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On-site mental health workers delivering psychological therapy and psychosocial interventions to patients in primary care: effects on the professional practice of primary care providers (Review)

Harkness EF, Bower PJ

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[Intervention Review]

On-site mental health workers delivering psychological therapy and psychosocial interventions to patients in primary care: effects on the professional practice of primary care providers

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ABSTRACT

Background

Mental health problems are common in primary care and mental health workers (MHWs) are increasingly working in this setting delivering psychological therapy and psychosocial interventions to patients. In addition to treating patients directly, the introduction of on-site MHWs represents an organisational change that may lead to changes in the clinical behaviour of primary care providers (PCPs).

Objectives

To assess the effects of on-site MHWs delivering psychological therapy and psychosocial interventions in primary care on the clinical behaviour of primary care providers (PCPs).

Search methods

The following sources were searched in 1998: the Cochrane Effective Practice and Organisation of Care Group Specialised Register, the Cochrane Controlled Trials Register, MEDLINE, EMBASE, PsycINFO, CounselLit, NPCRDC skill-mix in primary care bibliography, and reference lists of articles. Additional searches were conducted in February 2007 using the following sources: MEDLINE, EMBASE, PsycINFO, CINAHL, and Cochrane Central Register of Clinical Trials (CENTRAL) (*The Cochrane Library)*.

Selection criteria

Randomised trials, controlled before and after studies, and interrupted time series analyses of MHWs working alongside PCPs in primary care settings. The outcomes included objective measures of PCP behaviours such as consultation rates, prescribing, and referral.

Data collection and analysis

Two review authors independently extracted data and assessed study quality.

Main results

Forty-two studies were included in the review. There was evidence that MHWs caused significant reductions in PCP consultations (standardised mean difference -0.17, 95% CI -0.30 to -0.05), psychotropic prescribing (relative risk 0.67, 95% CI 0.56 to 0.79), prescribing costs (standardised mean difference -0.22, 95% CI -0.38 to -0.07), and rates of mental health referral (relative risk 0.13, 95% CI 0.09 to 0.20) for the patients they were seeing. In controlled before and after studies, the addition of MHWs to a practice did not affect prescribing behaviour towards the wider practice population and there was no consistent pattern to the impact on referrals in the wider patient population.

Authors' conclusions

This review provides some evidence that MHWs working in primary care to deliver psychological therapy and psychosocial interventions cause a significant reduction in PCP behaviours such as consultations, prescribing, and referrals to specialist care. However, the changes are modest in magnitude, inconsistent, do not generalise to the wider patient population, and their clinical or economic significance is unclear.

PLAIN LANGUAGE SUMMARY

On-site mental health workers delivering psychological therapy and psychosocial interventions to patients in primary care: effects on the professional practice of primary care providers

Most people with mental health problems are treated by their family physician or general practitioner. Physicians will treat these problems, often without referral to mental health specialists, and at times the care is not consistent and could be improved.

This review investigated whether having mental health workers on-site to work with physicians at their offices would change the care that physicians provide. Forty-two studies were reviewed in which on-site mental health workers, such as counsellors or psychiatrists, worked alongside physicians to provide therapy to patients. The review found that when there were mental health workers on-site, patients may reduce the number of visits to their doctors; doctors may reduce how often they refer patients to off-site mental health specialists; doctors may reduce the number of drugs they prescribe to the patients who see the mental health workers; and the costs related to those drugs may be lower. However, these reductions were small and not found consistently in all the studies.

The review also found that there may be little or no difference in how the doctors prescribe drugs or refer patients who have mental health problems but are not seeing the on-site mental health workers. It is also not known what the effect of on-site mental health workers had on how well physicians recognised and diagnosed mental health problems.

BACKGROUND

In most healthcare systems primary care providers (PCPs) act as 'gatekeepers' to care in specialist settings (WHO 2001). Research indicates that the vast bulk of mental health problems in the community are dealt with by PCPs without referral to mental health specialists; and there is also evidence that the care provided by PCPs is variable, with significant room for improvement (Gilbody 2003; Goldberg 1992).

In response, mental health workers (MHWs) from a variety of disciplines are increasingly bringing their specialist skills into primary care to provide a range of interventions to patients, including psychological therapy and psychosocial interventions (Sibbald 1993). In addition to their role in treatment provision, the addition of an on-site MHW represents an organisational change which may lead to changes in professional roles, the alteration of established clinical routines, and improvements in the clinical practice of PCPs.

There are a number of different models of the interface between MHWs and PCPs (Bower 2005; Gask 1997; Pincus 1987). The mechanisms of change by which MHWs may change PCP behaviour range from specific education and skill sharing between professionals to more diffuse processes, such as raising the profile of mental health in the primary care setting. Some models are organised such that the PCP refers the patient to the MHW, who assumes responsibility for the management of the patient's mental health problem by providing psychological therapy and psychosocial interventions. This way of working has been described as a 'replacement' model (Bower 2005). In this model, the main focus of interest concerns the effects of the direct provision of psychological therapy and psychosocial interventions on patient outcomes. Any changes in the behaviour of the PCP are viewed as a beneficial 'side effect' of the direct treatment function of the MHW. Nevertheless, these 'side effects' may have a beneficial impact on the overall costs of mental health care and the workload of PCPs. For example, referral of patients to on-site MHWs operating in a replacement model may reduce both consultation rates with the PCP (thus freeing up clinical time for other duties) and prescribing of psychotropic medication (thus reducing the overall costs of care). The costs of employing on-site MHWs in a replacement model is sometimes hypothesised to be recouped from the savings associated with these changes. Medical utilisation may decrease as a result of the MHW intervention if the psychological therapy or psychosocial intervention leads to changes in patients' mental health, social function, or need for care. This is referred to as a 'cost offset' (Fiedler 1989) and has been a significant feature of the literature on psychological therapies both generally and in primary care following the introduction of large numbers of MHWs in this setting (Martin 1985; Mumford 1984; Pharoah 1996). Cost offset reflects an economic perspective on service delivery since the focus is on reduction in health service utilisation, rather than quality of care or patient outcomes.

In other models, the PCP remains at the forefront of mental health care. In this case the main aim of the MHW is to support the PCP's management of the patient's mental health problem through education, advice, and support to the PCP (although the MHW may, in addition, provide some direct intervention to patients). These models have been described as 'consultation-liasion' or 'collaborative care' (Bower 2005). Although MHWs and PCPs in a replacement model will interact and collaborate in informal ways (through common medical records, opportunities to discuss potential referrals, or informal discussions about patients), such interactions are explicit and standardised in consultation-liaison and collaborative care. Because such models explicitly seek to change the clinical behaviour of PCPs, they are generally much more complex interventions involving behaviour change interventions with the PCP (Bower 2002). The effects of these models are the subject of separate future reviews (Fletcher 2007; Parker 2008).

This review sought to determine the effects of a replacement model by systematically reviewing evidence on the influence of MHWs on the clinical practice of PCPs. On-site MHWs functioning in a replacement model potentially have two different effects on the behaviour of the PCP. Direct effects involve changes in PCP behaviour towards clients under the direct clinical care of the on-site MHW. For example, does referring a patient to a clinical psychologist for psychological therapy change the likelihood that a PCP will prescribe antidepressant medication for that patient compared to patients who remain under the care of the PCP? Direct effects will largely reflect the impact on the PCP of referring their patient to an MHW.

Indirect effects are changes in PCP behaviour which occur in the wider primary care population, not just for those patients who were referred to MHWs. For example, does the addition of a clinical psychologist working on-site in primary care change the overall prescribing of antidepressants by the PCPs within that organisation for their entire practice population? Indirect effects indicate whether the presence of a MHW has a more general effect on PCP behaviour.

OBJECTIVES

To determine the direct and indirect effects of on-site mental health workers (MHWs) delivering psychological therapy and psychosocial interventions in primary care on the clinical behaviour of primary care providers (PCPs).

Investigation of direct effects involved comparison of PCP behaviour towards patients who were allocated to an on-site MHW for psychological therapy and psychosocial interventions with those patients who remained under the care of the PCP.

Investigation of indirect effects involved comparison of PCP behaviour towards patient populations in practices, clinics, or other primary care organisations with or without access to on-site MHWs.

METHODS

Criteria for considering studies for this review

Types of studies

Randomised controlled trials (RCTs), controlled before and after studies (CBAs), and interrupted time series (ITS).

Types of participants

Primary care providers. In order to ensure comparability of interventions, the review was restricted to PCPs who fulfilled the following definition:

'PCPs are medical health care professionals providing first contact and on-going care to patients, regardless of the patient's age, gender or presenting problem'.

Types of interventions

For the purposes of the present review, the addition of the MHW on-site in primary care was the intervention, rather than the particular therapeutic approach taken by that worker in his or her management of individual patients.

MHWs working on-site in primary care settings differ in terms of experience, training, therapeutic approach, funding, and relationship with the PCP (Sibbald 1993). Mental health interventions may be conducted by a wide range of staff with an equally wide range of qualifications and experience: practice counsellors, social workers, psychiatric or non-psychiatric nurses, psychiatrists, psychotherapists, psychologists, clergy, and lay volunteers. Equally, the interventions may vary from psychotherapy and counselling to broader psychosocial interventions such as occupational therapy and social casework. PCPs may take on a specialist MHW role and provide psychological therapy and psychosocial interventions with additional training and a change in clinical role. Furthermore, the patient groups served by these individuals may differ widely. For the purposes of the review, the main requirements for the interventions to be included were:

(1) psychological therapy and psychosocial interventions provided by an on-site MHW as a separate and distinct activity and not solely part of normal primary care consultations;

(2) the MHW was employed by or attached to the PCP organisation and worked on-site i.e. the PCP and MHW worked for at least part of the time in geographical proximity and as part of the same clinical team.

For the purposes of the review, psychological therapy and psychosocial interventions were defined broadly. Psychological therapy refers to formal treatments based on a theory of psychological functioning; whereas psychosocial interventions represent less specific interventions designed to improve mental health through general support, advice, and encouragement.

Interventions where the MHW additionally provided behaviour change interventions directly to the PCP (such as provision of guidelines or in-practice training), or where the MHW provided psychological therapy and psychosocial interventions as part of a wider quality improvement intervention which included behaviour change interventions delivered directly to the PCP, were excluded from the review. These interventions will be the subject of future reviews (Fletcher 2007; Parker 2008).

Psychological therapy and psychosocial interventions in primary care based on the use of technology such as screening tools, computerised aids, or self-help interventions, without the use of a specific MHW, were excluded from the present review.

Types of outcome measures

Outcome measures used in the review for the analysis of both direct and indirect effects included the following objective PCP clinical behaviours. Although some of these behaviours may reflect, in part, the behaviour of the patient (for example adherence to medication, primary care consultations), PCPs have an important role in determining such patient behaviours and thus the PCP clinical behaviours were considered relevant for the review.

(1) Diagnostic behaviour - this included both the accuracy of specific psychiatric diagnoses or more general detection of disorder i.e. whether a patient was recognised as 'psychiatrically distressed' (Marks 1979). It was hypothesised that recognition and diagnosis would increase with the presence of a MHW.

(2) Prescribing behaviour - this involved overall prescribing rates and costs, types of prescription, patient adherence to medication, and the overall adequacy of medication compared with clinical guidelines. It was hypothesised that prescribing would decrease with the presence of a MHW.

(3) Referral behaviour - this involved off-site referrals (both to psychiatric and non-psychiatric agencies), laboratory tests and investigations, and overall referral costs. It was hypothesised that referrals would decrease with the presence of a MHW.

(4) Consultations - in the review a consultation referred to visits by patients to the PCP or other primary care staff (such as primary care nurses) and the associated costs of these visits. All consultations (both mental health, non-mental health, and mixed) were included, where reported. Visits to specialist staff (including other mental health providers) were labelled as referrals in the present review. It was hypothesised that consultations would decrease with the presence of a MHW.

Although outcomes involving changes in the knowledge, skills, and attitudes of PCPs were of potential relevance, the present review focussed on objective measures of PCPs' actual clinical behaviours rather than psychological characteristics which may potentially impact on those behaviours.

Patient mental health outcomes (for example scores on standardised depression questionnaires) are of obvious relevance to the evaluation of the cost-effectiveness of MHWs delivering psychological therapy and psychosocial interventions in primary care. However, the present review was restricted to the impact of MHWs on the behaviour of the PCP, and studies examining patient mental health outcomes only were excluded.

Search methods for identification of studies

The search strategy used in 1998 is shown in Appendix 1. These searches were augmented in February 2007 through searches of MEDLINE, EMBASE, PsycINFO, CINAHL and the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*) to cover the period 1998 to 2007. An example of the search strategy is outlined below, and the full strategies are listed in Appendix 2.

CENTRAL

#1 MeSH descriptor Primary Health Care explode all trees
#2 MeSH descriptor Physicians, Family explode all trees
#3 MeSH descriptor Family Practice explode all trees
#4 family near/2 pract*
#5 general near/2 pract*
#6 primary near/2 care
#7 (#1 OR #2 OR #3 OR #4 OR #5 OR #6)
#8 counsel*
#9 psychotherap*

#10 clin* near/2 psy*
#11 beh* near/2 therap*
#12 group near/2 therap*
#13 psychoanal*
#14 psychiat*
#15 cog* near/2 therap*
#16 psychodynam*
#17 MeSH descriptor Counseling explode all trees
#18 MeSH descriptor Psychotherapy explode all trees
#19 MeSH descriptor Psychology, Clinical explode all trees
#20 MeSH descriptor Mental Health explode all trees
#21 MeSH descriptor Mental Disorders explode all trees
#22 (#8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21)
#23 (#7 AND #22)
#24 (#23), from 1998 to 2007

Data collection and analysis

A single review author (PB) read all the abstracts or full articles of the citations retrieved from the searches to identify potentially relevant studies. These publications were then independently read by both review authors who included studies that met the relevant criteria. Disagreements were resolved by discussion.

Information concerning each study was extracted independently by both authors using a modified version of the Effective Practice and Organisation of Care Group (EPOC) checklist (http://www.epoc.cochrane.org/Files/Website%20files/Documents/Reviewer%20Resources/datacollectionchecklist.pdf). Disagreements were resolved by discussion.

EPOC quality criteria for RCTs involve consideration of unit of allocation and analysis, concealment of allocation, follow-up rates, blinding, comparability of groups at baseline, reliability of outcome assessment, and protection against contamination. For inclusion in the review, CBAs must include contemporaneous data collection and the use of appropriate control groups. Quality criteria include baseline measurement in intervention and control groups, comparability of characteristics of intervention and controls, blinded assessment of primary outcome, protection against contamination, follow-up rates, and reliability of outcome assessment. For inclusion in the review, ITSs must include an intervention delivered at a defined point in time, contemporaneous data collection, and the presence of more than three data points before and after the intervention. Quality criteria include protection against secular change, presence of sufficient data points before and after the intervention, formal test for trend, data collection uncontaminated by the intervention, data identical before and after the intervention, blinded assessment of outcome, reliable outcomes, and completeness of the data set (Bero 2000).

As noted earlier, the review included examination of both direct and indirect effects. The examination of direct effects is amenable to RCTs. However, a number of CBAs of direct effects were also reported. Given the weakness of the CBA design and the availability of a significant number of RCTs, CBA studies of direct effects have been identified and extracted into tables but the data have not been presented in the text and have not been used in the interpretation of the main findings. In the examination of indirect effects, the use of an RCT design is potentially problematic and the proportion of CBA studies is much higher. Therefore, CBA studies have been presented and analysed fully in the examination of indirect effects.

Meta-analysis was conducted where multiple trials were reported examining the same outcome, and outcomes were reported in a standardised fashion suitable for pooling. The following data were used for the pooled analysis.

PCP consultations were pooled when the data were reported as mean number of consultations (with a standard deviation). Trials reporting consultation outcomes in alternative formats (for example medians, range of consultations, costs of consultations, or means without standard deviations) were excluded from the pooled analysis and reported narratively.

- Psychotropic prescribing data were pooled when the data were reported as the percentage of patients in each group taking psychotropic medication. Where different types of psychotropic prescriptions were distinguished in the same paper (for example antidepressants, anxiolytics), a decision was made to include the most frequently reported psychotropic prescriptions in the pooled analysis.
- Costs of prescribing were pooled when data were reported as mean cost of prescribing (with a standard deviation).
- Mental health referrals were pooled when the data were reported as the percentage of patients in each group referred to a mental health professional other than the MHW involved in the intervention. Trials reporting mental health referral outcomes in alternative formats (for example mean number of referrals) were excluded from the pooled analysis and reported narratively.

Where two comparisons from the same trial were included in a meta-analysis, the sample size in the control group was halved to avoid a unit of analysis error. The proportion, or mean outcome, in the control group was not changed.

For the pooled analyses, relative risks (RR) were calculated for dichotomous outcomes and standardised mean differences (SMD) for continuous outcomes. Although the same outcome (number of consultations) was used in the pooled analysis of consultation rates it should be noted that this outcome relates to a clinical behaviour which is a function of time. Since the included studies calculated outcomes over varying time periods, the SMD was reported for consultations. It should be noted that cost data are sometimes skewed and demonstrate much higher levels of variability than clinical outcomes, and caution must be exercised in the interpretation of statistical significance in single studies reporting cost data, and in the interpretation of SMD in meta-analysis of cost data.

Heterogeneity among the study results was assessed using the Chi^2 test for heterogeneity and the I^2 statistic. Where heterogeneity was low to moderate ($I^2 < 50\%$), a fixed-effect model was reported. Otherwise a random-effects model was used.

In accordance with EPOC guidelines, all results (both those included in the meta-analyses and those excluded) were also presented in the 'Comparisons and data' tables as 'Other data'. For all data, the following statistics were computed.

1. Absolute change (mean or proportion in experimental group minus control).
2. Relative percentage change (absolute change divided by post-test score in the control group).

3. Absolute change from baseline (pre-intervention to post-intervention changes in both groups).
4. Difference in absolute change from baseline.

In studies without baseline data, only absolute change and relative percentage change were calculated.

RESULTS

Description of studies

Forty-two studies comparing MHW and usual PCP care were included in the review; four were included in the same two papers (Kendrick 2005a; Kendrick 2005b; King 2000a; King 2000b). Thirty-three were studies of direct effects and nine examined indirect effects. One hundred and fifty-four studies were excluded as they met several inclusion criteria but not all (for example, trials of MHWs in primary care that failed to report objective PCP behaviours). These trials are listed in the excluded studies section.

Study populations

Generally, as PCPs were not the main focus of the studies, only very basic information was available on the PCP characteristics. Thirty-five studies involved PCPs from the UK, two from the United States, and one each from Australia, New Zealand, Sri Lanka, Netherlands, and West Germany. PCPs were general practitioners and family physicians in all the studies.

Information was only routinely provided on patients participating in the studies of direct effects. However, studies could be broadly categorised according to whether they involved professionals managing common mental health problems (for example anxiety and depression), which represented the bulk of the studies, and those involving professionals dealing with patients with more severe and enduring disorders (Bruce 1998; Hunter 1983; Wells 1992). Of the studies in common mental health problems, two dealt specifically with patients identified as high utilisers of medical care (Benson 1988; Sumathipala 2000) and two studies were conducted in patients with chronic illness (Basler 1990; Spurgeon 2007).

