0.11, 1.24]
Total (95% CI)	63	54		100.0	1.01 [0.43, 2.35]

Total events: 48 (Treatment), 41 (Control)

Test for heterogeneity chi-square=5.10 df=1 p=0.02 I^2 =80.4%

Test for overall effect z=0.02 p=1

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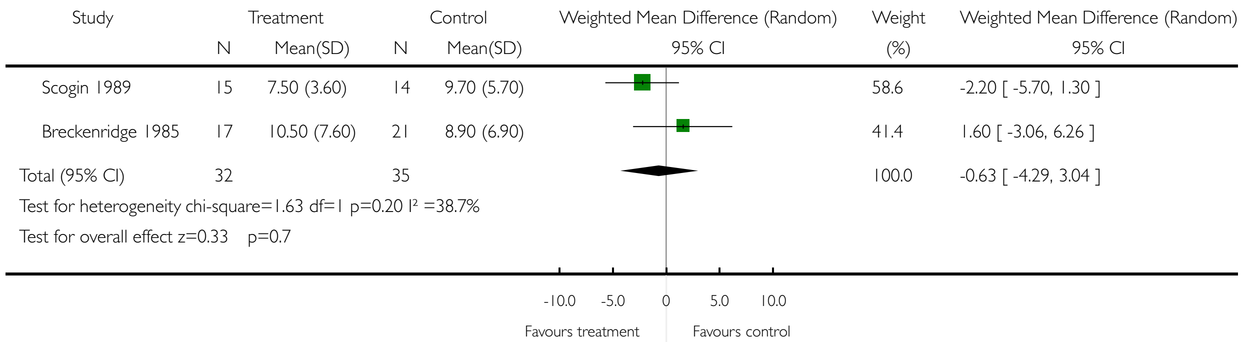
Analysis 03.01. Comparison 03 Cognitive therapy vs Behavioural therapy, Outcome 01 Reduction in symptoms (HDRS)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 03 Cognitive therapy vs Behavioural therapy

Outcome: 01 Reduction in symptoms (HDRS)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Scogin 1989	15	7.50 (3.60)	14	9.70 (5.70)		58.6	-2.20 [-5.70, 1.30]
Breckenridge 1985	17	10.50 (7.60)	21	8.90 (6.90)		41.4	1.60 [-3.06, 6.26]
Total (95% CI)	32		35			100.0	-0.63 [-4.29, 3.04]

Test for heterogeneity chi-square=1.63 df=1 p=0.20 I² =38.7%

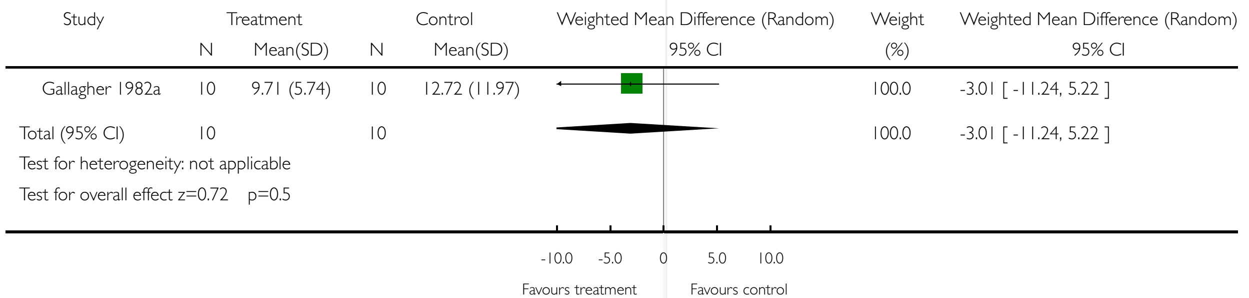
Test for overall effect z=0.33 p=0.7

Analysis 03.03. Comparison 03 Cognitive therapy vs Behavioural therapy, Outcome 03 Reduction in symptoms (BDI)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 03 Cognitive therapy vs Behavioural therapy

