



Review

The effects of psychotherapies for major depression in adults on remission, recovery and improvement: A meta-analysis



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ABSTRACT

Background: Standardised effect sizes have been criticized because they are difficult to interpret and offer little clinical information. This meta-analysis examines the extent of actual improvement, the absolute numbers of patients no longer meeting criteria for major depression, and absolute rates of response and remission.

Methods: We conducted a meta-analysis of 92 studies with 181 conditions (134 psychotherapy and 47 control conditions) with 6937 patients meeting criteria for major depressive disorder. Within these conditions, we calculated the absolute number of patients no longer meeting criteria for major depression, rates of response and remission, and the absolute reduction on the BDI, BDI-II, and HAM-D. **Results:** After treatment, 62% of patients no longer met criteria for MDD in the psychotherapy conditions. However, 43% of participants in the control conditions and 48% of people in the care-as-usual conditions no longer met criteria for MDD, suggesting that the additional value of psychotherapy compared to care-as-usual would be 14%. For response and remission, comparable results were found, with less than half of the patients meeting criteria for response and remission after psychotherapy. Additionally, a considerable proportion of response and remission was also found in control conditions. In the psychotherapy conditions, scores on the BDI were reduced by 13.42 points, 15.12 points on the BDI-II, and 10.28 points on the HAM-D. In the control conditions, these reductions were 4.56, 4.68, and 5.29.

Discussion: Psychotherapy contributes to improvement in depressed patients, but improvement in control conditions is also considerable.

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1. Introduction

More than 350 randomized trials (Cuijpers et al., 2008a) have shown that several psychotherapies are effective in the treatment of major depression in adults, including cognitive behavior therapy (Churchill et al., 2001; Cuijpers et al., 2013a), behavioral activation therapy (Ekers et al., 2008), interpersonal psychotherapy (Cuijpers et al., 2011), problem-solving therapy (Malouff et al., 2007), and possibly non-directive counseling (Cuijpers et al., 2012) and psychodynamic therapies (Leichenring and Rabung, 2008; Driessen et al., 2010). It has been shown that these therapies result in better acute outcomes when compared to waiting lists, usual care and pill placebo (Cuijpers et al., 2008b), that they are about equally effective as pharmacotherapies for depression (De Maat et al., 2006; Cuijpers et al., 2013b), and that the combination of psychotherapy and pharmacotherapy is more effective than either one alone (De Maat et al., 2007; Cuijpers et al., 2009, 2013c).

But what exactly does it mean that these treatments are effective? Usually the effects of psychotherapies are presented in terms of effect sizes (standardised mean differences at post-treatment), as relative risks (RRs) or as odds ratios (ORs). However, most of these outcomes still do not indicate the likelihood that a person treated for major depression will not meet criteria for depression after treatment, how high the chance is that a patient improves 50% on for example the Hamilton Depression Rating scale (HAM-D; Hamilton, 1960), or how much the average score drops on the HAM-D or Beck Depression Inventory (BDI; Beck et al., 1961).

In many meta-analyses of psychological treatments, standardized mean differences (Cohen's *d* or Hedges' *g*) are used to summarize the effects of these treatments. These effect sizes indicate the difference between a treatment and a comparison group in terms of standard deviations. An effect size of 1.0 thus indicates a difference of one standard deviation between the treatment and comparison group. Effect sizes, however, have been criticized for several reasons (Cumming, 2011), including the fact that they may suggest that different treatments are equally effective while they are, in fact, not. They also assume that different scales measuring the same construct are linear transformations of each other (which are often not true). An effect size is also not an indicator of the clinical importance of a treatment. For example, an effect size does not say how many points the average patient improves from baseline to post-treatment on much used depression measures such as the BDI or HAM-D.

In more biomedical meta-analyses dichotomous outcomes are often used as an outcome measure, for example the RR or OR. These indicate the odds or chance of having a better outcome of a therapy (remission, recovery; Frank et al., 1991) compared with the comparison group. But these outcomes are also not very clear in what they exactly mean, because these are relative outcomes that can only be understood in relation to the comparison group. They also do not indicate the proportion of patients that are in remission or recovery after treatment or how many patients do not meet criteria for major depression anymore.

Both effect sizes and dichotomous outcomes can be translated into numbers-needed-to-be-treated (NNTs; Laupacis et al., 1988).

Although NNTs are easier to understand by patients, they still indicate the effects in relation to the comparison group and give no absolute effects.

We decided therefore to conduct a meta-analysis of psychological treatments of depression and report their outcomes not in effect sizes, RRs or ORs. Instead, we report the outcomes in absolute terms, including the reduction on scores on much used depression measurement instruments (BDI; HAM-D), how many people have responded (defined as 50% reduction on a depression scale) and are in remission (scoring 6/7 or lower on the HAM-D) after treatment, and how many patients do not meet criteria for MDD anymore.

2. Methods

2.1. Identification and selection of studies

We constructed a database of papers on the psychological treatment of depression that has been described in detail elsewhere (Cuijpers et al., 2008a), and that has been used in a series of earlier published meta-analyses (www.evidencebasedpsychotherapies.org). This database has been continuously updated through comprehensive literature searches (from 1966 to January 2013). In these searches, we examined 14,164 abstracts from Pubmed (3638 abstracts), PsycInfo (2824), Embase (4682) and the Cochrane Central Register of Controlled Trials (3020). These abstracts were identified by combining terms indicative of psychological treatment and depression (both MeSH terms and text words). For this database, we also checked the primary studies from 42 meta-analyses of psychological treatments for depression to ensure that no published studies were missed (www.evidencebasedpsychotherapies.org). From the 14,164 abstracts (10,474 after removal of duplicates), we retrieved 1476 full-text papers for possible inclusion in the database, after excluding 8998 abstracts based on the title and abstract (Fig. 1).

We included (a) randomized controlled trials (b) among participants with a major depressive disorder, as established with help of a standardized diagnostic interview (such as the SCID, CIDI, or SCAN), in which one or more of the following conditions was included: (1) psychotherapy; (2) a control condition (waiting list, care-as-usual; pill placebo; other). We also included studies in which a combined treatment of psychotherapy and pharmacotherapy was compared with a psychotherapy only condition, as well as studies directly comparing psychotherapy and pharmacotherapy (but we only used the psychotherapy condition of these studies in the meta-analysis, see below). 'Psychotherapy' was defined as interventions in which verbal communication between a therapist and a client was the core element, or in which a psychological treatment was written down in book format (bibliotherapy) that the client worked through more or less independently, but with some kind of personal support from a therapist (by telephone, email or otherwise; Cuijpers et al., 2010a). Usual care control conditions were defined as conditions in which the patients

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