In most randomised studies of direct effects patients were recruited by the participating PCP, although some used alternatives such as patients recruited through screening in the primary care centre. The types of patients recruited to the trials varied. Some studies used specific patient groups identified through screening procedures. These included specific diagnostic groups (such as DSM-IIIR major and minor depression), problem types related to the intervention provided by the MHW (for example neuroses amenable to behavioural treatment, marital problems), or other groups (such as high utilisers of services or frequent attenders). Other studies recruited patients identified by the PCP as requiring psychological therapy or psychosocial intervention and thus included a heterogeneous mixture of patients.

Interventions

The studies involved a variety of MHWs including: counsellors (16 studies); psychologists (11 studies); psychiatrists (five studies); community psychiatric nurses (seven studies), nurse therapists (one study), practice nurses (one study), and social workers (one study). In two studies, the MHW profession was not clear (Lambert 2007; Walker 1989). Some studies examined more than one type of therapist, or treatments provided by therapists working together. Psychological therapy and psychosocial interventions provided by these MHWs included non-directive counselling, behaviour therapy, cognitive-behaviour therapy, cognitive-analytic therapy, brief dynamic psychotherapy, problem solving therapy, interpersonal therapy, facilitated self help, occupational therapy, practice-based psychiatric clinics, and social casework.

Risk of bias in included studies

Studies of direct effects

Twenty-five studies of direct effects were RCTs. Concealment of allocation was adequate in 10 studies (Brouwers 2006; Corney 1984; Corney 2003; Harvey 1984; Kendrick 2005a; Kendrick 2005b; King 2000a; King 2000b; Richards 2003; Sumathipala 2000), unclear from the information provided in 12 studies (Boot 1994; Brodaty 1983; Catalan 1991; Earll 1982; Ginsberg 1984; Gournay 1995; Lambert 2007; Lave 1998; Mynors-Wallis 1997; Robson 1984; Stanton 1998; Teasdale 1984), and the allocation procedure was considered open to bias in three studies (Ashurst 1983; Benson 1988; Hemmings 1997). There were eight studies of direct effects using a CBA design (Ashworth 2000; Basler 1990; Blakey 1986; Brantley 1986; Bruce 1998; Lyon 1993; Martin 1985; Spurgeon 2007). As noted above, details have been provided in the tables but these studies were not considered further in the text.

Although PCP behaviours were assessed objectively through medical record searches and chart reviews, the reliability of data gained through medical record searches and chart reviews was not assessed. Because patients were the unit of allocation in these studies of direct effects, the possibility of indirect effects associated with the presence of a MHW in the practice meant that contamination was always possible (whether the study was an RCT or CBA). Although a number of studies did report power analyses these were always related to the clinical outcome data rather than the PCP behaviours analysed in the present review, so their utility is unclear.

Studies of indirect effects

One RCT of indirect effects was identified (Lester 2007) and allocation concealment was adequate. There were eight studies of indirect effects using a CBA design (Baker 1996; Coe 1996; Hunter 1983; Pharoah 1996; Simpson 2003; Tarrier 1983; Walker 1989; Wells 1992). In the CBA studies, extensive information concerning the comparability of the sites chosen as controls was provided in two studies (Baker 1996; Simpson 2003). One used random selection of controls from a sample but did not provide any descriptive statistics (Pharoah 1996). Other studies described qualitative similarities between practices (Hunter 1983; Tarrier 1983; Walker 1989) or used practices in the same geographical area (Coe 1996; Wells 1992). The comparability of control and intervention practices in terms of outcome variables at baseline was examined statistically in only three studies (Hunter 1983; Pharoah 1996; Simpson 2003) and confirmed in two (Pharoah 1996; Simpson 2003). Four studies provided data on baseline measures without statistical testing (Coe 1996; Baker 1996; Tarrier 1983; Walker 1989).

In the indirect studies, most of the PCP behaviours were assessed objectively and the reliability was enhanced through the use of automated recording systems. Practices were the unit of allocation and control practices were specifically chosen so as not to have access to the intervention under test.

Effects of interventions

Studies of direct effects

Consultations

Ten RCTs provided data for the pooled analysis of the effects of an on-site MHW on consultation rates, involving 1061 patients (Benson 1988; Brouwers 2006; Gournay 1995; Kendrick 2005a; Kendrick 2005b; King 2000a, King 2000b, Lave 1998; Mynors-Wallis 1997; Richards 2003). The test for heterogeneity was not significant (Chi^2 = 14.76, df = 9, P = 0.10, I^2 = 39.0%). Overall, consultation rates for patients under the care of a MHW were significantly lower than for patients under usual care (SMD -0.17, 95% confidence interval (CI) -0.30 to -0.05).

Of those studies excluded from the pooled analysis, consultation rates were significantly lower in the intervention group in three out of seven studies that reported the significance of post-intervention differences (Robson 1984; Sumathipala 2000; Teasdale 1984). No significant difference was found in the remaining studies (Ashurst 1983; Boot 1994; Corney 1984; Earll 1982). Five studies did not report tests of statistical significance (Catalan 1991; Corney 2003; Ginsberg 1984; Harvey 1998; Stanton 1998); in four, consultation rates or consultation times were lower in the intervention group (Catalan 1991; Corney 2003; Ginsberg 1984; Harvey 1998) and in one the rate was higher in the intervention group (Stanton 1998).

Prescribing

Thirteen RCTs provided data for the pooled analysis of the effects of an on-site MHW on psychotropic prescribing rates, involving 1299 patients (Ashurst 1983; Boot 1994; Brouwers 2006; Catalan 1991; Corney 1984; Corney 2003; Earll 1982; Gournay 1995; Hemmings 1997; King 2000a; King 2000b; Stanton 1998; Teasdale 1984). The test for heterogeneity was not significant (Chi^2 = 9.94, df = 12, P = 0.62, I^2 = 0%). The proportion of patients under the care of an on-site MHW prescribed psychotropic medication was significantly lower than for those under usual care (RR 0.67, 95% CI 0.56 to 0.79).

One study excluded from the pooled analysis did not report tests of statistical significance but showed increases in the intervention group (Brodaty 1983).

Seven RCTs provided data for the pooled analysis of the costs of prescribing, involving 701 patients (Corney 2003; Kendrick 2005a; Kendrick 2005b; King 2000a; King 2000b; Mynors-Wallis 1997; Richards 2003). The test for heterogeneity was not significant (Chi^2 = 7.37, df = 6, P = 0.29, I^2 =8.6%). Overall, prescribing costs for patients under the care of a MHW were significantly lower than for those under usual care (SMD -0.22, 95% CI -0.38 to -0.07).

One study excluded from the pooled analysis showed significant reductions in psychotropic prescribing costs in the intervention group (Robson 1984).

Ten studies reported data on the effects on non-psychotropic or combined prescribing. Four studies reported no significant differences in prescribing (Earll 1982; Ginsberg 1984; Richards 2003; Robson 1984). Of the six studies not reporting statistical significance, three reported higher rates or costs in the MHW group (Brodaty 1983; Brouwers 2006; Corney 2003) and three reported lower rates or costs (Harvey 1998; Kendrick 2005a; Kendrick 2005b).

Referral

Seven RCTs provided data for the pooled analysis of mental health referrals, involving 793 patients (Boot 1994; Brouwers 2006; Catalan 1991; Corney 1984; Hemmings 1997; Lambert 2007; Teasdale 1984). The test for heterogeneity approached significance (Chi^2 = 1.24, df = 6, P = 0.08, I^2 = 46.6%). The proportion of patients under the care of a MHW referred for mental health care was significantly lower than for those under usual care (RR 0.13, 95% CI 0.09 to 0.20, fixed-effect model). A post hoc sensitivity analysis excluding the study with inadequate concealment (Hemmings 1997) reported similar results (Chi^2 = 10.10, df = 5, P = 0.07, I^2 = 50.5%; RR 0.17, 95% CI 0.07 to 0.41, random-effects model).

Of those studies excluded from the pooled analysis, one found no significant difference (Richards 2003); five studies did not report tests of statistical significance but found lower mean referrals and costs in the intervention group (Harvey 1998; Kendrick 2005a; Kendrick 2005b; King 2000a; King 2000b).

Four studies examined the effect on non-mental health referral. Three reported very similar mean referrals in intervention and control groups (Brouwers 2006; King 2000a; King 2000b) while one reported slightly higher proportions of referrals in the control group (Lambert 2007).

Seven studies examined the effect on overall referral, including both mental health and non-mental health patients. One found no significant differences between groups (Earll 1982). The other studies did not report tests of statistical significance. One reported a lower rate of referral in the intervention group (Harvey 1998), two reported lower costs in the intervention group (King 2000a; King 2000b), and three reported a higher rate of referral in the intervention group (Kendrick 2005a; Kendrick 2005b; Stanton 1998).

Studies of indirect effects

Consultations

One RCT found no significant difference in primary care consultation costs (Lester 2007).

Prescribing

One RCT found no significant difference in combined psychotropic and non-psychotropic drug costs (Lester 2007).

Four CBA studies found no significant differences in rates of psychotropic prescribing (Baker 1996; Coe 1996; Pharoah 1996; Simpson 2003).

Referral

One RCT examined the effects on referrals (Lester 2007) and found largely similar rates of referrals but increases in referrals to psychiatrists and an overall increase in costs. The same study also reported effects on non-mental health referrals and costs and found reduced rates and costs in the intervention group.

Six CBA studies examined the effects on mental health referrals (Baker 1996; Coe 1996; Hunter 1983; Tarrier 1983; Walker 1989; Wells 1992). In one study the intervention group had higher rates of referral to clinical psychology services, but that there were no significant differences in rates of referral to other services (Baker 1996). A second study found higher referral rates to psychiatry in

the intervention group before the intervention and lower rates after the intervention (Coe 1996). Intervention practices also had lower referral rates to community mental health teams. A third study found an increased referral rate of chronic psychiatric cases to both outpatient and inpatient facilities in the intervention group (Walker 1989). In a fourth study, the intervention reduced overall referrals to psychiatry, first referrals, and emergency referrals, but had no effect on re-referrals (Wells 1992). In a further two studies, there were conflicting results in the different intervention practices studied with some outcomes showing increases and others no change in mental health referrals (Hunter 1983; Tarrier 1983).

DISCUSSION

Literature search

The literature search was restricted to English language publications. At present it is not known whether there is a significant foreign-language literature relating to these issues. Future updates of the review may benefit from inclusion of studies without language restriction and searches of the NHS Economic Evaluation Database for further studies of cost effectiveness.

Analysis and outcomes

As noted in the introduction, the perspective taken in this review is related to issues of cost offset, which is concerned with the effects of mental health workers on service utilisation rather than issues of quality of care or patient outcomes. Service utilisation was reported as a secondary outcome in most of the studies included in the present review. It is likely that decisions concerning the provision of MHWs in primary care, in replacement models, will depend crucially on the clinical or cost effectiveness of the psychological therapy and psychosocial interventions that they provide in terms of patient outcomes (such as symptoms and perceived distress). Many of the direct studies included in the review reported data on patient outcomes; and reviews of the effects of MHWs in primary care on patient outcomes are available (Bower 2006; Brown 1995; Churchill 1999; Friedli 1996; Schulberg 2002). However, the present review was focussed on a second issue, the influence of MHWs on PCP behaviour and the consequent resource use and costs of mental health care in primary care.

Although patient outcomes are important, it should be noted that the effects examined in the present review are important determinants of the overall cost effectiveness of MHWs in primary care, and thus may inform decision making alongside studies of patient outcome. Adherents of the replacement model suggest that the costs of provision of on-site MHWs will be recouped from savings in health service utilisation, although the cost offset may not always be sufficient to overcome the costs of the MHW (Bower 2003).

It should be noted that changes in PCP behaviour, such as reductions in antidepressant prescribing, are generally viewed as positive from the cost-offset perspective as they reduce the costs of care, all other things being equal. This assumption was present explicitly or implicitly in the bulk of the papers in the review. However, other commentators have pointed out that this assumption can be challenged as reductions may alter the overall cost effectiveness of care if the new pattern of care (for example the treatment provided by the MHW) achieves inferior clinical or quality outcomes to the treatment that it is replacing (Wessely 1996). The net effect of this on cost effectiveness will depend upon the relative magnitude of changes in costs and effectiveness. Consultation-liaison and collaborative care models often seek to increase certain aspects of utilisation (such as medication).

Quality of included studies

Overall, the quality of studies of direct effects was variable. In part this reflects the fact that issues of relevance to the present review were often secondary to the main aim of the primary studies. This meant that information was often not presented on quality issues, for example the proportion of patients for whom information was available from medical records about PCP behaviour.

The examination of direct effects is amenable to RCT designs and the utility of CBA designs must be questioned. However, because care over a significant time span is a key characteristic of primary care, RCTs would benefit from longer follow up in order to examine the degree to which direct effects endure past the initial response of the PCP to the MHW referral.

The use of RCTs in the examination of indirect effects was rare and only one study using a cluster randomised design was identified (Lester 2007). This may be the result of the fact that the introduction of MHWs in primary care may reflect service innovation in individual primary care practices (Sibbald 1993) and practices that have independently introduced a MHW are unlikely to allow removal of the service for the purposes of research. CBA designs may have an important role as methods of evaluation where random allocation is unacceptable to participants. As differences between control and intervention groups in the characteristics of both providers and practices introduces selection bias, more consistent and detailed reporting of such characteristics would undoubtedly aid interpretation of results from such studies. It is likely that the interpretative difficulties caused by lack of control over allocation can only be offset by a significant weight of evidence from a number of CBA studies demonstrating consistent results. Studies in the present review (for example Baker 1996) have demonstrated that service evaluations using automated databases can provide both large samples of participating practices and examination of the long-term effects of interventions. However, it is important that studies using a unit of allocation other than the patient (for example practitioner or practice) use appropriate statistical techniques to take into account the clustering of patients within practices or organisations.

It should be noted that data were lacking on the degree to which the PCPs and organisations in the studies were representative. It is likely that volunteers to such research studies differed from non-volunteers. It is not clear how such bias would impact on the results. Volunteers to such studies may have more positive attitudes to mental health issues, or may have less positive attitudes (and thus are more likely to take part in studies where access to MHWs is part of the protocol). The majority of the studies in the review were conducted in the UK, which might limit the applicability of the studies to other contexts with different systems of primary care and mental health service delivery.

Results of the included studies

There was evidence from the pooled analysis that referral to a MHW caused reduction in PCP consultations. The effect size was 'small' according to current convention (Cohen 1988; Lipsey 1990). To give

an example of the size of such an effect, patients in the control group of a UK study included in the review reported a mean of 9.12 consultations over 12 months, with a standard deviation of 5.1 (King 2000a; King 2000b). If the effect on consultations estimated in the meta-analysis was robust over 12 months, this would equate to a reduction of approximately one consultation over that period that was associated with referral to a MHW. The modest nature of the difference was consistent with the heterogenous results from studies excluded from the pooled analysis. It should be noted that two of the studies (Benson 1988; Sumathipala 2000) examined interventions specifically aimed at those who frequently consulted in primary care and both reported positive results.

The pooled analyses also suggested that referral to a MHW reduced the likelihood of the PCP prescribing psychotropic medication and the overall costs of psychotropic prescribing. The impact on costs was again 'small' according to current convention (Cohen 1988; Lipsey 1990).

Finally, the pooled analyses suggested that referral to a MHW reduced the likelihood of the PCP referring to another MHW off site. Although the effect was of significant magnitude, it should be noted that the effects included in this analysis were highly heterogenous; the largest effect was found in a study which failed to use adequate concealment of allocation (Hemmings 1997). However, most of the studies not included in the pooled analysis also showed reductions, and a post hoc sensitivity analysis excluding the inadequately concealed study made little difference to the results.

In terms of the indirect effects, four CBA studies were consistent in showing that there is no statistically significant reduction in psychotropic prescribing in the primary care population associated with an on-site MHW, although the possibility of bias remains with this type of design. In terms of mental health referrals, the evidence is mixed, with some studies reporting decreases in referral rates and some studies finding that the intervention may actually increase certain types of mental health referrals.

These observed outcomes of the replacement model seem reasonable to the degree that an on-site MHW provides an accessible alternative to off-site referral and medication for an individual patient. Given the modest direct effects on PCP behaviour, it would be expected that indirect effects would be rare. Indeed, the presence of an on-site MHW may sometimes increase referral rates, possibly through sensitising the PCP to psychological and psychiatric problem presentations which cannot be managed within the resources available to the on-site MHWs.

AUTHORS' CONCLUSIONS

Implications for practice

The evidence presented provides some support for the hypothesis that MHWs providing psychological therapy and psychosocial interventions on-site in primary care cause reductions in consultation rates, psychotropic prescribing, and mental health referrals among patients treated by the MHW. However, the effects are modest. There is evidence that on-site MHWs do not impact on prescribing behaviour towards the wider practice population. The impact on referral rates is very inconsistent and no firm conclusions can be stated.

Overall, the present evidence suggests that on-site MHWs are associated with changes in PCP behaviour. The evidence does not support the addition of MHWs to primary care teams with the aim of reducing demand on PCPs or achieving enduring changes in their clinical behaviour which will generalise to the wider practice population.

Implications for research

Evaluation of the effects of MHWs on PCP behaviour would generally benefit from longer-term follow up in order to determine the stability of any effects that are demonstrated and their deterioration over time. This is especially true of the indirect effects of MHWs, which may only occur when the MHW is a permanent and integral member of the primary care team.

The use of quasi-experimental designs (CBAs and ITSs) and routinely collected data may provide a model for the efficient evaluation of indirect effects where participants (for example PCPs and MHWs) object to random allocation (Baker 1996). Greater detail concerning the baseline characteristics of participating practices and PCPs would allow more accurate judgement concerning the magnitude of selection bias in those variables.

The addition of MHWs to primary care teams is a complex intervention in the sense that it operates by altering inter-professional as well as inter-personal working relationships in ways which are poorly understood. Pragmatic RCTs treat such interventions as a 'black box' and generally give little information on how or why a particular intervention has (or has not) caused change. Future RCTs of MHW in primary care would benefit from the addition of qualitative research to increase knowledge about the conditions (relating to person, profession, and practice) which facilitate or prevent behaviour change in PCPs by MHWs. This might be facilitated if the interventions were more specifically linked to a model of PCP clinical behaviour and decision making in mental health work.

