**Supplementary material**

**Table of Contents**

[eMethods 2](#_Toc187248056)

[Amendments to protocol 2](#_Toc187248057)

[Model formulas and sensitivity analyses on methodological decisions 3](#_Toc187248058)

[eResults 4](#_Toc187248059)

[Figure S1. PRISMA Flowchart 4](#_Toc187248060)

[References of the included studies 5](#_Toc187248061)

[Characteristics of the included studies 12](#_Toc187248062)

[Table S1. Characteristics of the 91 included studies 13](#_Toc187248063)

[List of instruments used in the included studies 18](#_Toc187248064)

[Table S2. Sensitivity analysis on methodological decisions 19](#_Toc187248065)

[Table S3. Heterogeneity in the models (I2 and tau2) 20](#_Toc187248066)

[Multimodel inference: best models 21](#_Toc187248067)

[References of the instruments 22](#_Toc187248068)

[GRADE assessments 23](#_Toc187248069)

## eMethods

### Amendments to protocol

We conducted two post-hoc sensitivity analyses that were not registered, which were carried out to further explore the robustness of our results. One analysis aims at repeating the main model but lowering the levels of assumed correlations in the variance-covariance matrices. The second exploratory sensitivity analysis aimed at examining the impact of specific population groups on our results, given that this variable emerged as the most important predictor in the multimodel inference analysis.

### Model formulas and sensitivity analyses on methodological decisions

Our main pooling method (“main model”) was a four-level hierarchical meta-analysis model. For this model, we assumed a doubly nested random effects structure (effects *in* [clinician, self-report] outcomes *in* studies), which means that three heterogeneity variance components are estimated across these levels: study, rating (self-report vs. clinician), and outcome or instrument level (effect size for a specific instrument). A generalized formula for this model can be denoted like so:

Where is the calculated effect size estimate in rating cluster included in study , is a generic vector of regression coefficients, and a row vector of covariates additionally entered into the model. The error terms represent the (nested) random effects, with being the between-study heterogeneity variance as typically calculated in random-effect meta-analyses. As described in the methods section, the error terms were assumed to be correlated. Thus, a variance-covariance matrix was constructed for each model, using the (assumed to be known) sampling variances of all included effects:

Next to our primary analysis, we performed two planned sensitivity analyses with different methods for pooling the effect sizes (i.e., different model specifications). First, we pooled effects after pre-aggregating them on an outcome level (clinician vs. self-report) using the approximate variance-covariances constructed for the primary analysis. This pre-aggregation avoids the need to estimate a complex nesting structure and means that a simpler bivariate meta-analysis model with correlated random effects can be employed. This approach also avoids modeling rating clusters as random. The formula for the model thus simplifies to:

Where and are the overall effects for self-reports and clinician ratings, respectively.

 Second, in trials reporting more than one instrument per type of rating (clinician/self-report), we selected one instrument per study, giving priority to the most frequently used across studies. For this analysis, effects were again pooled using the bivariate correlated random-effects model described above. Additionally, to test the robustness of our primary analysis, we performed a third sensitivity analysis by using lower levels of assumed correlations in the variance-covariance matrices of the main model (*ρ*=0.6 among self-reports and *ρ*=0.5 between self-reports and clinician ratings).

The results of these sensitivity analyses are reported in Table S2 (Supplement).

## eResults

### Figure S1. PRISMA Flowchart

Date of searches: 01-01-2023



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### Characteristics of the included studies

After examining a total of 23,243 references (after duplicates removal) and 3,987 full-text papers, a total of 953 trials were included in the larger meta-analytical database, from which 91 met criteria for the current study.

The 91 RCTs, which had 128 comparisons between psychotherapy and control conditions (due to trials with multiple arms), included a total of 7250 participants (4104 in treatment and 3146 in control groups). The most relevant characteristics of each study are presented in Table S1. Most participants were middle-aged adults (n=65, 71%) with a diagnosis of depression or mood disorder (n=58, 64%) recruited from the community (n=41, 45%). The most frequent type of psychological treatment was CBT (n=71, 55%), delivered individually (n=61, 47%), and compared to waitlist control (n=36, 40%) and care-as-usual (n= 45, 49%).

