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Psychological treatment of depression in inpatients: A systematic review and meta-analysis

Pim Cuijpers [a,b,*], Frans Clignet [a,b,c], Berno van Meijel [b,c], Annemieke van Straten [a,b], Juan Li [d], Gerhard Andersson [e,f]

[a] Department of Clinical Psychology, VU University Amsterdam, The Netherlands
[b] EMGO Institute for Health and Care Research, The Netherlands
[c] Research Group Mental Health Nursing, INHolland University for Applied Sciences, Amsterdam, The Netherlands
[d] Key Laboratory of Mental Health, Institute of Psychology, Chinese Academy of Sciences, Beijing, China
[e] Department of Behavioural Sciences and Learning, Swedish Institute for Disability Research, Linköping University, Sweden
[f] Department of Clinical Neuroscience, Psychiatry Section, Karolinska Institutet, Stockholm, Sweden

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ABSTRACT

Research on psychological treatment of depression in inpatients is not conclusive, with some studies finding clear positive effects and other studies finding no significant benefit compared to usual care or structured pharmacotherapy. The results of a meta-analysis investigating how effective psychological treatment is for depressed inpatients are presented. A systematic search in bibliographical databases resulted in 12 studies with a total of 570 respondents. This set of studies had sufficient statistical power to detect small effect sizes. Psychological treatments had a small ($g = 0.29$), but statistically significant additional effect on depression compared to usual care and structured pharmacological treatments only. This corresponded with a numbers-needed-to-be-treated of 6.17. Heterogeneity was zero in most analyses, and not significant in all analyses. There was no indication for significant publication bias. Effects were not associated with characteristics of the population, the interventions and the design of the studies. Although the number of studies was small, and the quality of many studies was not optimal, it seems safe to conclude that psychological treatments have a small but robust effect on depression in depressed inpatients. More high-quality research is needed to verify these results.

Contents

* Correspondence to: Pim Cuijpers, Department of Clinical Psychology and EMGO Institute for Health and Care Research, VU University Amsterdam, Van der Boechorststraat 1, 1081 BT Amsterdam, The Netherlands. Tel.: +31 20 5988757; fax: +31 20 5988758.
E-mail address: p.cuijpers@psy.vu.nl (P. Cuijpers).

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1. Introduction

It is well-established that psychological interventions are effective in the treatment of depressive disorders in adults (Churchill et al., 2001; Cuijpers, van Straten, Warmerdam, & Smits, 2008), although the effects may have been overestimated because of publication bias (Cuijpers, Smit, Bohlmeijer, Hollon, & Andersson, 2010) and because of the relatively low methodological quality of many studies in this area (Cuijpers, van Straten, Bohlmeijer, Hollon, & Andersson, 2010). Most research on psychological interventions for depression have been conducted in outpatients with mild to moderate depressive disorders (Churchill et al., 2001; Cuijpers, van Straten, Warmerdam, & Andersson, 2008; Cuijpers, van Straten, Warmerdam and Smits, 2008), often recruited via advertisement or in the general public. Psychological treatments have been found to be less effective in outpatients with chronic depression (Cuijpers, van Straten, Schuurmans et al., 2010), and possibly severe depression (Elkin et al., 1989), although evidence is not conclusive (Driessen, Cuijpers, Hollon, & Dekker, 2010).

Apart from these studies in depressed outpatients, several studies have examined the effects of psychological treatments in depressed inpatients in the past decades. The number of studies in this area, however, is not as large as the number of studies examining psychological treatments for depressed outpatients, presumably because most patients are treated in outpatient settings. Inpatient treatment remains an important treatment option for patients with more severe and chronic depression, who cannot safely stay in their own environment (Wolpert, 2001).

Inpatients belong to the most severe and disabled patient populations. Many of these patients suffer from severe and chronic forms of depression, and better treatment options may improve their recovery and reduce the suffering from themselves as well as their relatives. It is important, therefore, to examine the possibilities of psychological treatments to contribute to the reduction of the suffering of depressed inpatients.