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CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Ashurst 1983

Methods	Design: RCT Allocation concealment: Not done Follow up: Professionals: Done Patients: Not done Blind assessment: Done Baseline: Not clear Reliable: Not done Contamination: Not done
Participants	248 patients Neurotic problems 12 PCPs One health centre and one practice UK
Interventions	Practice counsellor Eclectic counselling
Outcomes	Direct effects

Schulberg 2002

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* Indicates the major publication for the study

Ashurst 1983 *(Continued)*

Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Ashworth 2000

Methods	Design: CBA Base measurement: Not done Base control (patient): Done Blind assessment: Done Contamination protection (patient): Not done Reliable: Not clear Follow up: Professionals: Done Patients: NA
Participants	180 patients Patients receiving psychotherapy 6 PCPs 1 practice UK
Interventions	Two counsellors, a clinical psychologist and a psychiatric nurse. Cognitive analytic therapy, cognitive and behavioural therapy and behavioural therapy.
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Baker 1996

Methods	Design: CBA Base measurement: Done Base control (2nd site): Done Blind assessment: Done Contamination protection (2nd site): Done Reliable: Done/Not clear Follow up: Professionals: Done Patients: NA
Participants	75 practices UK

Baker 1996 *(Continued)*

Interventions	Practice counsellors
Outcomes	Indirect effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Basler 1990

Methods	Design: CBA Base measurement: Done Base control (patient): Done Blind assessment: Done Contamination protection: Not done Reliable: Not clear Follow up: Professionals: Not clear Patients: Not done
Participants	60 patients Pain problems 3 PCPs Germany
Interventions	Psychologist Group cognitive-behaviour therapy
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Benson 1988

Methods	Design: RCT Allocation concealment: Not done Follow up: Professionals: Done/Not done Patients: NA Blind assessment: Done Baseline: Done Reliable: Not clear Contamination: Not done

Benson 1988 *(Continued)*

Participants	50 patients Frequent attenders 6 PCPs 1 practice UK
Interventions	Psychologist and PCP Group therapy
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Blakey 1986

Methods	Design: CBA Base measurement: Not done Base control (patient): Done Blind assessment: Done Contamination: Not done Reliable: Not clear Follow up: Professionals: Done Patients: Not clear
Participants	178 patients Mixed psychological problems 7 PCPs 1 health centre UK
Interventions	Psychologist Behavioural treatment
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Boot 1994

Methods	Design: RCT

Boot 1994 *(Continued)*

	Allocation concealment: Not clear Follow up: Professionals: Done Patients: Not done Blind assessment: Done Baseline: Done/Not clear Reliable: Not clear Contamination: Not done
Participants	192 patients Mixed emotional problems 28 PCPs 7 practices UK
Interventions	Practice counsellors Non-directive counselling 2. Usual PCP care
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Brantley 1986

Methods	Design: CBA Base measurement: Not clear Base control (patient): Done Blind assessment: Done Contamination protection: Not done Reliable: Not clear Follow up: Professionals: Done Patients: Done
Participants	42 patients Mixed psychological problems 17 PCPs 1 family practice clinic USA
Interventions	Psychologists Behavioural treatment
Outcomes	Direct effects
Notes	

Risk of bias

Brantley 1986 *(Continued)*

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Brodaty 1983

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Not clear Patients: Not done Blind assessment: Not clear Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	56 patients Persistent psychological problems 10 practices Australia
Interventions	Psychiatrist Brief dynamic psychotherapy
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Brouwers 2006

Methods	Design: RCT Allocation concealment: Done Follow up: Professionals: Done Patients: Done Blind assessment: Done Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	194 patients Patients with emotional distress or minor mental disorders 70 PCPs Netherlands
Interventions	Social workers Coping and problem solving

Brouwers 2006 *(Continued)*

Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Bruce 1998

Methods	Design: CBA Base measurement: Not clear Base control (2nd site): Done Base control (patient): Done Blind assessment: Done Contamination protection (2nd site): Done Reliable: Not done Follow up: Professionals: Not clear Patients: Not clear
Participants	27 patients Patients with a chronic mental illness discharged from long stay wards 12 PCPs 2 practices UK
Interventions	G grade Community psychiatric nurse Community psychiatric nurse care
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Catalan 1991

Methods	Design: RCT Allocation concealment: Not clear Follow up Professionals: Not clear Patients: Not clear Blind assessment: Done Baseline: Done/Not done Reliable: Not clear

Catalan 1991 *(Continued)*

	Contamination: Not done
Participants	47 patients Mixed emotional problems 26 PCPs 16 practices UK
Interventions	Psychiatrist Problem solving
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Coe 1996

Methods	Design: CBA Base measurement: Not clear Base control (2nd site): Not clear Blind assessment: Done Contamination protection (2nd site): Done Reliable: Done/Not clear Follow up: Professionals: Done Patients: Not done
Participants	UK
Interventions	Practice counsellors
Outcomes	Indirect effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Corney 1984

Methods	Design: RCT Allocation concealment: Done Follow up: Professionals: Not clear Patients: Done

Corney 1984 *(Continued)*

	Blind assessment: Done Baseline: Done/Not clear Reliable: Not clear Contamination: Not done
Participants	80 patients Depression 6 PCPs 4 practices UK
Interventions	Social worker Casework counselling
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Corney 2003

Methods	Design: RCT Allocation concealment: Done Follow up professionals: Done Patients: Done/not done Blinded assessment: Done Baseline: Not done Reliable: Not clear Contamination: Not done
Participants	181 patients Patients who had suffered depression or depression/anxiety as their main symptom for over 6 months 9 practices UK
Interventions	Counsellors Counselling (psychodynamic or CBT)
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Earll 1982

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Done Patients: Not done Blind assessment: Done Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	50 patients Mixed psychological problems 4 PCPs 1 practice UK
Interventions	Psychologist Behavioral treatment
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Ginsberg 1984

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Not done Patients: Not done Blind assessment: Done/Not done Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	92 patients Neurotic patients 20 PCPs 4 health centres UK
Interventions	Nurse therapist Behavioural psychotherapy
Outcomes	Direct effects
Notes	

Risk of bias

Ginsberg 1984 *(Continued)*

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Gournay 1995

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Not done/Not clear Patients: Not done Blind assessment: Done Baseline: Done Reliable: Not clear Contamination: Not done
Participants	177 patients Non-psychotic problems 36 PCPs 6 practices UK
Interventions	Community psychiatric nurse Counselling
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Harvey 1998

Methods	Design: RCT Allocation concealment: Done Follow up: Professionals: Not clear Patients: Not done Blind assessment: Not clear Baseline: Done/Not clear Reliable: Not clear Contamination: Not done
Participants	162 patients Mixed emotional problems 9 practices UK
Interventions	Practice counsellors

Harvey 1998 *(Continued)*

	Person-centred counselling
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Hemmings 1997

Methods	Design: RCT Allocation concealment: Not done Follow up: Professionals: Not clear Patients: Done/Not done Blind assessment: Done Baseline: Done/Not done Reliable: Not clear Contamination: Not done
Participants	188 patients Mixed emotional problems 15 PCPs 3 practices UK
Interventions	Practice counsellor Eclectic counselling
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Hunter 1983

Methods	Design: CBA Base measurement: Done/Not done Base control (2nd site): Not clear Blind assessment: Done Contamination protection (2nd site): Not done Reliable: Not clear Follow up: Professionals: Not clear Patients: NA

Hunter 1983 *(Continued)*

Participants	6 practices UK
Interventions	Psychiatrist Psychiatric clinics
Outcomes	Indirect effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Kendrick 2005a

Methods	Design: RCT Allocation concealment: Done Follow up professionals: Done Patients: Done/Not done Blinded assessment: Done Baseline: Done Reliable: Not clear Contamination: Not done
Participants	168 patients Patients aged 18-65 years with a new episode of anxiety, depression, or reaction to life difficulties. 243 PCPs 62 practices UK
Interventions	Community mental health nurses (CMHN) Generic CMHN treatment
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Kendrick 2005b

Methods	Design: RCT Allocation concealment: Done Follow up professionals: Done Patients: Done/Not done Blinded assessment: Done

Kendrick 2005b *(Continued)*

	Baseline: Done Reliable: Not clear Contamination: Not done
Participants	157 patients Patients aged 18-65 years with a new episode of anxiety, depression or reaction to life difficulties 243 PCPs 62 practices UK
Interventions	Community mental health nurses Problem-solving treatment
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

King 2000a

Methods	Design: RCT Allocation concealment: Done Follow up professionals: Done Patients: Not done Blinded assessment: Done Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	130 patients Patients diagnosed as suffering from depression, or mixed anxiety and depression 93 PCPs 24 practices UK
Interventions	Psychologists CBT
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

King 2000b

Methods	Design: RCT Allocation concealment: Done Follow up professionals: Done Patients: Not done Blinded assessment: Done Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	134 patients Patients diagnosed as suffering from depression, or mixed anxiety 93 PCPs 24 practices UK
Interventions	Counsellors Non directive counselling
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Lambert 2007

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Not clear Patients: Not done Blind assessment: Done Baseline: Not done Reliable: Not clear Contamination: Not done
Participants	117 patients Panic disorder with or without agorophobia 15 practices UK
Interventions	Occupational therapy led lifestyle intervention
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement

Lambert 2007 *(Continued)*

Allocation concealment?	Unclear risk	B - Unclear

Lave 1998

Methods	Design: RCT Allocation concealment: Not clear Follow up professionals: Not clear Patients: Not clear Blinded assessment: Done Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	185 patients Patients diagnosed with DSM IIIR current major depression 4 practices USA
Interventions	Experienced and trained psychiatrists and psychologists Interpersonal therapy
Outcomes	Direct effects
Notes	

Risk of bias

Bias	**Authors' judgement**	**Support for judgement**
Allocation concealment?	Unclear risk	B - Unclear

Lester 2007

Methods	Design: RCT Allocation concealment: Done Follow-up professionals: Done Patients: Not done Blinded assessment: Done Baseline: Not clear Reliable: Not clear Contamination: Done
Participants	368 patients Patients identified by their GP as having an ongoing or newly diagnosed common mental health problem 19 practices UK
Interventions	Primary care mental health workers
Outcomes	Indirect effects
Notes	

Lester 2007 *(Continued)*

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Lyon 1993

Methods	Design: CBA Base measurement: Done Base control (patient): Done Blind assessment: Not clear Contamination protection: Not done Reliable: Not clear Follow up: Professionals: Done Patients: Done
Participants	87 patients Mental health problems 1 practice UK
Interventions	Practice counsellor Counselling
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Martin 1985

Methods	Design: Controlled before and after (CBA) Base measurement: Not done Base control (patient): Done Blind assessment: Done Contamination protection: Not done Reliable: Not clear Follow up: Professionals: Done Patients: Done
Participants	174 patients Mixed emotional problems 6 PCPs 1 practice UK

Martin 1985 *(Continued)*

Interventions	Marriage guidance counselling Practice counsellors
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Mynors-Wallis 1997

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Not clear Patients: Done Blind assessment: Done Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	70 patients Mixed emotional problems 4 health centres UK
Interventions	Community nurses Problem solving
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Pharoah 1996

Methods	Design: CBA Base measurement: Done Base control (2nd site): Not clear Blind assessment: Done Contamination protection (2nd site): Done Reliable: Done Follow up: Professionals: Done

Pharoah 1996 *(Continued)*

	Patients: NA
Participants	32 practices UK
Interventions	Practice counsellors
Outcomes	Indirect effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Richards 2003

Methods	Design: RCT Allocation concealment: Done Follow up professionals: Not done Patients: Not done Blinded assessment: Done Baseline: Not clear Reliable: Not clear Contamination: Not done
Participants	139 patients All patients aged 18+ consulting GPs with mild to moderate symptoms of anxiety and/or depression 17 practices UK
Interventions	Practice nurses with 3 days training Facilitated self help
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Robson 1984

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Not clear Patients: Not clear Blind assessment: Done/Not clear

Robson 1984 *(Continued)*

	Baseline: Done/Not clear Reliable: Done/Not clear Contamination: Not done
Participants	429 patients Mixed psychological problems 6 PCPs UK
Interventions	Psychologists Behavioural treatment
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Simpson 2003

Methods	Design: CBA Base measurement: Done Base control (2nd site): Done Blind assessment: Done Contamination protection (2nd site): Done Reliable: Done Follow up: Professionals: Done Patients: NA
Participants	85 practices UK
Interventions	Counsellors Counselling
Outcomes	Indirect effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Spurgeon 2007

Methods	Design: CBA Base measurement: Not done

Spurgeon 2007 *(Continued)*

	Base control (patients): Not done Blind assessment: Done Contamination protection (patients): Not done Reliable: Not clear Follow up: Professionals: Not clear Patients: NA
Participants	271 patients All patients recorded on the chronic disease register for diabetes, asthma or hypertension, or 'frequent attenders' 4 PCPs 1 practice UK
Interventions	Qualified and trained counsellors Group counselling sessions, counselling orientation primarily CBT
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Stanton 1998

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Done Patients: Done Blind assessment: Done Baseline: Done Reliable: Not clear Contamination: Not done
Participants	47 patients Relationship problems 6 practices UK
Interventions	Marriage guidance counsellors Counselling
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement

Stanton 1998 *(Continued)*

Allocation concealment?	Unclear risk	B - Unclear

Sumathipala 2000

Methods	Design: RCT Allocation concealment: Done Follow up professionals: Not clear Patients: Not done Blinded assessment: Done Baseline: Done Reliable: Done Contamination: Not done
Participants	68 patients Patients who had repeated consultations for medically unexplained symptoms 7 PCPs A general outpatient clinic providing primary care Sri Lanka
Interventions	Research psychiatrist CBT
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Tarrier 1983

Methods	Design: CBA Base measurement: Not clear Base control (2nd site): Not clear Blind assessment: Done Contamination protection (2nd site): Done Reliable: Not clear Follow up: Professionals: Done Patients: NA
Participants	2 practice and 2 health centres UK
Interventions	Clinical psychologist
Outcomes	Indirect effects
Notes	

Tarrier 1983 *(Continued)*

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Teasdale 1984

Methods	Design: RCT Allocation concealment: Not clear Follow up: Professionals: Not clear Patients: Not done Blind assessment: Not clear Baseline: Done/Not clear Reliable: Not clear Contamination: Not done
Participants	44 patients Depression 13 practices UK
Interventions	Psychologist Cognitive-behaviour therapy
Outcomes	Direct effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Walker 1989

Methods	Design: CBA Base measurement: Not done Base control (2nd site): Not clear Blind assessment: Done Contamination protection (2nd site): Done Reliable: Not clear Follow up: Professionals: Done Patients: NA
Participants	2 health centres New Zealand
Interventions	Counselling service

Walker 1989 *(Continued)*

Outcomes	Indirect effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Wells 1992

Methods	Design: CBA Base measurement: Not clear Base control (2nd site): Not clear Blind assessment: Done Contamination protection (2nd site): Done Reliable: Not clear Follow up: Professionals: Done Patients: NA
Participants	UK
Interventions	CPN CPN attachment
Outcomes	Indirect effects
Notes	

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	D - Not used

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Adler 2004	Direct RCT Collaborative care
Akerblad 2003	Direct RCT Collaborative care
Appleby 1997	Direct RCT No objective PCP behaviours reported (patient outcome only). No PCP usual care group.

Study	Reason for exclusion
Araya 2003	Direct RCT Collaborative care
Bannerjee 1996	Direct RCT MHW in community setting rather than primary care.
Barksy 2004	Direct RCT Consultation liaison
Barrowclough 2001	Direct RCT No objective PCP behaviours reported (patient outcome only). No PCP usual care group.
Basler 1996	Direct CBA Psychological treatment of physical disorder.
Bernal 1995	Direct CBA No PCP usual care group.
Bindman 2001	Indirect CBA No objective PCP behaviours reported (specialist only)
Blackburn 1981	Direct RCT No objective PCP behaviours reported (patient outcome only). No PCP usual care group.
Blanchard 1995	Direct RCT Collaborative care
Blay 2002	Direct RCT No objective PCP behaviours reported (patient outcome only). No PCP usual care group. MHW not based in primary care.
Blomhoff 2001	Direct RCT No PCP usual care group.
Blowers 1987	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW not based in primary care.
Brook 2003	Direct RCT Collaborative care
Brooker 1994	Direct CBA No objective PCP behaviours reported (patient outcome only). MHW in community setting rather than primary care.
Brown 1996	Direct RCT

Study	Reason for exclusion
	No objective PCP behaviours reported (patient outcome only).
Browne 2002	Direct RCT No PCP usual care group.
Bruce 2004	Direct RCT Collaborative care
Busch 1996	Direct CBA Comparison group of non-attenders for treatment rather than true control group.
Butler 1987	Direct RCT No objective PCP behaviours reported (patient outcome only). Not clear if MHW based in primary care.
Butler 1991	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW not based in primary care.
Callahan 1994	Direct RCT No MHW - provision of treatment recommendations only.
Cappocia 2004	Direct RCT Collaborative care
Carr 1997	Direct and indirect CBA No objective PCP behaviours reported (patient outcome only, GP knowledge and attitudes only). Consultation liaison
Catalan 1984	Direct RCT MHW was specially trained PCP, no PCP usual care group.
Ceroni 2002	Direct RCT Consultation liaison
Chalder 1997	Direct RCT No MHW - self help intervention only.
Chilvers 2001	Direct RCT No PCP usual care group
Clarke 2005	Direct RCT Collaborative care
Coleman 1999	Direct RCT Collaborative care
Cooper 1975	Direct CBA

Study	Reason for exclusion
	Data collection periods for intervention and control groups not contemporaneous.
Cooper 1997	Direct RCT No objective PCP behaviours reported (patient and infant outcome only).
Cooper 2003	Direct RCT No objective PCP behaviours reported (patient and infant outcome only).
Coulehan 1997	Direct RCT No objective PCP behaviours reported (patient outcome only).
Cullen 1976	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW was trained PCP.
Dalgard 2006	Direct RCT No objective PCP behaviours reported (patient outcome only).
Datto 2003	Direct RCT Collaborative care
Dey 2002	Direct RCT Consultation liaison
Dietrich 2004	Direct RCT Collaborative care
Donnan 1990	Direct RCT No MHW - self help intervention only.
Eayrs 1984	Direct CBA No objective PCP behaviours reported (patient outcome only). Only a proportion of MHW interventions in primary care.
Emmanuel 2002	Direct RCT Consultation liaison
Escobar 2007	Direct RCT Consultation liaison
Espie 2001	Direct RCT No objective PCP behaviours reported (patient outcome only).
Espie 2007	Direct RCT No objective PCP behaviours reported (patient outcome only).
Finley 2000	Direct RCT

Study	Reason for exclusion
	Collaborative care
Finney 1989	Direct CBA Unclear whether MHW based in primary care.
Finney 1991	Direct CBA Unclear whether MHW based in primary care.
Friedli 1999	Direct RCT No objective PCP behaviours reported (patient outcome only).
Gater 1997	Indirect RCT Consultation liaison
Gilham 2006	Direct RCT No objective PCP behaviours reported (patient outcome only).
Goldberg 1996	Direct CBA Consultation liaison
Grant 2000	Direct RCT Unclear whether MHW based in primary care.
Graves 1981	Direct CBA MHW in community setting rather than primary care.
Hebert 1994	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW in community setting rather than primary care.
Hedrick 2003	Direct RCT Collaborative care
Hellman 1990	Direct RCT No objective PCP behaviours reported (patient outcome only).
Hemmings 1993	Direct RCT MHW in teaching setting rather than primary care.
Hirsch 1997	Direct CBA No objective PCP behaviours reported (patient outcome only). MHW in primary care setting in London dataset only.
Holden 1987	Direct RCT No objective PCP behaviours reported (patient outcome only).
Holdsworth 1996	Direct RCT