A total of 38 trials (42%) achieved a low risk of bias score in domain 1 (bias arising from the randomization process) and 58 (64%) trials were rated at low risk of bias in domain 2 (bias arising from deviations from the intended interventions). An appropriate handling of missing data (domain 3) was reported in 37 trials (41%). Only 14 trials (15%) were rated at low risk for selective outcome reporting (domain 5), due to most of them being not registered (*n*=51; 56%) or retrospectively registered (n=21; 23%). In total, only 7 (8%) trials had a low risk of bias score in all four RoB domains.

Most of the trials (n=74; 81%) specified that the personnel administering the clinician-rated scales at post-treatment were masked to treatment allocation. The remaining 17 trials (19%) were considered in our analyses as not masked, either not reporting information about masking (n=13) or explicitly stating that assessors were not masked (n=4).

### Table S1. Characteristics of the 91 included studies

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Psy | Contr  | Self-reports | Clinician-rated | Blind | Form | N sess | Country | M. age | % wom | Recr | Diag | Pop | D1 | D2 | D3 | D5 | RoB |
| Ammerman, 2013 | cbt | cau | bdi-2, epds | hdrs-17 | + | ind | 11 | us | 21.9 | 1.00 | oth | mdd | ppd | l | l | l | s | s |
| Arean, 1993 | pst | wl | bdi-1, gds | hdrs-17 | + | grp | 12 | us | 66.5 | 0.75 | com | mdd | old | s | s | h | s | h |
| Arean, 1993 | lrt | wl | bdi-1, gds | hdrs-17 | + | grp | 12 | us | 66.5 | 0.75 | com | mdd | old | s | s | h | s | h |
| Ayen, 2004 | cbt | wl | bdi-1 | ids | + | grp | 12 | eu | 51.3 | 1.00 | com | mood | oth | s | l | l | s | s |
| Ayen, 2004 | sup | wl | bdi-1 | ids | + | grp | 12 | eu | 51.3 | 1.00 | com | mood | oth | s | l | l | s | s |
| Baumeister, 2021 | cbt | cau | phq-9 | hdrs-17, qids-cr | + | gsh | 6 | eu | 49.9 | 0.60 | oth | mdd | med | l | l | s | l | s |
| Berman, 2022 | 3rd | other ctr | phq-9 | hrds-17 | + | grp | 7 | us | 51 | 1.00 | com | mdd | oth | s | l | l | l | s |
| Bowman, 1995 | pst | wl | bdi-1 | hdrs-21 | NI | gsh | 4 | us | 36.2 | 0.63 | com | cut | adul | s | h | l | s | h |
| Bowman, 1995 | cbt | wl | bdi-1 | hdrs-21 | NI | gsh | 4 | us | 36.2 | 0.63 | com | cut | adul | s | h | l | s | h |
| Carr, 2017 | cbt | cau | bdi-2 | hdrs-17, madrs-cr | + | grp | 20 | eu | 41 | 0.66 | clin | mdd | adul | s | l | h | s | h |
| Castonguay, 2004 | cbt | wl | bdi-1 | hdrs-24 | + | ind | 16 | us | 38.8 | 0.75 | com | mdd | adul | s | l | l | s | s |
| Chan, 2012 | cbt | wl | bdi-2 | hdrs-17 | + | grp | 10 | eas | 46.4 | 0.82 | clin | mdd | adul | l | h | h | s | h |