Outcome: 03 Reduction in symptoms (BDI)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Gallagher 1982a	10	9.71 (5.74)	10	12.72 (11.97)		100.0	-3.01 [-11.24, 5.22]
Total (95% CI)	10		10			100.0	-3.01 [-11.24, 5.22]

Test for heterogeneity: not applicable

Test for overall effect z=0.72 p=0.5

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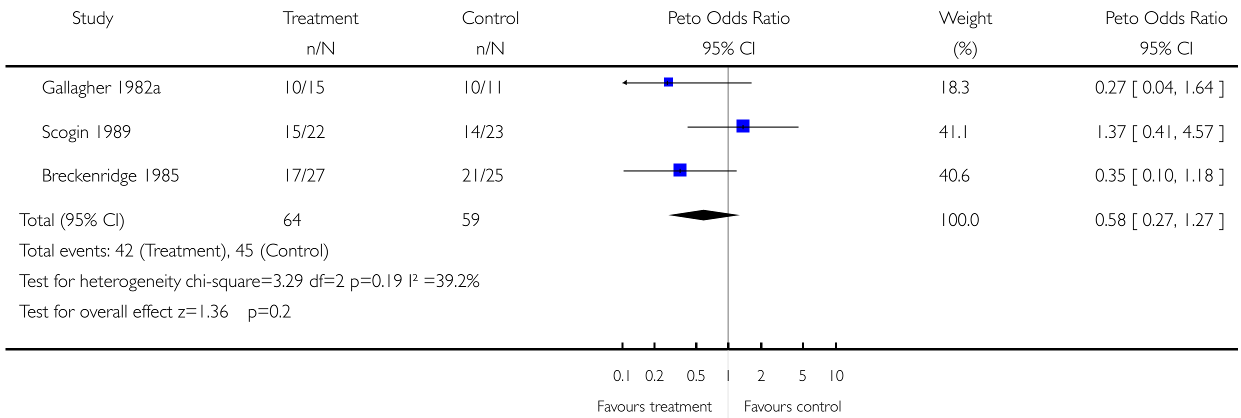
Analysis 03.04. Comparison 03 Cognitive therapy vs Behavioural therapy, Outcome 04 Dropout

Review: Psychotherapeutic treatments for older depressed people

Comparison: 03 Cognitive therapy vs Behavioural therapy

Outcome: 04 Dropout



Study	Treatment n/N	Control n/N	Peto Odds Ratio 95% CI	Weight (%)	Peto Odds Ratio 95% CI
Gallagher 1982a	10/15	10/11		18.3	0.27 [0.04, 1.64]
Scogin 1989	15/22	14/23		41.1	1.37 [0.41, 4.57]
Breckenridge 1985	17/27	21/25		40.6	0.35 [0.10, 1.18]
Total (95% CI)	64	59		100.0	0.58 [0.27, 1.27]

Total events: 42 (Treatment), 45 (Control)