Study	Reason for exclusion
	No MHW - self help intervention only.
Honey 2002	Direct RCT No objective PCP behaviours reported (patient outcome only).
Horowitz 1996	Indirect RCT No MHW - pharmacists as intervention rather than MHW.
Hunkeler 2000	Direct RCT Collaborative care
Hunter 1995	Direct RCT No objective PCP behaviours reported (patient outcome only).
Jackson 1993	Indirect RCT Consultation liaison
Jenkins 1994	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW in community setting rather than primary care, interventions inititiated by community mental health team.
Judd 2001	Direct RCT MHW was specially trained PCP, no PCP usual care group. No objective PCP behaviours reported (patient outcome only).
Karlberg 1998	Direct RCT No objective PCP behaviours reported (patient outcome only). Unclear whether MHW based in primary care.
Kashner 1992	Direct RCT No MHW - provision of treatment recommendations only.
Katon 1992	Direct RCT Consultation liaison
Katon 1995	Direct RCT Consultation liaison
Katon 1996	Direct RCT Consultation liaison
Katon 2001	Direct RCT Collaborative care
Katon 2003	Direct RCT Collaborative care

Study	Reason for exclusion
Katzelnick 2000	Direct RCT Collaborative care
Kiely 1986	Direct RCT No MHW - self help intervention only.
King 1994	Direct RCT No objective PCP behaviours reported (patient outcome only).
Klerman 1996	Direct CBA Data collection periods for intervention and control groups not contemporaneous.
Kolk 2004	Direct RCT MHW not based in primary care.
Lang 2003	Direct CBA No objective PCP behaviours reported (patient outcome only).
Lang 2006	Direct RCT No objective PCP behaviours reported (patient outcome only).
Lewis 1996	Direct RCT No MHW - computerised diagnosis only.
Lidbeck 1997	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW not based in primary care.
Lin 1997	Indirect CBA Consultation liaison
Lindsay 1987	Direct RCT No objective PCP behaviours reported (patient outcome only). Not clear if MHW based in primary care.
Lofvander 1997	Direct RCT No objective PCP behaviours reported (patient outcome only).
Lynch 1997	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW not based in primary care.
Malcolm 2002	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW was PCP
Mann 1998	Direct RCT Consultation liaison

Study	Reason for exclusion
Marks 1985	Direct RCT No objective PCP behaviours reported (patient outcome only)
McKechnie 1981	Direct CBA No pre-treatment measures of PCP behaviour.
McLeod 1997	Direct RCT No objective PCP behaviours (patient outcome only). Unclear if MHW based in primary care.
Milgrom 2005	Direct RCT No objective PCP behaviours reported (patient outcome only).
Milne 1988	Direct ITS Less than 2 data points either side of intervention.
Miranda 1994	Direct RCT No objective PCP behaviours recorded (missed medical appointments only). Not clear if MHW based in primary care.
Miranda 2003	Direct RCT Collaborative care
Munoz 1995	Direct RCT No objective PCP behaviours reported (patient outcome only).
Mynors-Wallis 1995	Direct RCT No objective PCP behaviours reported (patient outcome only). No PCP usual care group.
Mynors-Wallis 2000	Direct RCT No PCP usual care group. No objective PCP behaviours reported (patient outcome only).
Nazareth 1996	Direct RCT No MHW - management checklist only.
Onyett 1988	Direct RCT Not clear if MHW based in primary care. PCP care group used appointment schedule as specified by protocol.
Oslin 2003	Direct RCT Collaborative care
Paykel 1982	Direct RCT MHW in community setting rather than primary care.
Petrou 2006	Direct RCT

Study	Reason for exclusion
	No objective PCP behaviours reported (patient outcome only).
Peveler 1999	Direct RCT Collaborative care
Power 1989	Direct RCT No objective PCP behaviours measured apart from prescribing which was part of study protocol. Not clear if MHW based in primary care.
Power 1990	Direct RCT No objective PCP behaviours measured apart from prescribing which was part of study protocol. Not clear if MHW based in primary care.
Raphael 1977	Direct RCT No objective PCP behaviours reported (patient outcome only). MHW in community setting rather than primary care.
Rickles 2004	Direct RCT Collaborative care
Ridsdale 2001	Direct RCT No PCP usual care group
Ridsdale 2004	Direct RCT No PCP usual care group
Risdale 1999	Direct RCT No objective PCP behaviours reported (patient outcome only).
Roberts 2006	Direct RCT Not clear if MHW based in primary care. No objective PCP behaviours reported (patient outcome only).
Ross 1985	Direct RCT No objective PCP behaviours reported (patient outcome only).
Rost 1994	Direct RCT No MHW - provision of treatment recommendations only.
Rost 2001	Direct RCT Collaborative care
Roy-Byrne 2001	Direct RCT Collaborative care
Roy-Byrne 2005	Direct RCT

Study	Reason for exclusion
	Collaborative care
Saarijarvi 1991	Direct RCT No objective PCP behaviours reported (patient outcome only). Not clear if MHW based in primary care.
Salminen 2005	Direct RCT No objective PCP behaviours reported (patient outcome only). Not clear if MHW based in primary care.
Saxon 2006	Direct RCT Patients randomised to primary care in different settings
Schreuders 2007	Direct RCT No objective PCP behaviours reported (patient outcome only). .
Schulberg 1996	Direct RCT Objective PCP behaviours reported for usual care group only.
Scott 1992	Direct RCT PCP behaviours recorded in PCP group only.
Scott 1997	Direct RCT No objective PCP behaviours reported (patient outcome only).
Sharp 2000	Direct RCT No PCP usual care group
Sharp 2004	Direct RCT No objective PCP behaviours reported (patient outcome only). .
Simon 2000	Direct RCT Collaborative care
Simon 2004	Direct RCT Collaborative care
Simons 2001	Direct RCT Not clear if MHW based in primary care. No objective PCP behaviours reported (patient outcome only).
Smit 2005	Direct RCT Collaborative care
Smith 1986	Direct RCT No MHW - provision of treatment recommendations only.

Study	Reason for exclusion
Smith 1995	Direct RCT No MHW - provision of treatment recommendations only.
Sorby 1991	Direct RCT No objective PCP behaviours reported (patient outcome only). No MHW - self help only.
Stanley 2003	Direct RCT No objective PCP behaviours reported (self report only).
Swindle 2003	Direct RCT Collaborative care
Trepka 1986	Direct RCT No PCP usual care group
Tudiver 1992	Direct RCT MHW in community setting rather than primary care.
Turner 2006	Direct RCT No objective PCP behaviours reported (patient outcome only).
Unutzer 2002	Direct RCT Collaborative care
van Boeijen 2005	Direct RCT No PCP usual care group. No objective PCP behaviours reported (patient outcome only).
van Schaik 2006	Direct RCT No objective PCP behaviours reported (patient outcome only).
Vines 2004	Direct CBA No objective PCP behaviours reported (patient outcome only).
Warner 1993	Indirect RCT Consultation liaison
Wells 2000	Direct RCT Collaborative care
Whooley 2000	Direct RCT Collaborative care
Wickberg 1996	Direct RCT No objective PCP behaviours measured (patient outcome only).

Study	Reason for exclusion
Wilkinson 1993	Direct RCT Consultation liaison
Willemse 2006	Direct RCT No objective PCP behaviours reported.
Williams 1989	Indirect ITS No objective PCP behaviours measured (psychiatric admissions only).
Wood 1994	Direct CBA No objective PCP behaviours reported (psychiatric admissions only).
Zayas 2004	Direct RCT No objective PCP behaviours reported (patient outcome only).

DATA AND ANALYSES

Comparison 1. Direct effects

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 PCP consultations	10	1061	Std. Mean Difference (IV, Fixed, 95% CI)	-0.17 [-0.30, -0.05]
2 PCP psychotropic prescribing	13	1299	Risk Ratio (M-H, Fixed, 95% CI)	0.67 [0.56, 0.79]
3 PCP prescribing costs	7	701	Std. Mean Difference (IV, Fixed, 95% CI)	-0.22 [-0.38, -0.07]
4 PCP mental health referrals	7	793	Risk Ratio (M-H, Fixed, 95% CI)	0.13 [0.09, 0.20]
5 PCP consultations			Other data	No numeric data
6 PCP prescribing			Other data	No numeric data
6.1 PCP prescribing - psychotropics			Other data	No numeric data
6.2 PCP prescribing - non-psychotropic or combined prescribing			Other data	No numeric data
7 PCP referrals			Other data	No numeric data
7.1 Mental health referrals			Other data	No numeric data
7.2 Non-mental health referrals			Other data	No numeric data

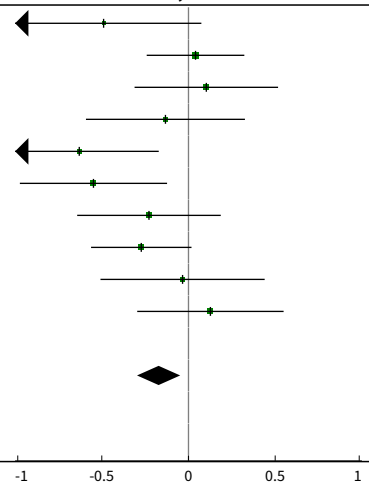
Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
7.3 All referrals			Other data	No numeric data
8 Total costs			Other data	No numeric data
9 PCP mental health referrals (sensitivity analysis on quality)	6	639	Risk Ratio (M-H, Random, 95% CI)	0.17 [0.07, 0.41]

Analysis 1.1. Comparison 1 Direct effects, Outcome 1 PCP consultations.

Study or subgroup	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Std. Mean Difference Fixed, 95% CI	Weight	Std. Mean Difference Fixed, 95% CI
Benson 1988	26	2.9 (2.2)	24	4.2 (3)		4.88%	-0.49[-1.05,0.07]
Brouwers 2006	98	2.4 (2.6)	96	2.3 (2.3)		19.56%	0.04[-0.24,0.32]
Gournay 1995	53	3.3 (2.9)	39	3 (2.8)		9.05%	0.1[-0.31,0.52]
Kendrick 2005a	62	3.9 (3.2)	26	4.4 (3.7)		7.38%	-0.13[-0.59,0.33]
Kendrick 2005b	71	2.7 (2.1)	26	4.4 (3.7)		7.38%	-0.63[-1.09,-0.17]
King 2000a	63	6.5 (4.6)	34	9.1 (5.1)		8.6%	-0.55[-0.97,-0.12]
King 2000b	67	7.7 (6.6)	34	9.1 (5.1)		9.05%	-0.23[-0.64,0.19]
Lave 1998	93	4.7 (4.5)	92	6 (5)		18.49%	-0.27[-0.56,0.02]
Mynors-Wallis 1997	40	2.8 (2.9)	30	2.9 (2.9)		6.92%	-0.03[-0.51,0.44]
Richards 2003	47	5 (2.7)	40	4.7 (3.2)		8.7%	0.13[-0.3,0.55]
Total * **	**620**		**441**			**100%**	**-0.17[-0.3,-0.05]**

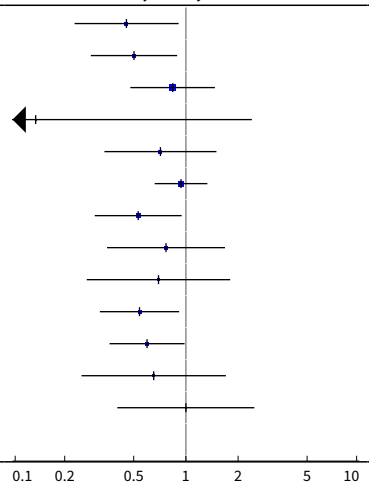
Heterogeneity: Tau^2=0; Chi^2=14.76, df=9(P=0.1); I^2=39.01%

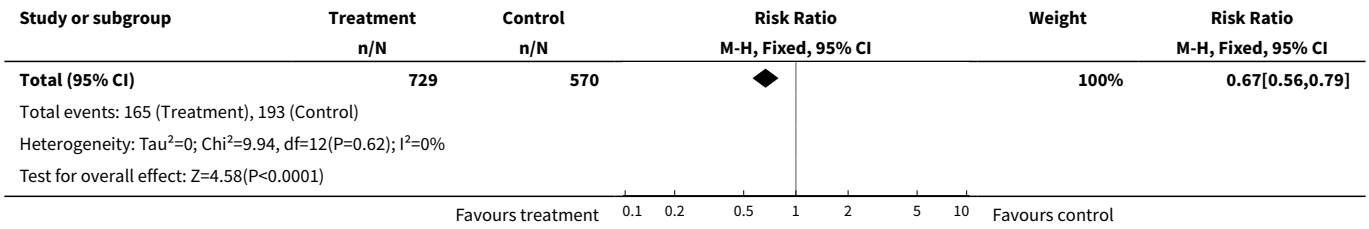
Test for overall effect: Z=2.71(P=0.01)



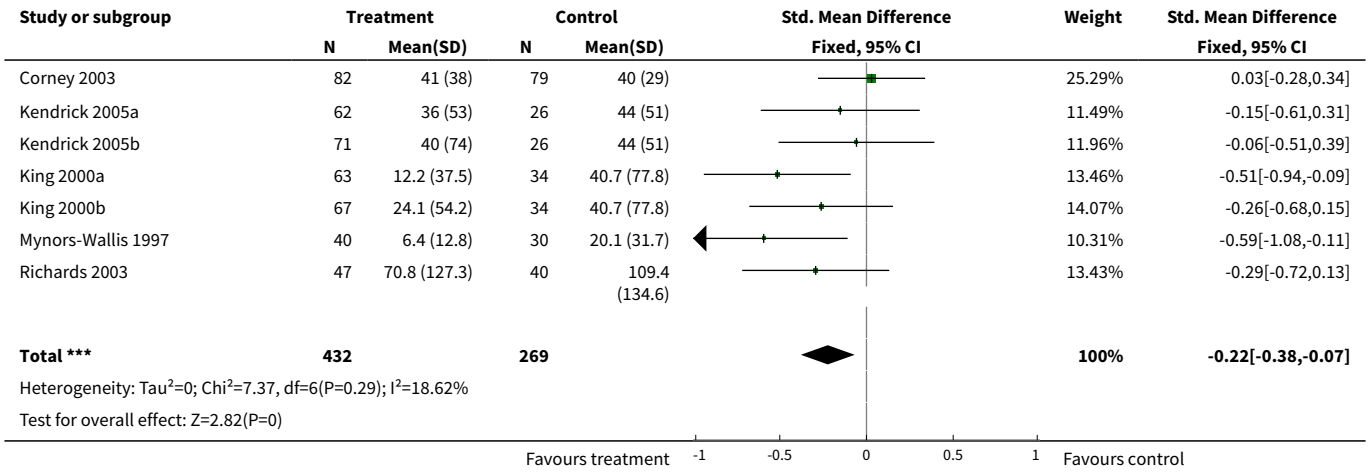
Analysis 1.2. Comparison 1 Direct effects, Outcome 2 PCP psychotropic prescribing.

Study or subgroup	Treatment n/N	Control n/N	Risk Ratio M-H, Fixed, 95% CI	Weight	Risk Ratio M-H, Fixed, 95% CI
Ashurst 1983	9/62	23/72		10.01%	0.45[0.23,0.91]
Boot 1994	17/107	19/60		11.45%	0.5[0.28,0.89]
Brouwers 2006	18/98	21/96		9.98%	0.84[0.48,1.47]
Catalan 1991	0/21	4/26		1.9%	0.14[0.01,2.4]
Corney 1984	9/41	12/39		5.79%	0.71[0.34,1.5]
Corney 2003	35/82	36/79		17.25%	0.94[0.66,1.33]
Earll 1982	9/23	14/19		7.21%	0.53[0.3,0.94]
Gournay 1995	9/49	11/46		5.34%	0.77[0.35,1.68]
Hemmings 1997	11/76	5/24		3.57%	0.69[0.27,1.8]
King 2000a	17/63	17/34		10.39%	0.54[0.32,0.91]
King 2000b	20/67	17/34		10.61%	0.6[0.36,0.98]
Stanton 1998	5/23	8/24		3.68%	0.65[0.25,1.7]
Teasdale 1984	6/17	6/17		2.82%	1[0.4,2.48]

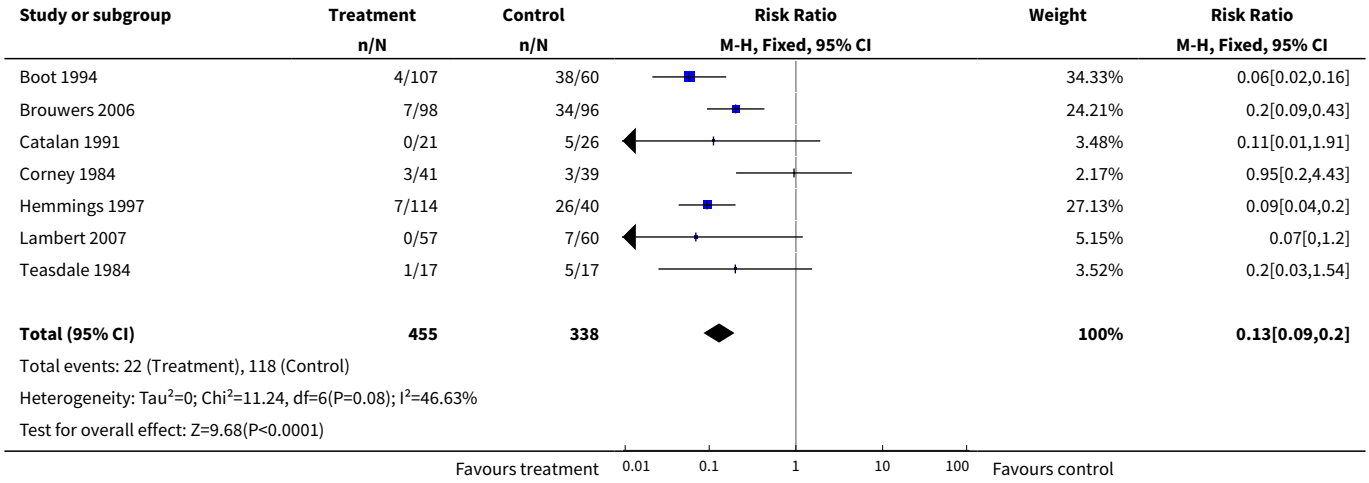




Analysis 1.3. Comparison 1 Direct effects, Outcome 3 PCP prescribing costs.



Analysis 1.4. Comparison 1 Direct effects, Outcome 4 PCP mental health referrals.



Analysis 1.5. Comparison 1 Direct effects, Outcome 5 PCP consultations.