| Chan, 2012 | other psy | wl | bdi-2 | hdrs-17 | + | grp | 10 | eas | 46.4 | 0.82 | clin | mdd | adul | l | h | h | s | h |
| Chiang, 2015 | cbt | cau | bdi-2 | hdrs-21 | + | grp | 12 | eas | 46.1 | 0.63 | clin | mood | adul | s | h | h | s | h |
| Cohen, 2010 | other psy | wl | bdi-2 | hdrs-24 | + | cpl | 5 | us | 43.2 | 1.00 | com | mood | oth | s | h | l | s | h |
| Desautels, 2017 | cbt | wl | bdi-2, hads-d | hdrs-17 | + | ind | 8 | can | 57.1 | 1.00 | oth | cut | med | l | l | l | s | s |
| Dimidjian, 2006 | bat | other ctr | bdi-1 | hdrs-17 | + | ind | 24 | us | 39.9 | 0.66 | com | mdd | adul | s | l | l | s | s |
| Dimidjian, 2006 | cbt | other ctr | bdi-1 | hdrs-17 | + | ind | 24 | us | 39.9 | 0.66 | com | mdd | adul | s | l | l | s | s |
| Dindo, 2012 | 3rd | wl | idas-d | hdrs-17 | + | grp | 1 | us | 32.8 | 0.93 | oth | mdd | med | h | l | l | s | h |
| Dobkin, 2011 | cbt | cau | bdi-1 | hdrs-17 | + | ind | 10 | us | 64.6 | 0.40 | com | mood | med | l | l | l | s | s |
| Dobkin, 2020 | cbt | cau | bdi-1 | hdrs-17 | + | tel | 10 | us | 65.6 | 0.54 | oth | mood | med | l | l | l | h | h |
| Dobkin, 2021 | cbt | cau | bdi-2 | hdrs-17 | + | tel | 10 | us | 66.8 | 0.00 | com | mdd | med | l | l | l | l | l |
| Dong, 2019 | lrt | cau | sds | hdrs-24 | + | tel | 6 | eas | 59.1 | 0.50 | oth | cut | med | l | h | l | s | h |
| Ebert, 2018 | other psy | wl | ces-d | hdrs-24, qids-cr-16 | + | gsh | 5 | eu | 44.2 | 0.80 | com | sub | adul | l | l | s | h | h |
| Elkin, 1989 | ipt | other ctr | bdi-1 | hdrs-17 | + | ind | 13 | us | 35 | 0.70 | clin | mdd | adul | s | h | h | s | h |
| Elkin, 1989 | cbt | other ctr | bdi-1 | hdrs-17 | + | ind | 13 | us | 35 | 0.70 | clin | mdd | adul | s | h | h | s | h |
| Euteneuer, 2022 | cbt | wl | bdi-2 | madrs-cr | + | ind | 14 | eu | 30.3 | 0.60 | com | mdd | adul | s | l | s | s | h |
| Fann, 2015 | cbt | cau | scl-20 | hdrs-17 | + | tel | 10 | us | 45.8 | 0.37 | com | mdd | med | s | l | l | s | s |
| Fann, 2015 | cbt | cau | scl-20 | hdrs-17 | + | ind | 9 | us | 45.8 | 0.37 | com | mdd | med | s | l | l | s | s |
| Floyd, 2004 | cbt | wl | gds | hdrs-21 | + | ind | 16 | us | 68 | 0.76 | com | mood | old | s | h | h | s | h |
| Floyd, 2004 | cbt | wl | gds | hdrs-21 | + | gsh | 4 | us | 68 | 0.76 | com | mood | old | s | h | h | s | h |
| Fonagy, 2015 | dyn | cau | bdi-2 | hdrs-17 | + | ind | 60 | uk | 44.3 | 0.66 | clin | chr | adul | l | l | l | s | s |
| Forand, 2018 | cbt | wl | phq-9 | hdrs-17 | - | gsh | 6 | us | 33. | 0.75 | com | cut | adul | s | l | s | l | s |
| Freedland, 2009 | cbt | cau | bdi-1 | hdrs-17 | + | ind | 11 | us | 60.6 | 0.50 | oth | mood | med | l | l | l | s | s |