Test for heterogeneity chi-square=3.29 df=2 p=0.19 I² =39.2%

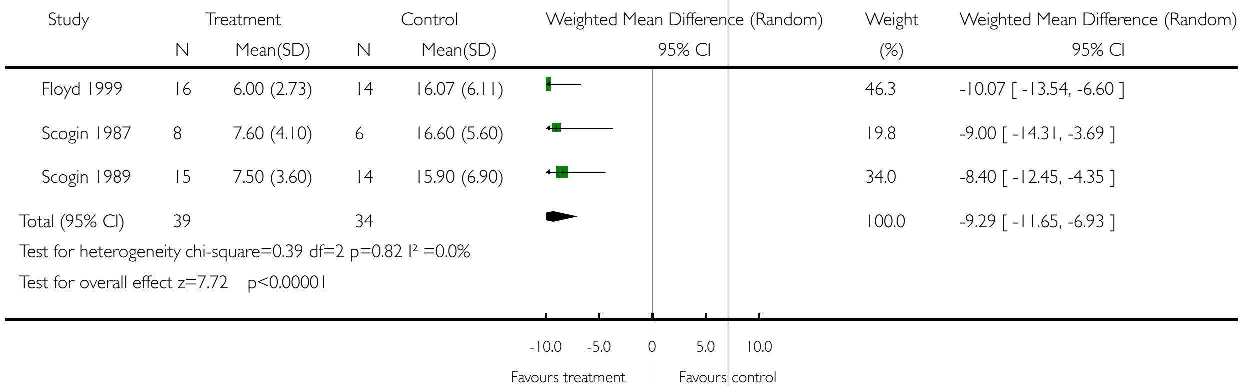
Test for overall effect z=1.36 p=0.2

Analysis 04.01. Comparison 04 Cognitive bibliotherapy vs Control, Outcome 01 Reduction in symptoms (HDRS)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 04 Cognitive bibliotherapy vs Control

Outcome: 01 Reduction in symptoms (HDRS)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Floyd 1999	16	6.00 (2.73)	14	16.07 (6.11)		46.3	-10.07 [-13.54, -6.60]
Scogin 1987	8	7.60 (4.10)	6	16.60 (5.60)		19.8	-9.00 [-14.31, -3.69]
Scogin 1989	15	7.50 (3.60)	14	15.90 (6.90)		34.0	-8.40 [-12.45, -4.35]
Total (95% CI)	39		34			100.0	-9.29 [-11.65, -6.93]

Test for heterogeneity chi-square=0.39 df=2 p=0.82 I² =0.0%

Test for overall effect z=7.72 p<0.00001

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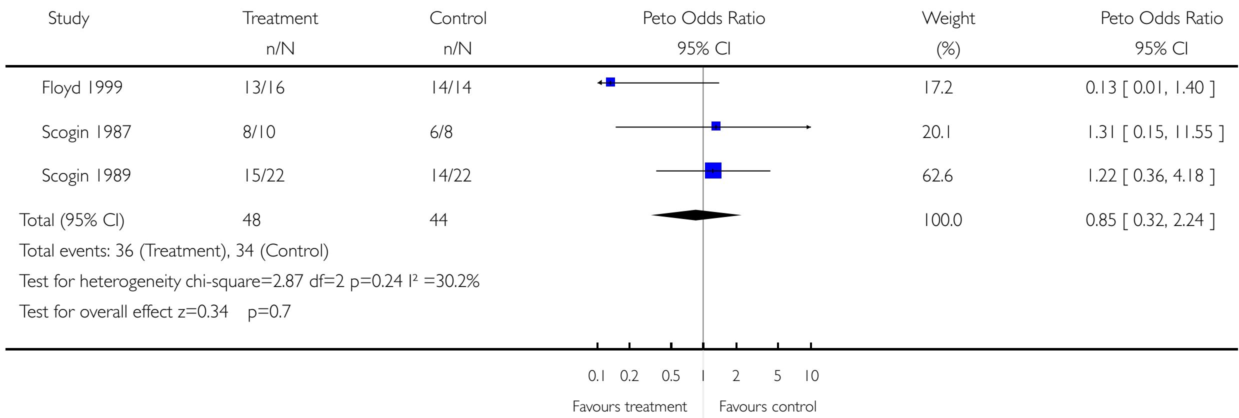
Analysis 04.02. Comparison 04 Cognitive bibliotherapy vs Control, Outcome 02 Dropout

Review: Psychotherapeutic treatments for older depressed people

Comparison: 04 Cognitive bibliotherapy vs Control

Outcome: 02 Dropout



Study	Treatment n/N	Control n/N	Peto Odds Ratio 95% CI	Weight (%)	Peto Odds Ratio 95% CI
Floyd 1999	13/16	14/14		17.2	0.13 [0.01, 1.40]
Scogin 1987	8/10	6/8		20.1	1.31 [0.15, 11.55]
Scogin 1989	15/22	14/22		62.6	1.22 [0.36, 4.18]
Total (95% CI)	48	44		100.0	0.85 [0.32, 2.24]