	PCP consultations		
Study	**Study design**	**Outcomes**	**Results**
Ashurst 1983	Randomized controlled trial	GP consultations	GP consultations

PCP consultations

Study	Study design	Outcomes	Results
		Average length of consultation	12 months post-treatment Int 7 (n=112) Con 6.3 (n=121) Absolute change=0.7 Relative % change=11% Average length of consultation Int 10.4 (n=112) Con 10.1 (n=121) Absolute change=0.3 Relative % change=3% Total GP time Int 64 Con 59 Absolute change=5 Relative % change=9% Reported t=0.91, df=231, p=0.36
Ashworth 2000	Controlled before-after study	GP consultations	GP consultations 1 year comparison 2 Pre treatment Int 6.33 (5.67) (n=75) Con 1.6 (1.59) (n=75) Post treatment Int 7.08 (6.33) (n=75) Con 1.41 (1.27) (n=75) Absolute change post 5.67 Relative % change 402.1 Absolute change from baseline Int 0.75, Con -0.19 Difference in absolute change from baseline 0.94 GP consultations 2 year comparison 2 Pre treatment Int 6.33 (5.67) (n=75) Con 1.6 (1.59) (n=75) Post treatment 3.93 (3.58) (n=71) Con 1.71 (2.15) (n=63) Absolute change post 2.22 Relative % change 129.8 Absolute change from baseline Int -2.4, Con 0.11 Difference in absolute change from baseline -2.51 GP consultations 1 year comparison 1 Pre treatment Int 7.23 (6.67) (n=30) Con 4 (3.98) (n=30) Post treatment Int 8.23 (7.54) (n=30) Con 5 (3.36) (n=30) Absolute change post 3.23 Relative % change 64.6 Absolute change from baseline Int 1, Con 1 Difference in absolute change from baseline 0 GP consultations 2 year comparison 1 Pre treatment Int 7.23 (6.67) (n=30) Con 4 (3.98) (n=30) Post treatment Int 4.74 (4.43) (n=27) Con 4.48 (3.88) (n=27) Absolute change post 0.26 Relative % change 5.8 Absolute change from baseline Int -2.49, Con 0.48 Difference in absolute change from baseline -2.97
Basler 1990	Controlled before-after study	GP consultations	GP consultations

PCP consultations

Study	Study design	Outcomes	Results
			3 months pre-treatment Int Pre 7.08 (3.43) (n=25?) Con Pre 6.15 (3.07) (n=20?) 3 months post-treatment Int 3.90 (1.13) (n=25?) Con 7.8 (4.14) (n=20?) Absolute change=-3.9 Relative % change=-50% Absolute change from baseline Int -3.18 Con 1.65 Difference in absolute change from baseline=-4.83 Reported chisq=22.43, df=1, p<0.01
Benson 1988	Randomized controlled trial	GP consultations	Consultations 12 months pre-treatment Int 4.6 (2.8) (n=26) Con 5.8 (5.3) (n=24) 6 months pre-treatment Int 5.5 (3.3) (n=26) Con 5.0 (3.4) (n=24) 1st 6 months during treatment Int 2.9 (2.2) (n=26) Con 4.2 (3.0) (n=24) Absolute change=-1.3 Relative % change=-31% Absolute change from baseline Int -1.7 Con -1.6 Difference in absolute change from baseline=-0.1 2nd 6 months during treatment Int 2.5 (1.6) (n=26) Con 3.2 (2.8) (n=24) Absolute change=-0.7 Relative % change=-22% Absolute change from baseline Int -2.1 Con -2.6 Difference in absolute change from baseline=0.5 6 months post-treatment Int 1.5 (1.5) (n=26) Con 3.1 (2.5) (n=24) Absolute change=-1.6 Relative % change=-52% Absolute change from baseline Int -3.1 Con -2.7 Difference in absolute change from baseline=-0.4 Reported t=2.84, df=36, p<0.01 versus treatment group 12 months post-treatment Int 1.6 (n=14) Con 3.0 (n=19) Absolute change=-1.4 Relative % change=-47% Absolute change from baseline Int -3.0 Con -2.8 Difference in absolute change from baseline=-0.2 (s.d. not given)
Blakey 1986	Controlled before-after study	GP consultations	Note: Data presented in form of tables only
Boot 1994	Randomized controlled trial	GP consultations	Consultations 6 weeks Int 54/107 (51%) Con 39/60 (65%) Absolute change=-14% Relative % change=-22% Reported p=0.1 (chisq)
Brantley 1986	Controlled before-after study	GP consultations	FP visits

PCP consultations

Study	Study design	Outcomes	Results
			12m pre treatment Int 9.14 (8.59) (n=21) Con 5.52 (4.25) (n=21) 12 months post-treatment Int 5.95 (6.26) (n=21) Con 4.38 (3.35) (n=21) Absolute change=1.57 Relative % change=36% Absolute change from baseline Int -3.19 Con -1.14 Difference in absolute change=-2.05 Int greater decrease than con (reported z=-1.891, p<0.05)
Brouwers 2006	Randomized controlled trial	GP consultations	GP consultations Post treatment Int 2.4 (2.6) (n=98) Con 2.3 (2.3) (n=96) Absolute change post 0.1 Relative % change 4.3 GP surgery contacts Post treatment Int 5 (5.1) (n=96) Con 5.7 (3.3) (n=96) Absolute change post -0.7 Relative % change -12.3 GP telephone contacts Post treatment Int 0.7 (1.1) (n=96) Con 0.6 (1.3) (n=96) Absolute change post 0.1 Relative % change 16.7 GP home contacts Post treatment 0 (0.2) (n=96) Con 0 (0.5) (n=96) Absolute change post 0 Relative % change NA GP minor surgery contacts Post treatment Int 0.5 (0.8) (n=96) Con 0.5 (1) (n=96) Absolute change post 0 Relative % change 0.0 GP prescription contacts Post treatment Int 2.6 (4.1) (n=96) Con 3.3 (4.6) (n=96) Absolute change post -0.7 Relative % change -21.2
Bruce 1998	Controlled before-after study	GP consultations	GP mental health Pre treatment Int 1.6 (n=16) Con 3.3 (n=11) Post treatment Int 0.4 (n=16) Con 2.3 (n=11) Absolute change post -1.9 Relative % change -82.6 Absolute change from baseline Int -1.2, Con -1 Difference in absolute change from baseline -0.2 p<0.05 GP physical health Pre treatment Int 3 (n=16) Con 3.2 (n=11) Post treatment Int 3.8 (n=16) Con 3.6 (n=11)

PCP consultations

Study	Study design	Outcomes	Results
			Absolute change post 0.2 Relative % change 5.6 Absolute change from baseline Int 0.8, Con 0.4 Difference in absolute change from baseline 0.4 GP other Pre treatment Int 3.6 (n=16) Con 1.8 (n=11) Post treatment Int 2.8 (n=16) Con 1.5 (n=11) Absolute change post 1.3 Relative % change 86.7 Absolute change from baseline Int -0.8, Con -0.3 Difference in absolute change from baseline -0.5 Practice nurse Pre treatment Int 14.8 (n=16) Con 8.1 (n=11) Post treatment Int 18.4 (n=16) Con 3.6 (n=11) Absolute change post 4.8 Relative % change 35.3 Absolute change from baseline Int 3.6 Con 5.5 Difference in absolute change from baseline-1.9 Total GP Pre treatment Int 8.43 (n=16) Con 8.36 (n=11) Post treatment Int 6.93 (n=16) Con 7.73 (n=11) Absolute change post -0.8 Relative % change -10.3 Absolute change from baseline Int -1.5, Con -0.63 Difference in absolute change from baseline -0.87
Catalan 1991	Randomized controlled trial	GP consultations	Median consultations 4 weeks Int 3 (n=21) Con 2 (n=26) 5-10 weeks Int 2 (n=21) Con 3 (n=26) 11-28 weeks Int 1 (n=21) Con 3 (n=26)
Corney 1984	Randomized controlled trial	GP consultations	Note: No data presented although stated that no significant differences were found 12 months post treatment
Corney 2003	Randomized controlled trial	GP consultations	GP consultation 6 months Pre treatment Int 97.8% (n=91) Con 97.8% (n=89) Post treatment Int 92.7% (n=82) Con 98.7% (n=79) Absolute change Post treatment-6 Relative % change -6.1 Absolute change from baseline Int -5.1, Con 0.9 Difference in absolute change from baseline -6

PCP consultations

Study	Study design	Outcomes	Results
			PN consultation 6 months Pre treatment Int 48.4% (n=91) Con 57.3 (n=89) Post treatment Int 42.7% (n=82) Con 39.2% (n=79) Absolute change Post treatment 3.5 Relative % change 8.9 Absolute change from baseline Int -5.7, Con -18.1 Difference in absolute change from baseline 12.4 GP consultation 12 months Pre treatment Int 97.8% (n=91) Con 97.8% (n=89) Post treatment Int 90.7% (n=75) Con 95.6% (n=68) Absolute change Post treatment -4.9 Relative % change -5.1 Absolute change from baseline Int -7.1, Con -2.2 Difference in absolute change from baseline -4.9 PN consultation 12 months Pre treatment Int 48.4% (n=91) Con 57.3% (n=89) Post treatment Int 34.7% (n=75) Con 35.3% (n=68) Absolute change Post treatment -0.6 Relative % change -1.7 Absolute change from baseline Int -13.7, Con -22 Difference in absolute change from baseline 8.3
Earll 1982	Randomized controlled trial	GP consultations	GP consultations Treatment Int 3.4 Con 2.8 Absolute change=0.6 Relative % change=21% Reported n.s. 7m follow up Int 5.6 Con 5.2 Absolute change=0.4 Relative % change=8% Reported n.s.
Ginsberg 1984	Randomized controlled trial	GP consultations and costs of consultations	Consultations 12 months pre-treatment Int 5.7 (n=19) Con 6.4 (n=23) 12 months post-treatment Int 4.4 (n=19) Con 7.0 (n=23) Absolute change=-2.6 Relative % change=-37% Absolute change from baseline Int -1.3 Con 0.6 Difference in absolute change from baseline=-1.9 (no sds or tests reported) Home visits 12 months pre-treatment Int 0.14 (n=19) Con 0.18 (n=23)

PCP consultations

Study	Study design	Outcomes	Results
			12 months post-treatment Int 0.0 (n=19) Con 0.04 (n=23) Absolute change=-0.04 Relative % change=-100% Absolute change from baseline Int -0.14 Con -0.14 Difference in absolute change from baseline=0 (no sds or tests reported) Costs of GP visits 12 months pre-treatment Int £8.00 (n=22) Con £9.00 (n=26) 12 months post treatment Int £6.27 (n=22) Con £9.10 (n=26) Absolute change=-2.83 Relative % change=--31% Absolute change from baseline Int -1.73 Con 0.1 Difference in absolute change from baseline=-1.83
Gournay 1995	Randomized controlled trial	GP consultations	Consultations 6 months pre-treatment Int 4.37 (3.46) (n=53?) Con 5.30 (4.01) (n=39) 6 months post-treatment Int 3.34 (2.93) (n=53?) Con 3.04 (2.84) (n=39) Absolute change=-0.3 Relative % change=-10% Absolute change from baseline Int-1.03 Con -2.26 Difference in absolute change from baseline=1.23 Authors reported that reduction in control significant over time (p<0.05), n.s. between int and con
Harvey 1998	Randomized controlled trial	GP consultations and costs of consultations	Mean GP time 4 months Int 0.63 hours Con 1.50 hours Absolute change=-0.87 Relative % change=-58% (no s.d. or tests reported) Costs of GP time Int £15.75 Con £28.75 Absolute change=-£13 Relative % change=-45%
Kendrick 2005a	Randomized controlled trial	GP consultations and costs of consultations	GP surgery consultations 26 weeks Post treatment Int 3.94 (3.22) (n=62) Con 4.39 (3.67) (n=51) Absolute change Post treatment -0.45 Relative % change -10.3 GP surgery consultations costs 26 weeks Post treatment Int 81 (67) (n=62) Con 91 (76) (n=51) Absolute change Post treatment -10 Relative % change -11.0 Home visits 26 weeks Post treatment Int 0.05 (0.28) (n=62) Con 0.04 (0.2) (n=51) Absolute change Post treatment 0.01 Relative % change 25.0

PCP consultations

Study	Study design	Outcomes	Results
			Home visits costs 26 weeks Post treatment Int 3 (18) (n=62) Con 3 (12) (n=51) Absolute change Post treatment 0 Relative % change 0.0 CMHN telephone consultations 26 weeks Post treatment Int 0.63(1.76) (n=62) Con 0.27 (0.69) (n=51) Absolute change Post treatment 0.36 Relative % change 133.3 Telephone consultations costs 26 weeks Post treatment Int 15 (42) (n=62) Con 7 (16) (n=51) Absolute change Post treatment 8 Relative % change 114.3 PN surgery consultations costs 26 weeks Post treatment Int 0.4 (0.73) (n=62) Con 0.48 (0.7) (n=51) Absolute change Post treatment -0.08 Relative % change -16.7 PN surgery consultations costs 26 weeks Post treatment Int 4 (8) (n=62) Con 5 (7) (n=51) Absolute change Post treatment -1 Relative % change -20.0
Kendrick 2005b	Randomized controlled trial	GP consultations and costs of consultations	GP surgery consultations 26 weeks Post treatment Int 2.72(2.14) (n=71) Con 4.39 (3.67) (n=51) Absolute change Post treatment -1.67 Relative % change -38.0 GP surgery consultations costs 26 weeks Post treatment Int 56 (44) (n=71) Con 91(76) (n=51) Absolute change Post treatment -35 Relative % change -38.5 Home visits 26 weeks Post treatment Int 0.11(0.65) (n=71) Con 0.04 (0.2) (n=51) Absolute change Post treatment 0.07 Relative % change 175.0 Home visits costs 26 weeks Post treatment Int 7 (41) (n=71) Con 3 (12) (n=51) Absolute change Post treatment 4 Relative % change 133.3 Telephone consultations 26 weeks Post treatment Int 0.49(1.58) (n=71) Con 0.27 (0.69) (n=51) Absolute change Post treatment 0.22 Relative % change 81.5 Telephone consultations costs 26 weeks

Study	Study design	PCP consultations Outcomes	Results
			Post treatment Int 12 (38) (n=71) Con 7 (16) (n=51) Absolute change Post treatment 5 Relative % change 71.4 PN surgery consultations costs 26 weeks Post treatment Int 0.56(1.08) (n=71) Con 0.48 (0.7) (n=51) Absolute change Post treatment 0.08 Relative % change 16.7 PN surgery consultations costs 26 weeks Post treatment Int 6 (11) (n=71) Con 5 (7) (n=51) Absolute change Post treatment 1 Relative % change 20.0
King 2000a	Randomized controlled trial	GP consultations and costs of consultations	GP surgery 12 months Post treatment Int 6.48 (4.6) (n=63) Con 9.12 (5.1) (n=67) Absolute change post -2.64 Relative % change -28.9 GP home visits 12 months Post treatment Int 0.03 (0.18) (n=63) Con 0.05 (0.27) (n=67) Absolute change post -0.02 Relative % change -40.0 PN 12 months Post treatment Int 0.69 (0.95) (n=63) Con 0.53 (1.1) (n=67) Absolute change post 0.16 Relative % change 30.2
King 2000b	Randomized controlled trial	GP consultations and costs of consultations	GP surgery 12 months Post treatment Int 7.71 (6.6) (n=67) Con 9.12 (5.1) (n=67) Absolute change post -1.41 Relative % change -15.5 GP home visits 12 months Post treatment Int 0.04 (0.27) (n=67) Con 0.05 (0.27) (n=67) Absolute change post -0.01 Relative % change -20.0 PN 12 months Post treatment Int 0.41 (0.68) (n=67) Con 0.53 (1.1) (n=67) Absolute change post -0.12 Relative % change -22.6
Lave 1998	Randomized controlled trial	GP consultations and costs of consultations	Non protocol consultations 12 months Post treatment Int 4.7(4.5) (n=93) Con 6 (5) (n=92) Absolute change post -1.3 Relative % change -21.7 Non protocol consultations costs Post treatment Int 308.04 (353.2) (n=93) Con 553.2 (490.48) (n=92) Absolute change post -245.16 Relative % change -44.3
Lyon 1993	Controlled before-after study	GP consultations	GP consultations

Study	Study design	PCP consultations Outcomes	Results
			3 months pre-treatment Int 8.6 (n=38) Con 9.1 (n=33) 3 months post-treatment Int 4.6 (n=38) Con 7.8 (n=33) Absolute change=-3.2 Relative % change=-41% Absolute change from baseline Int -4.0 Con -1.3 Differences in pre-post change=-2.7 No tests reported
Martin 1985	Controlled before-after study	GP consultations	GP consultations 12 months pre-treatment Int 7.8 (n=87) Con 3.4 (n=87) 12 months post-treatment Int 7.4 (n=87) Con 2.6 (n=87) Absolute change=4.8 Relative % change=185% Absolute change from baseline Int -0.4 Con -0.8 Difference in pre-post change=0.4 No tests reported
Mynors-Wallis 1997	Randomized controlled trial	GP consultations	GP consultations During treatment Int 2.2 (1.8) (n=40) Con 2.3 (1.5) (n=30) Absolute change=-0.1 Relative % change=-4% Reported p=0.844 4 months Int 2.8 (2.9) (n=40) Con 2.9 (2.9) (n=30) Absolute change=-0.1 Relative % change=-4% Reported p=0.975 Treatment plus follow up combined Int 5.0 (4.1) (n=40) Con 5.1 (3.7) (n=30) Absolute change=-0.1 Relative % change=-2% Reported p=0.914 Cost of consultations During treatment Int £28.1 (22.9) (n=40) Con £29.3 (19.2) (n=30) Absolute change=-£1.2 Relative % change=-4% p=0.844 Cost of consultations 4 months Int £36.2 (37.7) (n=40) Con £36.5 (37.5) (n=30) Absolute change=-£0.3 Relative % change=-1% p=0.975 Treatment and 4 months combined Int £63.9 (52.0) (n=40) Con £65.2 (46.9) (n=30) Absolute change=-£1.3 Relative % change=-2% p=0.914
Richards 2003	Randomized controlled trial	GP consultations and costs of consultations	GP consultations 12 months Post treatment Int 5.02 (2.67) (n=47) Con 4.65 (3.15) (n=40) Absolute change Post treatment 0.37 Relative % change 8.0

PCP consultations			
Study	**Study design**	**Outcomes**	**Results**
			GP consultation costs 12 months Post treatment Int 57.45 (43.87) (n=47) Con 84.6 (55.92) (n=40) Absolute change Post treatment -27.15 Relative % change -32.1 Mean difference -27.15, 95% CI -48.44 to 5.87, p=0.013
Robson 1984	Randomized controlled trial	GP consultations	Consultations 10 weeks to 6 months Int (1-2) 35 (3-4) 20 (5+) 22 (n=77) Con (1-2) 60 (3-4) 40 (5+) 30 (n=130) Reported p=0.0008 by chisq test
Spurgeon 2007	Controlled before-after study	GP consultations	GP consultations 12 months Pre treatment Int 52.9 Con 42.18 Post treatment Int 42.5 Con 49.16 Absolute change post -6.66 Relative % change -13.5 Absolute change from baseline Int -10.4, Con 6.98 Difference in absolute change from baseline -17.38 Home visits 12 months Pre treatment Int 0.5 Con 1.9 Post treatment Int 0.48 Con 1.86 Absolute change post -1.38 Relative % change -74.2 Absolute change from baseline Int -0.02 Con -0.04 Difference in absolute change from baseline 0.02
Stanton 1998	Randomized controlled trial	GP consultations	Consultations 6 months Int 0-2 (30%) 3-4 (22%) 5+ (35%) Missing (13%) (n=23) Con 0-2 (46%) 3-4 (25%) 5+ (12%) Missing (17%) (n=24) No tests reported
Sumathipala 2000	Randomized controlled trial	GP consultations	Visits (adjusted means) 6 months Pre treatment Int 6.3 (4) Con 7.7(6.3) Post treatment (adjusted) Int 3.1 (n=34) Con 7.9 (n=34) Absolute change post -4.8 Relative % change -60.8 Absolute change from baseline Int -3.2, Con 0.2 Difference in absolute change from baseline -3.4 Difference in means 6.3 (95% CI 1.8 to 11.0, p<0.001)
Teasdale 1984	Randomized controlled trial	GP consultations	Consultations During treatment Int 0.51 (n=17) Con 1.07 (n=17) Absolute change=-0.56 Relative % change=-52% Reported t=2.11, p<0.05 3 months Int 0.41 (n=17) Con 0.41 (n=17) Absolute change=0 Relative % change=0%

PCP consultations			
Study	**Study design**	**Outcomes**	**Results**
			No s.d.s or tests reported

Analysis 1.6. Comparison 1 Direct effects, Outcome 6 PCP prescribing.