| Freedland, 2009 | sup | cau | bdi-1 | hdrs-17 | + | ind | 8 | us | 60.6 | 0.50 | oth | mood | med | l | l | l | s | s |
| Freedland, 2015 | cbt | cau | bdi-2, promis | hdrs-17 | + | ind | 11 | us | 55.8 | 0.46 | oth | mdd | med | l | l | l | s | s |
| Gellis, 2008 | pst | cau | gds | hdrs-17 | + | ind | 6 | us | 77.4 | 0.87 | oth | sub | med | s | s | s | s | h |
| Gellis, 2010 | pst | cau | bdi-1 | hdrs-17 | + | ind | 6 | us | 75.9 | 0.92 | oth | sub | med | l | l | l | s | s |
| Gibbons, 2012 | dyn | cau | basis-24-d | hdrs-17 | - | ind | 7 | us | 41.2 | 0.87 | clin | cut | adul | s | h | h | s | h |
| Greenberg, 2018 | 3rd | wl | bdi-2 | hdrs-28 | + | grp | 7 | us | 38.5 | 0.63 | com | cut | adul | s | h | h | h | h |
| Han, 2020 | cbt | wl | bdi-2 | hdrs-17 | + | grp | 10 | eas | 46.9 | 0.77 | clin | mdd | adul | l | h | h | s | h |
| Han, 2020 | other psy | wl | bdi-2 | hdrs-17 | + | grp | 10 | eas | 46.9 | 0.77 | clin | mdd | adul | l | h | h | s | h |
| Harley, 2008 | 3rd | wl | bdi-1 | hdrs-17 | + | grp | 14 | us | 41.8 | 0.75 | clin | chr | adul | s | h | h | s | h |
| Hautzinger, 2004 | cbt | wl | gds, scl-90-d | ids | + | grp | 12 | eu | 68.53 | 0.79 | com | mood | old | s | h | s | s | h |
| Hummel, 2017 | cbt | wl | hads-d | hdrs-17 | + | grp | 13 | eu | 81.94 | 0.80 | oth | cut | med | s | l | s | s | s |
| Husain, 2017 | cbt | cau | epds | hdrs-17 | + | grp | 6 | oth | 27.73 | 1.00 | oth | mood | ppd | l | l | l | l | l |
| Husain, 2021b | cbt | cau | epds | hdrs-17 | NI | grp | 10.0 | oth | 27.00 | 1.00 | oth | mood | ppd | s | h | s | s | h |
| Jarrett, 1999 | cbt | other ctr | bdi-1 | hdrs-21 | + | ind | 20.0 | us | 39.60 | 0.68 | com | mdd | adul | l | l | h | s | h |
| Johnson, 2019 | ipt | cau | qids-sr | hdrs-17 | + | oth | 24.0 | us | 39.00 | 0.35 | oth | mdd | oth | l | l | l | s | s |
| Kanter, 2015 | bat | cau | bdi-2 | hdrs-17 | + | ind | 8.0 | us | 38.10 | 0.79 | clin | mdd | oth | s | l | h | s | h |
| Laidlaw, 2008 | cbt | cau | bdi-2, gds | hdrs-17 | + | ind | 8.0 | uk | 74.03 | 0.73 | clin | mdd | old | l | h | h | s | h |
| Larcombe, 1984 | cbt | wl | bdi-1 | hdrs-17 | NI | grp | 6.0 | au | 42.50 | 0.68 | com | mood | med | s | h | h | s | h |
| Lee, 2021 | bat | cau | ces-d | hdrs-17 | + | grp | 10.0 | eas | 37.00 | 0.58 | clin | mood | adul | l | l | l | s | s |
| Liu, 2021 | cbt | cau | epds | hdrs | NI | ind | 6.0 | eas | 27.00 | 1.00 | oth | sub | ppd | l | h | s | h | h |
| Lynch, 2019 | other psy | cau | phq-9 | hdrs-17 | + | oth | 43.0 | uk | nr | 0.66 | clin | chr | adul | s | l | l | s | s |
| Matsuzaka, 2017 | ipt | cau | phq-9 | hdrs-17 | + | ind | 4.0 | oth | 43.84 | 0.94 | clin | mood | adul | h | l | s | h | h |