Total events: 36 (Treatment), 34 (Control)

Test for heterogeneity chi-square=2.87 df=2 p=0.24 I² =30.2%

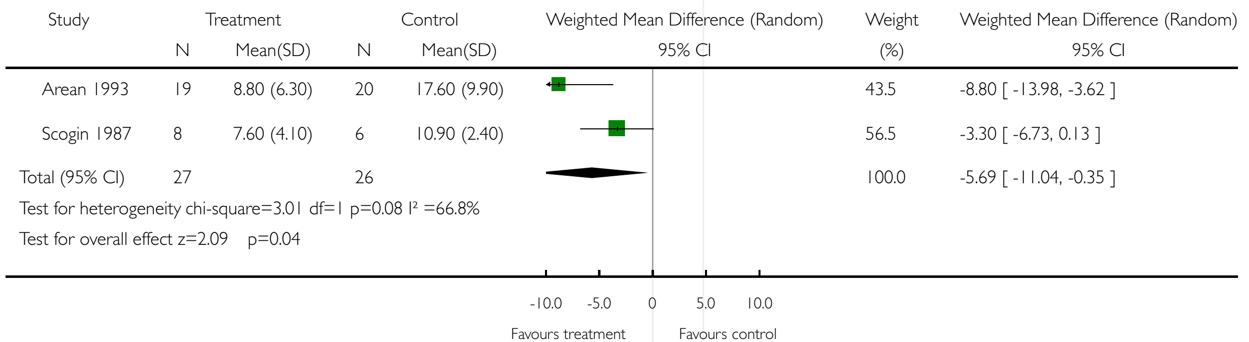
Test for overall effect z=0.34 p=0.7

Analysis 05.01. Comparison 05 Cognitive behavioural therapy vs Active control, Outcome 01 Reduction in symptoms (HDRS)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 05 Cognitive behavioural therapy vs Active control

Outcome: 01 Reduction in symptoms (HDRS)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Arean 1993	19	8.80 (6.30)	20	17.60 (9.90)		43.5	-8.80 [-13.98, -3.62]
Scogin 1987	8	7.60 (4.10)	6	10.90 (2.40)		56.5	-3.30 [-6.73, 0.13]
Total (95% CI)	27		26			100.0	-5.69 [-11.04, -0.35]

Test for heterogeneity chi-square=3.01 df=1 p=0.08 I² =66.8%

Test for overall effect z=2.09 p=0.04

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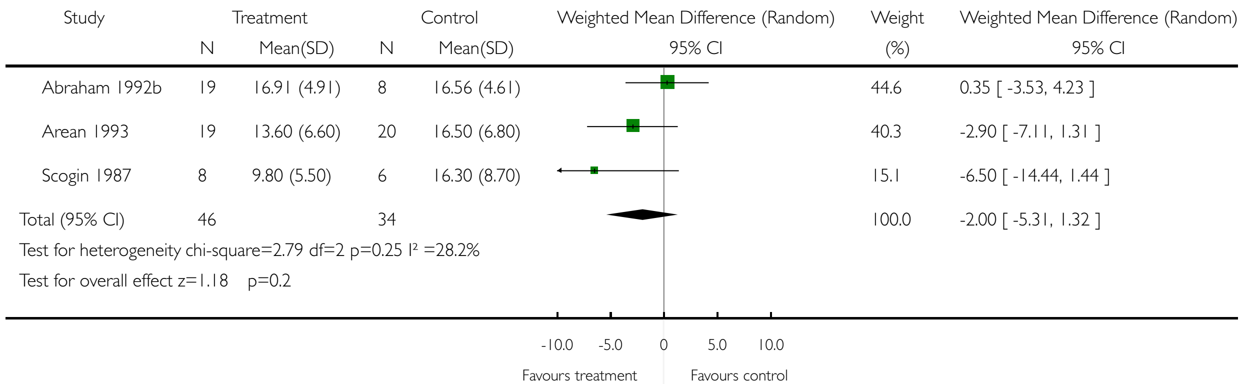
Analysis 05.02. Comparison 05 Cognitive behavioural therapy vs Active control, Outcome 02 Reduction in symptoms (GDS)