PCP prescribing			
Study	**Study design**	**Outcomes**	**Results**
PCP prescribing - psychotropics			
Ashurst 1983	Randomized controlled trial	Psychotropic prescribing	% on tranquilisers 12 months post treatment Int 14.5% (n=62) Con 31.9% (n=72) Absolute change=-17.4% Relative % change=-55% Reported chisq=4.65, df=1, p=0.03 % on antidepressants 12 months post treatment Int 17.1% (n=41) Con 18.2% (n=55) Absolute change=-1.1% Relative % change=-6% Reported chisq=0, df=1, p=1.0
Ashworth 2000	Controlled before-after study	Psychotropic prescribing	Change in medication 1 year Pre treatment Int 30 (n=30) Con 30 (n=30) Post treatment Int 14 (n=30) Con 29 (n=30) Absolute change post -15 Relative % change -51.7 Absolute change from baseline Int -16, Con -1 Difference in absolute change from baseline -15 Change in medication 2 years Pre Int 27 (n=27) Con 27 (n=27) Post treatment Int 16 (n=27) Con 23 (n=27) Absolute change post -7 Relative % change -30.4 Absolute change from baseline Int -11, Con -4 Difference in absolute change from baseline -7 Change in medication 1 year comparison 2 Pre treatment Int 30 (n=75) Con 0 (n=75) Post treatment Int 24 (n=75) Con 0 (n=75) Absolute change post 24 Relative % change 0 Absolute change from baseline Int -6, Con 0 Difference in absolute change from baseline -6 Change in medication 2 years comparison 2 Pre treatment Int 24 (n=75) Con 0 (n=75) Post treatment

PCP prescribing

Study	Study design	Outcomes	Results
			Int 27 (n=71) Con 4 (n=63) Absolute change post 23 Relative % change, 575.0 Absolute change from baseline Int 3, Con 4, Difference in absolute change from baseline -1
Blakey 1986	Controlled before-after study	Psychotropic prescribing	Note: Data presented in form of tables only
Boot 1994	Randomized controlled trial	Psychotropic prescribing	Overall psychotropic prescriptions 6 weeks Int: 17/107 (16%) Con: 19/60 (32%) Absolute change=-16% Relative % change=-50% Reported chisq=4.8, df=1, p=0.029 Antidepressants Int: 10/107 (9%) Con: 14/60 (23%) Absolute change=-14% Relative % change=-61% Reported chisq=5, df=1, p=0.02 Anxiolytic prescriptions Int: 6 (9%) Con: 3 (8%) Absolute change=1% Relative % change=13% Reported Fisher's exact p=0.28
Brodaty 1983	Randomized controlled trial	Psychotropic prescribing	Psychotropics Pre-treatment Int 0.83 (0.71) (n=18) Con 0.50 (0.89) (n=20) No test reported Post-treatment Int 0.94 (0.87) Con 0.50 (0.69) Absolute change=0.44 Relative % change=88% Absolute change from baseline Int 0.11 Con 0.0 Difference in absolute change in baseline=0.11 No test reported 12 month Int 0.75 (0.86) Con 0.40 (0.60) Absolute change=0.35 Relative % change=88% Absolute change from baseline Int -0.08 Con -0.10 Difference in absolute change in baseline=0.02 No test reported
Brouwers 2006	Randomized controlled trial	Psychotropic prescribing	Prescribed psychotropic 18 months Post treatment Int 18.4% (n=98) Con 21.9% (n=96) Absolute change post -3.5 Relative % change -16.0 Psychotropic medication prescription Post treatment Int 1.1 (3.9) (n=96) Con 1.4 (4.3) (n=96) Absolute change post -0.3 Relative % change -21.4
Catalan 1991	Randomized controlled trial	Psychotropic prescribing	Prescriptions (absolute numbers) 5-10 weeks Int 1 (n=21) (5%) Con 5 (n=26) (19%)

PCP prescribing

Study	Study design	Outcomes	Results
			Absolute change=-14% Relative % change=-74% 11-28 weeks Int 0 (n=21) (0%) Con 4 (n=26) (15%) Absolute change=-15% Relative % change=-100% No significance tests reported
Corney 1984	Randomized controlled trial	Psychotropic prescribing	Psychotropic prescribing Pre-treatment Int 80.5% (n=41) Con 82.1% (n=39) 6 months Int 22% (9/41) Con 31% (12/39) Absolute change=-9% Relative % change=-29% Absolute change from baseline Int -58.5% Con -51.1% Difference in absolute change from baseline=-7% Reported n.s. Time on psychotropic drugs Int None (19.5%) 1 month (39.0%) 2-3 months (14.6%) 4-6 months (26.8%) (n=41) Con None (17.9%), 1 month (38.5%), 2-3 months (15.4%), 4-6 months(28.2%) (n=39)
Corney 2003	Randomized controlled trial	Psychotropic prescribing	Mental health medication 12 months (data from page 46, column 1) Pre treatment Int 50% (n=90) Con 33.7% (n=89) 6 months Int 42.7% (n=82) Con 45.6% (n=79) Absolute change post -2.9 Relative % change -6.4 Absolute change from baseline Int -7.3, Con 11.9 Difference in absolute change from baseline -19.2 12 months Int 40.0% (n=75) Con 38.2% (n=68) Absolute change post 1.8 Relative % change 4.7 Absolute change from baseline Int -10.0, Con 4.5 Difference in absolute change from baseline -14.5 Mental health medication costs 6 months Pre treatment Int 11 (24) Con 16 (32) Post treatment Int 41 (38) Con 40 (29) Absolute change post 1 Relative % change 2.5 Absolute change from baseline Int 30, Con 24 Difference in absolute change from baseline 6 Mental health medication costs 12 months Pre treatment Int 11 (24) Con 16 (32) Post treatment Int 50 (54) Con 66 (77) Absolute change post -16

PCP prescribing

Study	Study design	Outcomes	Results
			Relative % change -24.2 Absolute change from baseline Int 39, Con 50 Difference in absolute change from baseline -11
Earll 1982	Randomized controlled trial	Psychotropic prescribing	Psychotropic prescriptions Post-treatment Int 39% (n=23) Con 74% (n=19) Absolute change=-35% Relative % change=-47% Reported p<0.05 7 month follow up Int 65% (n=23) Con 74% (n=19) Absolute change=-9% Relative % change=-12% Reported n.s.
Gournay 1995	Randomized controlled trial	Psychotropic prescribing	Drugs and dispensing Baseline Int 4/49 (8%) Con 3/46 (7%) 24 weeks Int 9/49 (18%) Con 11/46 (24%) Absolute change=-6% Relative % difference=-25% Absolute change from baseline Int 10% Con 17% Difference in absolute change from baseline=-7%
Hemmings 1997	Randomized controlled trial	Psychotropic prescribing	Psychotropics Baseline Int 34/136 (25%) Con 17/52 (33%) 4 months Int 23/114 (20%) Con 13/40 (33%) Absolute change=-13% Relative % change=-39% Absolute change from baseline Int -5% Con 0% Difference in absolute change in baseline =-5% Reported chisq=2.9, df=1, p=0.09 8 months Int 11/76 (15%) Con 5/24 (21%) Absolute change=-6% Relative % change=-29% Absolute change from baseline Int -10% Con -12% Difference in absolute change in baseline =2% Reported chisq=0.07, df=1, p=0.8
King 2000a	Randomized controlled trial	Psychotropic prescribing	Antidepressants 12 months Post treatment Int 27% (n=63) Con 49.3% (n=67) Absolute change post -22.3 Relative % change -45.2 Minor tranquilisers 12 months Post treatment Int 6.3% (n=63) Con 17.9% (n=67) Absolute change post -11.6 Relative % change -64.8 Beta blockers 12 months Post treatment Int 7.9% (n=63)

Study	Study design	PCP prescribing Outcomes	Results
			Con 4.5% (n=67) Absolute change post 3.4 Relative % change 75.6 Major tranquilisers 12 months Post treatment Int 0% (n=63) Con 0% (n=67) Absolute change post 0 Relative % change NA Medication costs 12 months Post treatment Int 12.2 (37.5) (n=63) Con 40.7 (77.8) (n=67) Absolute change post -28.5 Relative % change -70.0
King 2000b	Randomized controlled trial	Psychotropic prescribing	Antidepressants 12 months Post treatment Int 29.9% (n=67) Con 49.3% (n=67) Absolute change post -19.4 Relative % change -39.4 Minor tranquilisers 12 months Post treatment Int 14.9% (n=67) Con 17.9% (n=67) Absolute change post -3 Relative % change -16.8 Beta blockers 12 months Post treatment Int 3% (n=67) Con 4.5% (n=67) Absolute change post -1.5 Relative % change -33.3 Major tranquilisers 12 months Post treatment Int 1.5% (n=67) Con 0% (n=67) Absolute change post 1.5 Relative % change NA Medication costs 12 months Post treatment Int 24.1(54.2) (n=67) Con 40.7 (77.8) (n=67) Absolute change post -16.6 Relative % change -40.8
Lyon 1993	Controlled before-after study	Psychotropic prescribing	Tranquilisers (numbers of patients) 3m pre-treatment Int 6/38 (16%) Con 7/33 (21%) 3 months post treatment Int 3/38 (8%) Con 6/33 (18%) Absolute change=-10% Relative % change=-56% Absolute change from baseline Int -8% Con -3% Difference in absolute change from baseline=-5% Antidepressants Pre-treatment Int 3/38 (8%) Con 0/33 (0%) 3 months post-treatment Int 4/38 (11%) Con 8/33 (24%) Absolute change=-13% Relative % change=-54%

PCP prescribing

Study	Study design	Outcomes	Results
			Absolute change from baseline Int 3% Con 24% Difference in absolute change from baseline=-21%
Martin 1985	Controlled before-after study	Psychotropic prescribing	Psychotropic prescriptions 12 months pre-treatment Int 1.86 Con 0.62 12 months post-treatment Int 2.91 Con 0.64 Absolute change=2.27 Relative % change=355% Absolute change from baseline Int 1.05 Con 0.02 Difference in absolute change from baseline=1.03
Mynors-Wallis 1997	Randomized controlled trial	Psychotropic prescribing	Cost of medications During treatment Int £3.8 (9.0) (n=40) Con £6.8 (11.9) (n=30) Absolute change=-£3.0 Relative % change=-44% Reported p=0.251 Cost of medications 4 months post-treatment Int £2.5 (6.6) (n=40) Con £13.3 (23.3) (n=30) Absolute change=-£10.8 Relative % change=-81% Reported p=0.008 Cost of medications (from entry) Int £6.4 (12.8) (n=40) Con £20.1 (31.7) (n=30) Absolute change=-13.7 Relative % change=-68% Reported p=0.018
Robson 1984	Randomized controlled trial	Psychotropic prescribing	Prescribing (category A - psychotropics) 3 months Int £2.00 Con £4.10 Absolute change=-£2.1 Relative % change=-51% Reported p=0.004 6 months Int £3.77 Con £6.34 Absolute change=-£2.57 Relative % change=-41% Reported p=0.02 12 months Int £5.63 Con £9.69 Absolute change=-£4.06 Relative % change=-42% Reported p=0.01
Stanton 1998	Randomized controlled trial	Psychotropic prescribing	Psychotropics prescribed 6 months Int 0 (65%) 1+ (22%) Missing (13%) (n=23) Con 0 (50%) 1+ (33%) Missing (17%) (n=24) Absolute change=-11% Relative % change=-33% No tests
Teasdale 1984	Randomized controlled trial	Psychotropic prescribing	Antidepressant medication Baseline Int 11/17 (65%) Con 10/17 (59%)

Study	Study design	Outcomes	Results
		PCP prescribing	
			Post-treatment Int (increase) 0 (same) 3 (decrease) 3 (none) 5 (% medication = 6/17=35%) Con (increase) 2 (same) 3 (decrease) 1 (none) 4 (% medication = 6/17=35%) Absolute change=0% Relative % change=0% Absolute change from baseline Int -30% Con -24% Difference in absolute change from baseline=-6% 3 months Int (increase) 0 (same) 4 (decrease) 2 (none) 5 (% medication = 6/17=35%) Con (increase) 1 (same) 4 (decrease) 0 (none) 5 (% medication = 5/17=29%) Absolute change=6% Relative % change=9% Absolute change from baseline Int -30% Con -30% Difference in absolute change from baseline=0 No tests reported
		PCP prescribing - non-psychotropic or combined prescribing	
Brodaty 1983	Randomized controlled trial	Combined prescribing	Total tablet types Pre-treatment Int 3.06 (1.86) (n=18) Con 2.35 (1.76) (n=20) No test reported Post-treatment Int 3.00 (2.03) Con 2.05 (1.57) Absolute change=0.95 Relative % change=46% Absolute change from baseline Int -0.06 Con -0.30 Difference in absolute change from baseline=0.24 No test reported 12 month Int 3.19 (1.91) Con 2.05 (1.99) Absolute change=1.14 Relative % change=56% Absolute change from baseline Int 0.13 Con -0.30 Difference in absolute change from baseline=0.43 No test reported
Brouwers 2006	Randomized controlled trial	Non psychotropic prescribing	Prescribed non-psychotropic 18 months Post treatment Int 60.2% (n=98) Con 50% (n=96) Absolute change post 10.2 Relative % change 20.4 Non-psychotropic medication prescription Post treatment Int 4.4 (7.5) (n=96) Con 3.9 (7.1) (n=96) Absolute change post 0.5 Relative % change 12.8
Corney 2003	Randomized controlled trial	Combined prescribing	Medication 6 months Pre treatment Int 49.5% (n=91) Con 34.8% (n=89) Post treatment Int 42.7% (n=82) Con 45.6% (n=79)

PCP prescribing

Study	Study design	Outcomes	Results
			Absolute change Post treatment -2.9 Relative % change -6.4 Absolute change from baseline Int -6.8, Con 10.8 Difference in absolute change from baseline -17.6 Medication 12 months Pre treatment Int 49.5% (n=91) Con 34.8% (n=89) Post treatment Int 40% (n=75) Con 42.6% (n=68) Absolute change Post treatment-2.6 Relative % change -6.1 Absolute change from baseline Int -9.5, Con 7.8 Difference in absolute change from baseline -17.3
Earll 1982	Randomized controlled trial	Non-psychotropic prescribing	Other medication Post-treatment Int 61% (n=23) Con 42% (n=19) Absolute change=19% Relative % change=45% Reported n.s. 7 months Int 87% (n=23) Con 63% (n=19) Absolute change=24% Relative % change=38% Reported n.s.
Ginsberg 1984	Randomized controlled trial	Combined prescribing	Costs of drugs and dispensing 12 months pre-treatment Int £12.45 (n=22) Con £6.27 (n=26) 12 months post-treatment Int £9.75 (n=22) Con £6.33 (n=26) Absolute change=£3.42 Relative % change=54% Absolute change from baseline Int -£2.7 Con £0.06 Difference in absolute change from baseline=-£2.76 Reported n.s.
Harvey 1998	Randomized controlled trial	Combined prescribing	Mean costs of drugs prescribed Int £10.97 Con £25.38 Absolute change=-£14.41 Relative % change=-57% No s.d. or tests
Kendrick 2005a	Randomized controlled trial	Combined prescribing	Medication costs 26 weeks Post treatment Int 36 (53) (n=62) Con 44 (51) (n=51) Absolute change Post treatment -8 Relative % change -18.2
Kendrick 2005b	Randomized controlled trial	Combined prescribing	Medication costs 26 weeks Post treatment Int 40 (74) (n=71) Con 44(51) (n=51) Absolute change Post treatment -4 Relative % change -9.1
Richards 2003	Randomized controlled trial	Combined prescribing	Medication costs 12 months Post treatment Int 70.79 (127.32) (n=47) Con 109.03 (134.62) (n=40) Absolute change Post treatment -38.24 Relative % change -35.1 Mean difference -38.24,

PCP prescribing

Study	Study design	Outcomes	Results
			95% CI -94.15 to 17.68, p=0.178
Robson 1984	Randomized controlled trial	Non-psychotropic prescribing	Prescribing (category B - nutritional, blood and skin) 3 months Int £0.60 Con £0.60 Absolute change=£0 Relative % change=0 Reported p=0.9 6 months Int £1.13 Con £1.17 Absolute change=-£0.04 Relative % change=-3% Reported p=0.9 12 months Int £2.36 Con £2.03 Absolute change=£0.33 Relative % change=16% Reported p=0.7 Prescribing (category C - all other drugs) 3 months Int £1.90 Con £2.20 Absolute change=-£0.30 Relative % change=-14% Reported p=0.5 6 months Int £4.23 Con £4.61 Absolute change=-£0.38 Relative % change=-8% Reported p=0.7 12 months Int £8.75 Con £9.69 Absolute change=£0.94 Relative % change=-10% Reported p=0.7

Analysis 1.7. Comparison 1 Direct effects, Outcome 7 PCP referrals.