| McIndoo, 2016 | bat | wl | bdi-2 | hdrs-17 | NI | ind | 4.0 | us | 19.20 | 0.62 | com | cut | stud | l | l | l | s | s |
| McIndoo, 2016 | 3rd | wl | bdi-2 | hdrs-17 | NI | ind | 4.0 | us | 19.20 | 0.62 | com | cut | stud | l | l | l | s | s |
| Michalak, 2015 | other psy | cau | bdi-1 | hdrs-24 | + | oth | 10.0 | eu | 50.84 | 0.62 | com | chr | adul | l | l | l | l | l |
| Michalak, 2015 | 3rd | cau | bdi-1 | hdrs-24 | + | grp | 8.0 | eu | 50.84 | 0.62 | com | chr | adul | l | l | l | l | l |
| Mohr, 2011 | cbt | cau | phq-9 | hdrs-17 | + | tel | 16.0 | us | 55.90 | 0.09 | clin | mdd | oth | s | l | l | s | s |
| Moon, 2021 | cbt | cau | bdi-1 | hdrs-17 | + | grp | 8.0 | eas | 32.00 | 0.52 | oth | cut | med | l | l | l | s | s |
| Mulcahy, 2010 | ipt | cau | bdi-2, epds | hdrs-17 | + | oth | 11.0 | au | 32.22 | 1.00 | clin | mdd | ppd | s | h | h | s | h |
| Mynors-Wallis, 1995 | pst | other ctr | bdi-1 | hdrs | + | ind | 6.0 | uk | 37.10 | 0.77 | clin | mdd | adul | l | h | h | s | h |
| Nakagawa, 2017 | cbt | cau | bdi-2, qids-sr | grid-HDRS17 | + | ind | 15.0 | eas | 40.60 | 0.36 | clin | chr | adul | l | l | l | l | l |
| Nezu, 1989 | pst | wl | bdi-1 | hdrs-17 | + | grp | 10.0 | us | 41.73 | 0.77 | com | mdd | adul | s | h | h | s | h |
| Niedermoser, 2020 | ipt | cau | bdi-2 | hdrs-24 | NI | grp | 8.0 | eu | 40.86 | 50.00 | com | mdd | oth | l | l | h | s | h |
| O'Hara, 2000 | ipt | wl | bdi-1 | hdrs-21 | - | ind | 12.0 | us | 29.55 | 1.00 | oth | mdd | ppd | s | l | s | s | h |
| Pecheur, 1984 | cbt | wl | bdi-1 | hdrs-17 | + | ind | 8.0 | us | 24.00 | 0.90 | com | mdd | stud | s | h | h | s | h |
| Poleshuck, 2014 | ipt | cau | bdi-1 | hdrs-17 | NI | ind | 4.0 | us | 36.70 | 1.00 | oth | mdd | med | l | l | l | s | s |
| Prendergast, 2001 | cbt | other ctr | epds | madrs-cr | NI | ind | 6.0 | au | 32.20 | 1.00 | oth | mood | ppd | s | l | l | s | s |
| Propst, 1992 | cbt | wl | bdi-1 | hdrs-17 | + | ind | 19.0 | us | 40.00 | 0.83 | com | cut | oth | s | h | h | s | h |
| Propst, 1992 | cbt | cau | bdi-1 | hdrs-17 | + | ind | 19.0 | us | 40.00 | 0.83 | com | cut | oth | s | h | h | s | h |
| Rehm, 1981 | other psy | wl | bdi-1, mmpi-d | hdrs-17 | + | grp | 7.0 | us | 39.20 | 1.00 | com | cut | adul | s | h | h | s | h |
| Ritvo, 2021 | 3rd | cau | bdi-2, qids-sr | hdrs-24 | + | gsh | nr | can | 24.49 | 0.62 | clin | mdd | yadul | l | l | l | l | l |
| Rohan, 2007 | cbt | wl | bdi-2 | hdrs-21 | + | oth | 10.0 | us | 45.00 | 0.90 | com | mdd | adul | s | l | s | s | h |
| Rohan, 2007 | cbt | wl | bdi-2 | hdrs-21 | + | grp | 10.0 | us | 45.00 | 0.90 | com | mdd | adul | s | l | s | s | h |
| Ross, 1985 | cbt | wl | bdi-1 | madrs-cr | + | oth | 12.0 | uk | 33.00 | 0.63 | clin | mdd | adul | s | l | h | s | h |