Review: Psychotherapeutic treatments for older depressed people

Comparison: 05 Cognitive behavioural therapy vs Active control

Outcome: 02 Reduction in symptoms (GDS)



Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Weighted Mean Difference (Random) 95% CI	Weight (%)	Weighted Mean Difference (Random) 95% CI
Abraham 1992b	19	16.91 (4.91)	8	16.56 (4.61)		44.6	0.35 [-3.53, 4.23]
Arean 1993	19	13.60 (6.60)	20	16.50 (6.80)		40.3	-2.90 [-7.11, 1.31]
Scogin 1987	8	9.80 (5.50)	6	16.30 (8.70)		15.1	-6.50 [-14.44, 1.44]
Total (95% CI)	46		34			100.0	-2.00 [-5.31, 1.32]

Test for heterogeneity chi-square=2.79 df=2 p=0.25 I² =28.2%

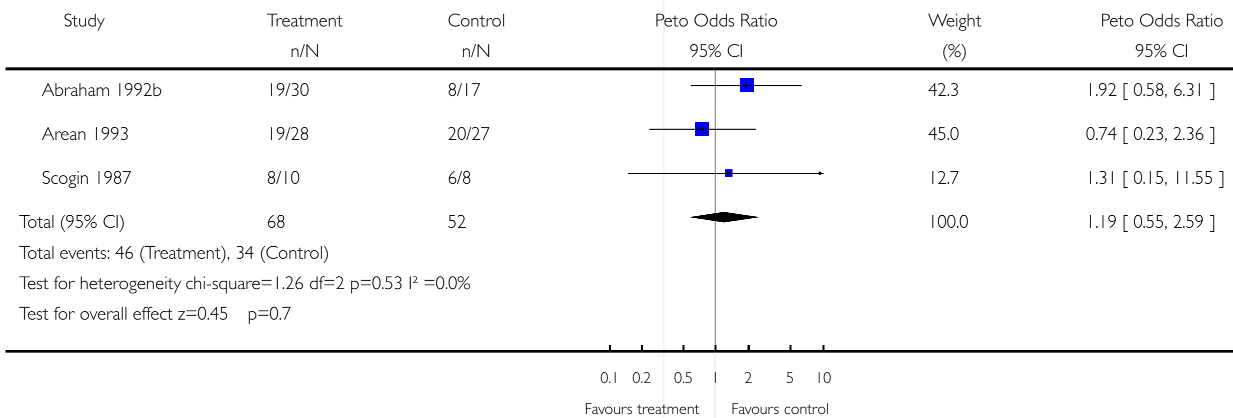
Test for overall effect z=1.18 p=0.2

Analysis 05.03. Comparison 05 Cognitive behavioural therapy vs Active control, Outcome 03 Dropout

Review: Psychotherapeutic treatments for older depressed people

Comparison: 05 Cognitive behavioural therapy vs Active control

Outcome: 03 Dropout



Study	Treatment n/N	Control n/N	Peto Odds Ratio 95% CI	Weight (%)	Peto Odds Ratio 95% CI
Abraham 1992b	19/30	8/17		42.3	1.92 [0.58, 6.31]
Arean 1993	19/28	20/27		45.0	0.74 [0.23, 2.36]
Scogin 1987	8/10	6/8		12.7	1.31 [0.15, 11.55]
Total (95% CI)	68	52		100.0	1.19 [0.55, 2.59]

Total events: 46 (Treatment), 34 (Control)

Test for heterogeneity chi-square=1.26 df=2 p=0.53 I² =0.0%

Test for overall effect z=0.45 p=0.7

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