PCP referrals

Study	Study design	Outcomes	Results
		Mental health referrals	
Boot 1994	Randomized controlled trial	Mental health referrals	Referrals 6 weeks Int 4/107 (4%) Con 38/60 (63%) Absolute change=-59% Relative % change=-94% Reported chisq=69.4, df=1, p=0.000
Brouwers 2006	Randomized controlled trial	Mental health referrals	Referred to specialised mental health care Post treatment Int 7% (n=98) Con 35% (n=96) Absolute change post -28 Relative % change -80.0 Social worker contacts Post treatment Int 4.7 (1.1) (n=96) Con 0.9 (2.4) (n=96)

PCP referrals

Study	Study design	Outcomes	Results
			Absolute change post 3.8 Relative % change 422.2 Referrals to psychologist Post treatment Int 0.1 (0.3) (n=96) Con 0.1 (0.3) (n=96) Absolute change post 0 Relative % change 0.0
Catalan 1991	Randomized controlled trial	Mental health referrals	Psychiatric referrals Weeks 11-28 Int 0 (n=21) (0%) Con 5 (n=26) (19%) Absolute change=-19% Relative % change=-100% Fisher's exact p=0.056
Corney 1984	Randomized controlled trial	Mental health referrals	Referrals to psychiatric/psychological services 12 months post-treatment Int 3 (7%) (n=41) Con 3 (8%) (n=39) Absolute change=-1% Relative % change=-13%
Harvey 1998	Randomized controlled trial	Mental health referrals costs	MH referral costs 4 months Int £1.06 to £7.34 Con £9.45 to £26.04 (Range depends on assumptions used to cost referrals) Absolute change=-£8.39 to -£18.70 Relative % change=-89% to -72%
Hemmings 1997	Randomized controlled trial	Mental health referrals	External referral to MH professional 4 months Int 7/114 (6%) Con 26/40 (65%) Absolute change=-59% Relative % change=91% Reported chisq=50.9, df=1, p=0.00
Kendrick 2005a	Randomized controlled trial	Mental health referrals and costs	Practice counsellor referrals 26 weeks Post treatment Int 0.11(0.89) (n=62) Con 0.57 (1.8) (n=51) Absolute change Post treatment -0.46 Relative % change -80.7 Practice counsellor referrals costs 26 weeks Post treatment Int 4 (29) (n=62) Con 18 (57) (n=51) Absolute change Post treatment -14 Relative % change -77.8 Social worker referrals 26 weeks Post treatment Int 0.18(1.17) (n=62) Con 0.16 (0.99) (n=51) Absolute change Post treatment 0.02 Relative % change 12.5 Social worker referrals costs 26 weeks Post treatment Int 9 (58) (n=62) Con 8 (51) (n=51) Absolute change Post treatment 1 Relative % change 12.5 Psychiatric referrals 26 weeks Post treatment Int 0.1 (0.43) (n=62) Con 0.14 (0.4) (n=51) Absolute change Post treatment -0.04 Relative % change -28.6 Psychiatric referrals costs 26 weeks

PCP referrals

Study	Study design	Outcomes	Results
			Post treatment Int 9 (39) (n=62) Con 12 (36) (n=51) Absolute change Post treatment -3 Relative % change -25.0 Psychologist referrals 26 weeks Post treatment Int 0 (0) (n=62) Con 0.69 (4.48) (n=51) Absolute change Post treatment -0.69 Relative % change -100.0 Psychologist referrals costs 26 weeks Post treatment Int 0 (0) (n=62) Con 20 (130) (n=51) Absolute change Post treatment -20 Relative % change -100.0
Kendrick 2005b	Randomized controlled trial	Mental health referrals and costs	Practice counsellor referrals 26 weeks Post treatment Int 0.21(1.01) (n=71) Con 0.57 (1.8) (n=51) Absolute change Post treatment -0.36 Relative % change-63.2 Practice counsellor referrals costs 26 weeks Post treatment Int 7 (31) (n=71) Con 18 (57) (n=51) Absolute change Post treatment -11 Relative % change -61.1 Social worker referrals 26 weeks Post treatment Int 0 (0) (n=71) Con 0.16 (0.99) (n=51) Absolute change Post treatment-0.16 Relative % change -100.0 Social worker referrals costs 26 weeks Post treatment Int 0 (0) (n=71) Con 8 (51) (n=51) Absolute change Post treatment -8 Relative % change -100.0 Psychiatric referrals 26 weeks Post treatment Int 0.13 (0.51) (n=71) Con 0.14 (0.4) (n=51) Absolute change Post treatment -0.01 Relative % change -7.1 Psychiatric referrals costs 26 weeks Post treatment Int 11 (45) (n=71) Con 12 (36) (n=51) Absolute change Post treatment -1 Relative % change -8.3 Psychologist referrals 26 weeks Post treatment Int 0.1 (0.61) (n=71) Con 0.69 (4.48) (n=51) Absolute change Post treatment -0.59 Relative % change -85.5 Psychologist referrals costs 26 weeks Post treatment Int 3 (18) (n=71) Con 20 (130) (n=51) Absolute change Post treatment -17 Relative % change -85.0
King 2000a	Randomized controlled trial	Mental health referrals	Mental health referrals 12 months

Study	Study design	Outcomes	Results
		PCP referrals	
			Post treatment Int 0.22 (0.52) (n=63) Con 0.52 (0.88) (n=67) Absolute change post -0.3 Relative % change -57.7
King 2000b	Randomized controlled trial	Mental health referrals	Mental health referrals 12 months Post treatment Int 0.25 (0.59) (n=67) Con 0.52 (0.88) (n=67) Absolute change post -0.27 Relative % change -51.9
Lambert 2007	Randomized controlled trial	Mental health referrals	Mental health referrals (3 months before 20 week FU) Pre Int 3.5% (n=57) Con 13.3% (n=60) Post treatment Int 3.5% (n=57) Con 5% (n=60) Absolute change post -1.5 Relative % change -30.0 Absolute change from baseline Int 0, Con -8.3 Difference in absolute change from baseline 8.3 Mental health referrals (3 months before 10 month FU) Pre Int 3.5% (n=57) Con 13.3% (n=60) Post treatment Int 0% (n=57) Con 11.7% (n=60) Absolute change post -11.7 Relative % change -100.0 Absolute change from baseline Int -3.5, Con -1.6 Difference in absolute change from baseline -1.9
Richards 2003	Randomized controlled trial	Mental health referral costs	Mental health worker costs Post treatment Int 1.27 (6.12) (n=47) Con 0 (0) (n=40) Absolute change Post treatment 1.27 Relative % change NA Mean difference 1.28, 95% CI -0.65 to 3.20, p=0.191 Outpatient mental health costs 12 months Post treatment Int 27.26 (132.67) (n=47) Con 14.55 (57.75) (n=40) Absolute change Post treatment 12.71 Relative % change 87.4 Mean difference 12.71, 95% CI -32.56 to 57.99, p=0.578 Counselling costs 12 months Post treatment Int 13.26 (64.91) (n=47) Con 23.25 (71.73) (n=40) Absolute change Post treatment -9.99 Relative % change -43.0 Mean difference -9.99, 95% CI -39.84 to 19.84, p=0.509
Teasdale 1984	Randomized controlled trial	Mental health referrals	Referrals to psychiatry Int 1/17 (6%) Con 5/17 (29%) Absolute change=-23% Relative % change=-79% No tests reported
		Non-mental health referrals	

PCP referrals

Study	Study design	Outcomes	Results
Brantley 1986	Controlled before-after study	Non-mental health referrals	Speciality clinics 12 months pre-treatment Int 1.33 (2.29) (n=21) Con 0.48 (0.87) (n=21) 12 months post-treatment Int 0.57 (1.03) Con 0.48 (1.33) Absolute change=0.09 Relative % change=19% Absolute change from baseline Int -0.76 Con 0 Difference in absolute change from baseline=-0.76 Emergency room visits 12 months pre-treatment Int 0.43 (0.97) (n=21) Con 0.67 (1.10) (n=21) 12 months post-treatment Int 0.33 (0.64) Con 0.28 (0.56) Absolute change=0.05 Relative % change=18% Absolute change from baseline Int -0.10 Con -0.39 Difference in absolute change from baseline=0.29 Hospitalisations 12 months pre-treatment Int 0.48 (1.12) (n=21) Con 0.09 (0.30) (n=21) 12 months post-treatment Int 0.09 (0.03) Con 0.00 (0.00) Absolute change=0.09 Relative % change=NA Absolute change from baseline Int -0.39 Con -0.09 Difference in absolute change from baseline=-0.30
Brouwers 2006	Randomized controlled trial	Non mental health referrals	Referrals to medical outpatients Post treatment Int 0.4 (0.8) (n=96) Con 0.5 (0.8) (n=96) Absolute change post -0.1 Relative % change -20.0 Referrals to physical therapist Post treatment Int 0.3 (0.6) (n=96) Con 0.3 (0.6) (n=96) Absolute change post 0 Relative % change 0.0 Referrals to mensendieck physical therapist Post treatment Int 0 (0.1) (n=96) Con 0.1 (0.2) (n=96) Absolute change post -0.1 Relative % change -100.0 Referrals to nutritionist Post treatment Int 0 (0.1) (n=96) Con 0 (0.1) (n=96) Absolute change post 0 Relative % change NA Referrals to haptonomist Post treatment Int 0 (0.2) (n=96) Con 0 (0.2) (n=96)

Study	Study design	Outcomes	Results
			Absolute change post 0 Relative % change NA Referrals to lab research Post treatment Int 1.1 (1.8) (n=96) Con 1.3 (2.1) (n=96) Absolute change post -0.2 Relative % change -15.4 Referrals to X ray Post treatment Int 0.2 (0.6) (n=96) Con 0.2 (0.5) (n=96) Absolute change post 0 Relative % change 0.0
King 2000a	Randomized controlled trial	Non-mental health referrals	Non mental health referrals 12 months Post treatment Int 0.92 (1.26) (n=63) Con 0.93 (1.28) (n=67) Absolute change post -0.01 Relative % change -1.1
King 2000b	Randomized controlled trial	Non-mental health referrals	Non mental health referrals 12 months Post treatment Int 0.93 (1.13) (n=67) Con 0.93 (1.28) (n=67) Absolute change post 0 Relative % change 0.0
Lambert 2007	Randomized controlled trial	Non-mental health referrals	Non-mental health referrals (3 months before 20 week FU) Pre Int 12.3% (n=57) Con 6.7% (n=60) Post treatment Int 3.5% (n=57) Con 5% (n=60) Absolute change post -1.5 Relative % change -30.0 Absolute change from baseline Int -8.8, Con -1.7 Difference in absolute change from baseline -7.1 Non-mental health referrals (3 months before 10 month FU) Pre Int 12.3% (n=57) Con 6.7% (n=60) Post treatment Int 10.5% (n=57) Con 16.7% (n=60) Absolute change post -6.2 Relative % change -37.1 Absolute change from baseline Int -1.8, Con 10 Difference in absolute change from baseline -11.8
		All referrals	
Earll 1982	Randomized controlled trial	All referrals	OP appointments Post treatment Int 0.52 Con 0.58 Absolute change=-0.06 Relative % change=-10% Reported n.s. 7 months Int 0.83 Con 1.32 Absolute change=-0.49 Relative % change=-37% Reported n.s. Hospital inpatient admissions Post treatment

PCP referrals

Study	Study design	Outcomes	Results
			Int 0/23 (0%) Con 2/19 (11%) Absolute change=-11% Relative % change=-100% No test reported 7 months Int 1/23 (4%) Con 4/19 (21%) Absolute change=-17% Relative % change=-81% No test reported
Harvey 1998	Randomized controlled trial	All referrals	Referrals 4 months Int 0.07 Con 0.22 Absolute change=-0.15 Relative % change=-68%
Kendrick 2005a	Randomized controlled trial	All referrals and costs	Outpatient referrals 26 weeks Post treatment Int 0.05 (0.22) (n=62) Con 0 (0) (n=51) Absolute change Post treatment 0.05 Relative % change 0 Outpatient referrals costs 26 weeks Post treatment Int 6 (26) (n=62) Con (0) (0) (n=51) Absolute change Post treatment 6 Relative % change NA
Kendrick 2005b	Randomized controlled trial	All referrals and costs	Outpatient referrals 26 weeks Post treatment Int 0.07 (0.49) (n=71) Con 0 (0) (n=51) Absolute change Post treatment 0.07 Relative % change NA Outpatient referrals costs 26 weeks Post treatment Int 8 (55) (n=71) Con 0 (0) (n=51) Absolute change Post treatment 8 Relative % change NA
King 2000a	Randomized controlled trial	All referrals	Outpatient costs 12 months Post treatment Int 105.9 (251.9) (n=63) Con 201.2 (344.9) (n=67) Absolute change post -95.3 Relative % change -47.4
King 2000b	Randomized controlled trial	All referrals	Outpatient costs 12 months Post treatment Int 90.3 (175.8) (n=67) Con 201.2 (344.9) (n=67) Absolute change post -110.9 Relative % change -55.1
Spurgeon 2007	Controlled-before after study	All referrals	Referrals 12 months Pre treatment Int 16.8 Con 14.92 Post treatment Int 16.29 Con 17.12 Absolute change post -0.83 Relative % change -4.8 Absolute change from baseline Int -0.51 Con 2.2 Difference in absolute change from baseline -2.71 Tests and investigations 12 months Pre treatment Int 11.35

PCP referrals

Study	Study design	Outcomes	Results
			Con 13.9 Post treatment Int 8.6 Con 16.62 Absolute change post -8.02 Relative % change -48.3 Absolute change from baseline Int -2.75 Con 2.72 Difference in absolute change from baseline -5.47
Stanton 1998	Randomized controlled trial	All referrals	Referrals 6 months Int 0 (61%) 1 (26%) Missing (13%) (n=23) Con 0 (71%) 1 (12%) Missing (17%) (n=24) Absolute change=14% Relative % change=116% No tests reported

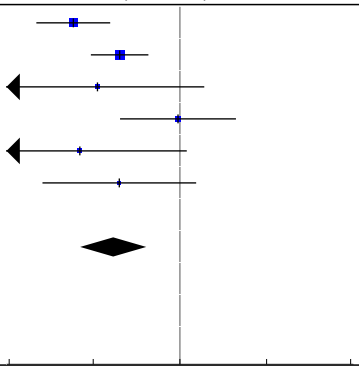
Analysis 1.8. Comparison 1 Direct effects, Outcome 8 Total costs.

Total costs

Study	Study design	Outcomes	Results
Corney 2003	Randomized controlled trial	Primary care total costs	Primary care costs 6 months Pre treatment Int 101 (87) (n=90) Con 113 (104) (n=89) Post treatment Int 321 (191) (n=82) Con 149 (194) (n=79) Absolute change Post treatment 172 Relative % change 115.4 Absolute change from baseline Int 220, Con 36 Difference in absolute change from baseline 184 Primary care costs 12 months Pre treatment Int 101 (87) (n=90) Con 113 (104) (n=89) Post treatment Int 157 (186) (n=75) Con 174 (215) (n=68) Absolute change Post treatment -17 Relative % change -9.8 Absolute change from baseline Int 56, Con 61 Difference in absolute change from baseline -5
King 2000a	Randomized controlled trial	Primary care total costs	Primary care costs 12 months Post treatment Int 86.6 (59.7) (n=63) Con 118.5 (93.7) (n=67) Absolute change post -31.9 Relative % change -26.9
King 2000b	Randomized controlled trial	Primary care total costs	Primary care costs 12 months Post treatment Int 98.4 (84.5) (n=67) Con 118.5 (93.7) (n=67) Absolute change post -20.1 Relative % change -17.0

Analysis 1.9. Comparison 1 Direct effects, Outcome 9 PCP mental health referrals (sensitivity analysis on quality).

Study or subgroup	Treatment n/N	Control n/N	Risk Ratio M-H, Random, 95% CI	Weight	Risk Ratio M-H, Random, 95% CI
Boot 1994	4/107	38/60		25.61%	0.06[0.02,0.16]
Brouwers 2006	7/98	34/96		29.3%	0.2[0.09,0.43]
Catalan 1991	0/21	5/26		7.62%	0.11[0.01,1.91]
Corney 1984	3/41	3/39		17.44%	0.95[0.2,4.43]
Lambert 2007	0/57	7/60		7.61%	0.07[0,1.2]
Teasdale 1984	1/17	5/17		12.41%	0.2[0.03,1.54]
Total (95% CI)	**341**	**298**		**100%**	**0.17[0.07,0.41]**
Total events: 15 (Treatment), 92 (Control)					
Heterogeneity: Tau²=0.53; Chi²=10.1, df=5(P=0.07); I²=50.51%					
Test for overall effect: Z=3.96(P<0.0001)					



Comparison 2. Indirect effects

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 PCP consultations			Other data	No numeric data
2 Prescribing			Other data	No numeric data
2.1 Psychotropic prescribing			Other data	No numeric data
2.2 Psychotropic and non-psychotropic prescribing			Other data	No numeric data
3 Referrals			Other data	No numeric data
3.1 Mental health referrals			Other data	No numeric data
3.2 Non-mental health referrals			Other data	No numeric data
4 Total costs			Other data	No numeric data

Analysis 2.1. Comparison 2 Indirect effects, Outcome 1 PCP consultations.

		PCP consultations	
Study	**Study design**	**Outcomes**	**Results**
Lester 2007	Randomized controlled trial	GP consultations	GP consultations 12 months Post treatment Int 7.88 (6.46) (n=162) Con 7.69 (6.41) (n=165) Absolute change Post treatment 0.19 Relative % change 2.5 PN consultations 12 months Post treatment Int 1.7 (2.54) (n=162) Con 1.69 (2.66) (n=165) Absolute change Post treatment 0.01

PCP consultations			
Study	**Study design**	**Outcomes**	**Results**
			Relative % change 0.6 Primary care consultation costs 12 months Post treatment Int 261.79 Con 232.21 Absolute change Post treatment 29.58 Relative % change 12.7 Mean difference 29.58, 95% CI -49.07 to 110.51

Analysis 2.2. Comparison 2 Indirect effects, Outcome 2 Prescribing.