| Rosso, 2017 | cbt | other ctr | phq-9 | hdrs-17 | + | gsh | 6.0 | us | 29.00 | 0.69 | com | mdd | adul | l | l | l | l | l |
| Russell, 2020 | bat | cau | bdi-2, phq-9 | grid-HDRS17 | + | gsh | 8.0 | uk | 37.71 | 0.27 | oth | cut | oth | l | h | h | l | h |
| Safren, 2009 | cbt | wl | bdi-1 | hdrs-17 | + | ind | 10.0 | us | nr | 0.16 | com | mood | med | s | l | s | s | h |
| Safren, 2016 | cbt | cau | ces-d | madrs-cr | + | ind | 11.0 | us | 47.45 | 0.31 | com | mood | med | s | l | l | l | s |
| Safren, 2016 | sup | cau | ces-d | madrs-cr | + | ind | 11.0 | us | 47.45 | 0.31 | com | mood | med | s | l | l | l | s |
| Safren, 2021 | cbt | cau | ces-d | hdrs-17 | + | ind | 8.0 | oth | nr | 0.70 | oth | mdd | med | s | l | l | l | s |
| Savard, 2006 | cbt | wl | bdi-1, hads-d | hdrs-17 | + | ind | 8.0 | can | 51.55 | 1.00 | com | cut | med | l | l | s | s | s |
| Schramm, 2020 | ipt | cau | bdi-2 | hdrs-24 | + | grp | 8.0 | eu | 47.40 | 0.79 | clin | mdd | oth | s | l | h | l | h |
| Scogin, 1987 | cbt | wl | bdi-1, gds | hdrs-21 | NI | gsh | 4.0 | us | 70.54 | 0.79 | com | cut | old | s | h | h | s | h |
| Scogin, 1987 | cbt | other ctr | bdi-1, gds | hdrs-21 | NI | gsh | 4.0 | us | 70.54 | 0.79 | com | cut | old | s | h | h | s | h |
| Scogin, 1989 | cbt | wl | gds | hdrs-17 | NI | gsh | 4.0 | us | 68.34 | 0.85 | com | cut | old | s | h | s | s | h |
| Scott, 1997 | cbt | cau | bdi-1 | hdrs-17 | + | ind | 6.0 | uk | 41.00 | 0.67 | clin | mdd | adul | s | h | h | s | h |
| Segre, 2015 | other psy | wl | epds, idas-gd | hdrs-17 | + | ind | 5.0 | us | 26.30 | 1.00 | oth | cut | oth | s | l | s | s | h |
| Selmi, 1990 | cbt | wl | bdi-1, scl-90-d | hdrs-17 | + | gsh | 6.0 | us | 28.20 | 0.64 | com | mood | adul | s | l | l | s | s |
| Selmi, 1990 | cbt | wl | bdi-1, scl-90-d | hdrs-17 | + | ind | 6.0 | us | 28.20 | 0.64 | com | mood | adul | s | l | l | s | s |
| Shan, 2022 | cbt | cau | phq-9 | hrds-17 | + | ind | 10.0 | eas | 62.81 | 0.64 | oth | mood | med | l | h | s | s | h |
| Sheeber, 2017 | cbt | other ctr | phq-9 | hdrs-17 | + | gsh | 7.0 | us | 31.80 | 1.00 | com | cut | ppd | l | l | l | l | l |
| Simoni, 2013 | cbt | cau | bdi-1 | madrs-cr | + | ind | 11.0 | us | 46.00 | 0.28 | com | cut | med | l | l | l | s | s |
| Spinelli, 2003 | ipt | other ctr | bdi-1, epds | hdrs-17 | NI | ind | 16.0 | us | 28.80 | 1.00 | com | mdd | ppd | s | l | h | s | h |
| Swartz, 2008 | ipt | cau | bdi-1 | hdrs-17 | NI | ind | 9.0 | us | 42.7 | 1.00 | com | mdd | oth | s | h | h | s | h |
| Taylor, 2009 | cbt | wl | bdi-1 | hdrs | + | ind | 15.0 | us | 62.2 | 0.67 | com | cut | med | s | l | h | s | h |