Although some studies found positive effects of psychological treatment for depressed inpatients (De Jong, Treiber, & Henrick, 1986; Hopko, Lejuez, Lepage, Hopko, & McNeil, 2003; Lemmens, Eisler, Buysse, Heene, & Demyttenaere, 2009), several other studies did not find significant effects (Barker, Scott, & Eccleston, 1987; Bowers, 1990; De Jong-Meyer & Hautzinger, 1996; Miller, Norman, & Keitner, 1989). Meta-analysis can be used to integrate the results of these studies to get a better estimate of the overall effect size. Because no meta-analysis has attempted to integrate the results of the studies examining the effects of psychological treatments of depressed inpatients until now, this study is aimed at presenting the results of such a meta-analysis. Our hypothesis for this study was that psychological treatments would result in better outcomes compared to the care usually given to depressed patients in inpatient settings.

2. Methods

2.1. Identification and selection of studies

A database of 1120 papers on the psychological treatment of depression was used. This database has been described in detail elsewhere (Cuijpers, van Straten, Warmerdam, & Andersson, 2008) and has been used in a series of 25 earlier published meta-analyses (www.evidencebasedpsychotherapies.org). The database is continuously updated and was developed through a comprehensive literature search (from 1966 to January 2010) in which 10,346 abstracts in Pubmed (1831 abstracts), PsycInfo (2943), Embase (3087) and the Cochrane Central Register of Controlled Trials (2485) were examined. These abstracts were identified by combining terms indicative of psychological treatment and depression (both MeSH-terms and text words). For this database, the primary studies from 42 meta-analyses of psychological treatment for depression were also checked to secure that no published studies had been missed (www.evidencebasedpsychotherapies.org). For the current study, the full texts of these 1120 papers were examined. The reference lists of earlier reviews of psychotherapies for chronic depression and dysthymia were also examined (Stuart, Wright, Thase, & Beck, 1997; Cole, Elie, McCusker, Bellavance, & Mansour, 2000; Huber, 2005), as well as the references of the included primary studies.

We included (a) randomized trials (b) in which the effects of a psychological treatment (c) was compared to the effects of a control group (d) in adults who were hospitalized in a psychiatric setting during the treatment and (e) who had a depressive disorder (established with a diagnostic interview) as the primary presenting problem. Only studies were included in which structured and standardized psychotherapies referring to a protocol or clearly defined method were used, which were clearly different from the standard care. Studies in patients with comorbid substance use disorders and depression in substance use disorders units were excluded (Bowman, Ward, Bowman, & Scogin, 1996; Daughters et al., 2009), because depression was not the primary disorder in these patients, and the treatment units differed too much from other psychiatric inpatient settings.

2.2. Quality assessment

The validity of included studies was assessed with four criteria of the 'Risk of bias' assessment tool, developed by the Cochrane Collaboration (Higgins & Green, 2008). This tool assesses possible sources of bias in randomized trials, including the adequate generation of allocation sequence; the concealment of allocation to conditions; the prevention of knowledge of the allocated intervention; and dealing with incomplete outcome data. The two other criteria of the 'Risk of bias' assessment tool were not used in this study. One is aimed at selective outcome reporting (which is only possible in the tool if the study protocol is available, or other very clear indications of reporting only a selection of outcomes; none of studies reported publication of a study protocol), the other criterion is a rest category of possible problems that could put the study at a high risk of bias (but we did not find any indication for this).

2.3. Meta-analyses

For each comparison between a psychological treatment and a control group (or another active treatment), the effect size indicating the difference between the two groups at post-test was calculated (Cohen's d or standardized mean difference). Effect sizes were calculated by subtracting (at post-test) the average score of the psychological treatment group from the average score of the comparison group, and dividing the result by the pooled standard deviations of the two groups. Effect sizes of 0.8 can be assumed to be large, while effect sizes of 0.5 are moderate, and effect sizes of 0.2 are small (Cohen, 1988). Because several studies had small sample sizes we corrected the effect size for small sample bias according to the procedures suggested by Hedges and Olkin (1985).

In the calculations of effect sizes, we only used those instruments that explicitly measured symptoms of depression, such as the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960). If more than one depression measure was used, the mean of the effect sizes was calculated, so that each study only provided one effect size. If means and standard deviations were not reported, we used the procedures of the Comprehensive Meta-Analysis software (see below) to calculate the effect size using dichotomous outcomes. If insufficient data were reported to calculate an effect size, the study was excluded (which was the case in one study, which reported no data or tests for the four conditions to which the subjects were randomized; Waring et al., 1988).

To calculate pooled mean effect sizes, we used the computer program Comprehensive Meta-Analysis (version 2.2.021). As we expected considerable heterogeneity among the studies, we decided