Prescribing			
Study	**Study design**	**Outcomes**	**Results**
Psychotropic prescribing			
Baker 1996	Controlled before-after study	Psychotropic prescribing	Anxiolytic/hypnotic prescription 15 months pre and post Reported Group by Time MANOVA p=0.73 (group) p=0.00 (Time) p=0.56 (GroupxTime) Antidepressant prescription 15 months pre and post Reported Group by Time MANOVA p=0.61 (group) p=0.00 (Time) p=0.89 (GroupxTime) Note: Absolute change cannot be calculated (F statistics and graphs only)
Coe 1996	Controlled before-after study	Psychotropic prescribing costs	Hypnotics and anxiolytic spend per patient 12 months pre-treatment Int £0.66 (n=29) Con £0.71 (n=29) 12 months post-treatment Int £0.55 Con £0.55 Absolute change=£0 Relative % change=0% Absolute change from baseline Int -£0.11 Con -£0.16 Difference in absolute change from baseline =£0.05 Reported difference post p=0.6 Antidepressant spend per patient 12 months pre-treatment Int £1.64 (n=29) Con £2.09 (n=29) 12 months post-treatment Int £2.73 Con £2.89 Absolute change=-0.16 Relative % change=-6% Absolute change from baseline Int £1.09 Con £0.80 Difference in absolute change from baseline = £0.29 Reported difference post p=0.07
Pharoah 1996	Controlled before-after study	Psychotropic prescribing	Mean monthly prescription items per 1000 PU 6 months pre-treatment Int 19.93 (n=16) Con 20.71 (n=16) Reported n.s. (Wilcoxon z=1.03, p=0.30) 6 months post-treatment Int 18.97 (n=16)

Prescribing			
Study	**Study design**	**Outcomes**	**Results**
			Con 19.32 (n=16) Absolute change=-0.35 Relative % change=-2% Absolute change from baseline Int -0.96 Con -1.39 Difference in absolute change from baseline=0.43 Reported change post not significant (Wilcoxon z=0.517, p=0.61)
Simpson 2003	Controlled before-after study	Psychotropic prescribing	Median percentage change in drug costs per 1000 PU Antidepressants Int 425 Con 486 Hypnotics Int -9 Con -6 CNS Int 157 Con 165 Median costs per 1000 PU Antidepressants Pre treatment Int 628 Con 647 Post treatment Int 3713 Con 3962 Hypnotics Pre treatment Int 227 Con 219 Post treatment Int 198 Con 188 CNS Pre treatment Int 3320 Con 3178 Post treatment Int 8830 Con 9279 All comparisons NS
Psychotropic and non-psychotropic prescribing			
Lester 2007	Randomized controlled trial	Combined prescribing	Medication costs 12 months Post treatment Int 25.12 Con 40.43 Absolute change Post treatment -15.31 Relative % change -37.9 Mean difference -15.31, 95% CI -48.40 to 13.48

Analysis 2.3. Comparison 2 Indirect effects, Outcome 3 Referrals.

Referrals			
Study	**Study designs**	**Outcomes**	**Results**
Mental health referrals			

Referrals

Study	Study designs	Outcomes	Results
Baker 1996	Controlled before-after study	Short and long-term mental health referrals	Psychiatric OP referrals 12 months pre and post Reported Group by Time MANOVA p=0.57 (group) p=0.00 (Time) p=0.10 (GroupxTime) Psychiatric IP 12 months pre and post Reported Group by Time MANOVA p=0.07 (group) p=0.00 (Time) p=0.94 (GroupxTime) Psychology 12 months pre and post Reported Group by Time MANOVA p=0.07 (group) p=0.00 (Time) p=0.05 (GroupxTime) Greater increase in referrals in intervention practices Group therapy 12 months pre and post Reported Group by Time MANOVA p=0.20 (group) p=0.00 (Time) p=0.69 (GroupxTime) Community OT 12 months pre and post Reported Group by Time MANOVA p=0.78 (group) p=0.00 (Time) p=0.43 (GroupxTime) CPN 12 months pre and post Reported Group by Time MANOVA p=0.60 (group) p=0.00 (Time) p=0.33 (GroupxTime) Note: Absolute change cannot be calculated (ANOVAs and graphs only)
Coe 1996	Controlled before-after study	Long-term mental health referrals	Referral rates to Psychiatry per 1000 12 months pre-treatment Int 6.18 (n=29) Con 4.62 (n=29) 12 months post-treatment Int 5.84 Con 7.61 Absolute change=-1.77 Relative % change=-23% Absolute change from baseline Int -0.34 Con 2.99 Difference in absolute change from baseline= -3.33 Referral to CMHT per 1000 12 months post-treatment Int 7.15 (n=29) Con Post 12.60 (n=29) Absolute change=-5.45 Relative % change=43%
Hunter 1983	Controlled before-after study	Long term mental health referrals	Referrals (new and re-referred) 12 months pre-treatment Int1 6.4 Con1 3.9 12 months post-treatment Int1 6.3 Con1 4.3 Absolute change=2 Relative % change=47% Absolute change from baseline Int -0.1 Con 0.4 Difference in absolute change from baseline=-0.5 24 months post-treatment

Study	Study designs	Outcomes	Results
		Referrals	
			Int1 5.3 Con1 5.4 Absolute change=-0.1 Relative % change=-2% Absolute change from baseline Int -1.1 Con 1.5 Difference in absolute change from baseline=-2.6 Referrals (new and re-referred) 12 months pre-treatment Int2 7.5 Con2 7.5 12 months post-treatment Int2 10.3 Con2 5.6 Absolute change=4.7 Relative % change=84% Absolute change from baseline Int 2.8 Con -1.9 Difference in absolute change from baseline=4.7 Reported p<0.05 difference between Int1 and Con1 pre-test, n.s. at 1 year or two years Reported p<0.05 increase in Int2 from pre to post, P<0.05 decrease in Con2 pre to post.
Lester 2007	Randomized controlled trial	Long term mental health referrals and costs	Counsellor consultations 12 months Post treatment Int 0.06 (0.23) (n=162) Con 0.05 (0.25) (n=165) Absolute change Post treatment 0.01 Relative % change 20.0 Psychiatrist referrals 12 months Post treatment Int 0.19 (0.58) (n=162) Con 0.11 (0.37) (n=165) Absolute change Post treatment 0.08 Relative % change 72.7 CPN referrals 12 months Intervention Post treatment Int 0.07 (0.26) (n=162) Con 0.05 (0.23) (n=165) Absolute change Post treatment 0.02 Relative % change 40.0 CMHT referrals 12 months Post treatment Int 0.06 (0.27) (n=162) Con 0.09 (0.45) (n=165) Absolute change Post treatment -0.03 Relative % change -33.3 Specialist mental health costs 12 months Post treatment Int 34.36 Con 24.2 Absolute change Post treatment 10.16 Relative % change 42.0 Mean difference 10.16, 95% CI -5.61 to 29.52
Tarrier 1983	Controlled before-after study	Long-term mental health referrals	Total referrals 2 years pre-treatment Practice Int 56 Practice Con 159 2 years post-treatment Practice Int 57 Practice Con 215 Absolute change=-158 Relative % change=-74% Absolute change from baseline

Study	Study designs	Outcomes	Results
		Referrals	
			Int 1 Con 56 Differences in absolute change from baseline=-55 2 years pre-treatment Health Centre Int 162 Health Centre Con 144 2 years post-treatment Health Centre Int 203 Health Centre Con 142 Absolute change=61 Relative % change=43% Absolute change from baseline Int 41 Con -2 Differences in pre-post change=43
Walker 1989	Controlled before-after study	Long-term mental health referrals	GP referral rates (calculated from base population) OP referrals Pre-treatment Int 12/9231 (0.13%) Con 9/3125 (0.29%) Post-treatment Int 16/8926 (0.18%) Con 5/2895 (0.17%) Absolute change=0.01 Relative % change=6% Absolute change from baseline Int 0.05% Con -0.12% Difference in absolute change from baseline=0.17% IP referrals Pre-treatment Int 9/9318 (0.10%) Con 6/3117 (0.19%) Post-treatment Int 29/9310 (0.31%) Con 5/3247 (0.15%) Absolute change=0.16% Relative % change=107% Absolute change from baseline Int 0.21% Con -0.04% Difference in absolute change from baseline=0.25%
Wells 1992	Controlled before-after study	Mental health referrals	1982/83 versus 1984-1986 All referrals All referrals chi square=6.79, p<0.01 First referrals chi square=7.65, p<0.01 Re-referrals chi square=0.52, NS Emergency referrals chi square=6.11, p<0.02
		Non-mental health referrals	
Lester 2007	Randomized controlled trial	Non mental health referrals	Non mental health referrals 12 months Post treatment Int 0.94 (1.35) (n=162) Con 1.16 (1.99) (n=165) Absolute change Post treatment -0.22 Relative % change -19.0 Non mental health costs 12 months Post treatment Int 118.69 Con 147.2 Absolute change Post treatment -28.51 Relative % change -19.4 Mean difference -28.51 95% CI -111.30 to 41.97

Analysis 2.4. Comparison 2 Indirect effects, Outcome 4 Total costs.

Total costs			
Study	**Study design**	**Outcomes**	**Results**
Lester 2007	Randomized controlled trial	Total costs	Total costs 12 months Post treatment Int 439.97 Con 444.05 Absolute change Post treatment -4.08 Relative % change -0.9

APPENDICES

Appendix 1. Original Search Strategy

Given the broad range of study designs that are of relevance to Effective Practice and Organisation of Care Group (EPOC) reviews (i.e. RCTs, CBAs and ITSs) and the expectation that data of relevance to the present review might be included in studies with a different primary aim (e.g. those evaluating clinical outcome of management by MHWs), it was decided to use a broad strategy for the identification of studies based on the types of mental health professionals in the primary care setting rather than specific methodological keywords (except when searching specialist mental health databases). The searches described below were therefore of relatively low specificity.

MEDLINE (1966 - 1998), PsycInfo (1984 - 1998) and EMBASE (1980 - 1998) were searched using the following terms:

(family pract* OR general pract* OR primary care OR primary health care)
AND (counsel* OR psychotherap* OR clin* psy* or beh* therap* OR fam* therap* OR group therap* OR psychoanal* OR psychiat* OR cog* therap* OR psychodynam*)

The Cochrane Controlled Trials Register was searched using the following terms:

((primary near care) OR (general near pract*)
OR (fam* near pract*)) AND (counsel* OR psychotherap*
OR (clin* near psy*) OR (beh* near therap*) OR (fam* near therap*)
OR (group near therap*) OR psychoanal* OR psychiat* OR (cog* near therap*) OR psychodynam*)

The EPOC register was searched using the following terms:

primary (near) care (or) general (near) practitioner (or) general (near) practice (or) family (near) practice (or) family (near) practitioner (or) family (near) medicine

and

psychiat* (OR) psycho* (OR) mental* (OR) emot*

The Counselling in Primary Care Trust CounselLit database was searched using the following search terms:

random OR meta OR trial OR effectiveness OR efficacy OR outcome OR control OR evaluation OR review OR comparative

2. The references lists of all relevant studies were searched for further studies.

Searches for the initial review were conducted between 18-22 June 1998. Papers of potential relevance that were identified after this date through means other than electronic database searching were added to the list of studies 'awaiting assessment'.
Given the broad range of study designs that are of relevance to Effective Practice and Organisation of Care Group (EPOC) reviews (i.e. RCTs, CBAs and ITSs) and the expectation that data of relevance to the present review might be included in studies with a different primary aim (e.g. those evaluating clinical outcome of management by MHWs), it was decided to use a broad strategy for the identification of studies based on the types of mental health professionals in the primary care setting rather than specific methodological

(Continued)

keywords (except when searching specialist mental health databases). The searches described below were therefore of relatively low specificity.

MEDLINE (1966 - 1998), PsycInfo (1984 - 1998) and EMBASE (1980 - 1998) were searched using the following terms:

(family pract* OR general pract* OR primary care OR primary health care)
AND (counsel* OR psychotherap* OR clin* psy* or beh* therap* OR fam* therap* OR group therap* OR psychoanal* OR psychiat* OR cog* therap* OR psychodynam*)

The Cochrane Controlled Trials Register was searched using the following terms:

((primary near care) OR (general near pract*)
OR (fam* near pract*)) AND (counsel* OR psychotherap*
OR (clin* near psy*) OR (beh* near therap*) OR (fam* near therap*)
OR (group near therap*) OR psychoanal* OR psychiat* OR (cog* near therap*) OR psychodynam*)

The EPOC register was searched using the following terms:

primary (near) care (or) general (near) practitioner (or) general (near) practice (or) family (near) practice (or) family (near) practitioner (or) family (near) medicine

and

psychiat* (OR) psycho* (OR) mental* (OR) emot*

The Counselling in Primary Care Trust CounselLit database was searched using the following search terms:

random OR meta OR trial OR effectiveness OR efficacy OR outcome OR control OR evaluation OR review OR comparative

2. The references lists of all relevant studies were searched for further studies.

Searches for the initial review were conducted between 18-22 June 1998. Papers of potential relevance that were identified after this date through means other than electronic database searching were added to the list of studies 'awaiting assessment'.

Appendix 2. Search strategies for the updated review

CENTRAL

#1MeSH descriptor Primary Health Care explode all trees
#2MeSH descriptor Physicians, Family explode all trees
#3MeSH descriptor Family Practice explode all trees
#4family near/2 pract*
#5general near/2 pract*
#6primary near/2 care
#7(#1 OR #2 OR #3 OR #4 OR #5 OR #6)
#8counsel*
#9psychotherap*
#10clin* near/2 psy*
#11beh* near/2 therap*
#12group near/2 therap*
#13psychoanal*
#14psychiat*
#15cog* near/2 therap*
#16psychodynam*

(Continued)

#17MeSH descriptor Counseling explode all trees
#18MeSH descriptor Psychotherapy explode all trees
#19MeSH descriptor Psychology, Clinical explode all trees
#20MeSH descriptor Mental Health explode all trees
#21MeSH descriptor Mental Disorders explode all trees
#22(#8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21)
#23(#7 AND #22)
#24(#23), from 1998 to 2007

MEDLINE

1randomized controlled trial.pt.
2controlled clinical trial.pt.
3intervention studies/
4experiment$.tw.
5(time adj series).tw.
6(pre test or pretest or (posttest or post test)).tw.
7random allocation/
8impact.tw.
9intervention?.tw.
10chang$.tw.
11evaluation studies/
12evaluat$.tw.
13effect?.tw.
14comparative studies/
151 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
16Primary Health Care/
17Family Practice/
18(family adj2 pract$).mp.
19(general adj2 pract$).mp.
20(primary adj2 care).mp.
2116 or 17 or 18 or 19 or 20
22counsel$.mp.
23psychotherap$.mp.
24(clin$ adj2 psy$).mp.
25(beh$ adj2 therap$).mp.
26(group adj2 therap$).mp.
27psychoanal$.mp.
28psychiat$.mp.
29(cog$ adj2 therap$).mp.
30psychodynam$.mp.
31Counseling/
32exp Psychotherapy/
33Preventive Psychiatry/ or Community Psychiatry/
34exp Psychology, Clinical/
35exp Mental Health/
36Mental Disorders/
3722 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36
3815 and 21 and 37
39limit 38 to yr="1998 - 2007"

EMBASE

1randomized controlled trial/
2(randomised or randomized).tw.
3experiment$.tw.
4(time adj series).tw.
5(pre test or pretest or post test or posttest).tw.
6impact.tw.
7intervention?.tw.
8chang$.tw.

(Continued)

9evaluat$.tw.
10effect?.tw.
11compar$.tw.
121 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11
13Primary Medical Care/
14exp General Practice/
15(family adj2 pract$).mp.
16(general adj2 pract$).mp.
17(primary adj2 care).mp.
1813 or 14 or 15 or 16 or 17
19counsel$.mp.
20psychotherap$.mp.
21(clin$ adj2 psy$).mp.
22(beh$ adj2 therap$).mp.
23(group adj2 therap$).mp.
24psychoanal$.mp.
25psychiat$.mp.
26(cog$ adj2 therap$).mp.
27psychodynam$.mp.
28exp Counseling/
29exp PSYCHOTHERAPY/
30exp PSYCHIATRY/
31exp Mental Health/
32exp Mental Disease/
3319 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32
3412 and 18 and 33
35limit 34 to yr="1998 - 2007"

CINHAL

1clinical trial/
2(controlled adj (study or trial)).tw.
3(randomised or randomized).tw.
4(random$ adj1 (allocat$ or assign$)).tw.
5exp pretest-posttest design/
6exp quasi-experimental studies/
7comparative studies/
8time series.tw.
9experiment$.tw.
10impact.tw.
11intervention?.tw.
12evaluat$.tw.
13effect?.tw.
1410 or 11 or 12 or 13
15exp Primary Health Care/
16exp Family Practice/
17(family adj2 pract$).mp.
18(general adj2 pract$).mp.
19(primary adj2 care).mp.
2015 or 16 or 17 or 18 or 19
21counsel$.mp.
22psychotherap$.mp.
23(clin$ adj2 psy$).mp.
24(beh$ adj2 therap$).mp.
25(group adj2 therap$).mp.
26psychoanal$.mp.
27psychiat$.mp.
28(cog$ adj2 therap$).mp.
29psychodynam$.mp.
30exp Counseling/
31exp PSYCHOTHERAPY/

(Continued)

32exp PSYCHIATRY/
33exp Mental Health/
34exp Mental Disorders/
3521 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34
3614 and 20 and 35
37limit 36 to yr="1998 - 2007"

PSYCINFO

1Clinical Trial/
2exp Treatment Effectiveness Evaluation/
3exp treatment outcomes/
4experiment$.tw.
5(time adj series).tw.
6(pre test or pretest or (posttest or post test)).tw.
7intervention?.tw.
81 or 2 or 3 or 4 or 5 or 6 or 7
9exp Primary Health Care/
10exp General Practitioners/
11exp Family Medicine/
12exp Family Physicians/
13(family adj2 pract$).mp.
14(general adj2 pract$).mp.
15(primary adj2 care).mp.
169 or 10 or 11 or 12 or 13 or 14 or 15
17exp Counseling/
18exp Psychotherapy/
19exp Psychiatry/
20exp Mental Health/
21exp Mental Disorders/
22counsel$.mp.
23psychotherap$.mp.
24(clin$ adj2 psy$).mp.
25(beh$ adj2 therap$).mp.
26(group adj2 therap$).mp.
27psychoanal$.mp.
28psychiat$.mp.
29(cog$ adj2 therap$).mp.
30psychodynam$.mp.
3117 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30
328 and 16 and 31
33limit 32 to yr="1998 - 2007"
34cost offset.mp.
35exp "Costs and Cost Analysis"/ or exp Health Care Costs/ or exp Health Care Utilization/ or exp "Cost Containment"/
36 34 or 35
37 8 or 36
38 16 and 31 and 37
39 limit 38 to yr="1998 - 2007"
40 39 not 33

WHAT'S NEW

Date	Event	Description
16 June 2010	Amended	Typos corrected

HISTORY

Protocol first published: Issue 4, 1997
Review first published: Issue 3, 2000

Date	Event	Description
12 November 2008	New search has been performed	Review Updated Nov 2008
12 November 2008	New citation required and conclusions have changed	Review has been divided into two reviews. The second will be published at a later date.
10 October 2008	Amended	Converted to new review format.
1 February 2008	New citation required and conclusions have changed	Substantive amendment

CONTRIBUTIONS OF AUTHORS

Peter Bower was responsible for the planning of the review and writing the original protocol.

Peter Bower and Elaine Harkness conducted the searches, extracted and recorded trial data.

Bonnie Sibbald extracted data and assisted in the writing of the first version of the review.

DECLARATIONS OF INTEREST

PB works as a paid consultant to the British Association of Counselling and Psychotherapy.

SOURCES OF SUPPORT

Internal sources

- National Primary Care Research and Development Centre, UK.

External sources

- No sources of support supplied

INDEX TERMS

Medical Subject Headings (MeSH)

Mental Disorders [*therapy]; Mental Health Services [*organization & administration] [standards]; Practice Patterns, Physicians'; Primary Health Care [*organization & administration] [standards]; Professional Practice [*organization & administration] [standards]; Psychotropic Drugs [therapeutic use]; Randomized Controlled Trials as Topic; Referral and Consultation

MeSH check words

Humans