| Tovote, 2014 | 3rd | wl | bdi-2 | hdrs-7 | - | ind | 8 | eu | 53.1 | 0.49 | oth | cut | med | s | l | h | s | h |
| Tovote, 2014 | cbt | wl | bdi-2 | hdrs-7 | - | ind | 8 | eu | 53.1 | 0.49 | oth | cut | med | s | l | h | s | h |
| Town, 2017 | dyn | cau | phq-9 | hdrs-17 | + | ind | 16 | can | 41.5 | 0.63 | clin | chr | adul | l | l | l | s | s |
| van Schaik, 2006 | ipt | cau | gds | madrs-cr | + | ind | 8 | eu | 67.9 | 0.69 | clin | mdd | old | l | l | s | s | s |
| Verduyn, 2003 | cbt | cau | bdi-1 | hdrs-17 | + | grp | 16 | uk | 29.8 | 1.00 | oth | cut | oth | l | l | h | s | h |
| Verduyn, 2003 | sup | cau | bdi-1 | hdrs-17 | + | grp | 16 | uk | 29.8 | 1.00 | oth | cut | oth | l | l | h | s | h |
| Watkins, 2012 | other psy | cau | bdi-2, phq-9 | hdrs-17 | + | oth | 7 | uk | 43.6 | 0.64 | clin | mood | adul | l | l | s | s | s |
| Watkins, 2012 | other psy | other ctr | bdi-2, phq-9 | hdrs-17 | + | oth | 7 | uk | 43.6 | 0.64 | clin | mood | adul | l | l | s | s | s |
| Watt, 2000 | lrt | other ctr | gds | hdrs-17 | + | grp | 6 | can | 68.6 | 0.54 | com | cut | old | s | h | h | s | h |
| Wilson, 1983 | bat | wl | bdi-1 | hdrs-17 | NI | ind | 8 | au | 39.5 | 0.80 | com | cut | adul | s | h | h | s | h |
| Wilson, 1983 | cbt | wl | bdi-1 | hdrs-17 | NI | ind | 8 | au | 39.5 | 0.80 | com | cut | adul | s | h | h | s | h |
| Wright, 2005 | cbt | wl | bdi-1 | hdrs-17 | + | gsh | 9 | us | 40.2 | 0.76 | com | mdd | adul | s | l | h | s | h |
| Wright, 2005 | cbt | wl | bdi-1 | hdrs-17 | + | ind | 9 | us | 40.2 | 0.76 | com | mdd | adul | s | l | h | s | h |
| Zu, 2014 | cbt | cau | qids-sr | hdrs-17 | + | ind | 20 | eas | 38.5 | 0.51 | clin | mdd | adul | s | h | h | s | h |

**Types of psychotherapy**: cbt: cognitive behavioural therapy, ipt: interpersonal psychotherapy; 3rd: third wave therapies; sup: supportive therapy; dyn: psychodynamic therapy; bat: behavioural activation therapy; pst: problem solving therapy; lrt: life review therapy; other psy: other psychotherapy. **Types of controls:** wl: waitlist, cau: care as usual, other ctr: other type of control (e.g., attention placebo). **Characteristics of the trials and participants**: Blind: if clinicians administering the assessment are blinded (“+” is yes, “-“ is no, and “NI” is no information); N sess: Number of sessions; % wom: Percentage of women in the trial sample; Recruit: Recruitment (com= community, clin= clinical, oth= other); Diagn: Diagnosis of depression at inclusion (cut= above a cut-off in a symptoms scale, mdd= major depressive disorder, mood = mood disorder, chr= chronic depression, sub= subclinical depression); Pop: Target population of the trial (adul: middle-aged adults, ppd: perinatal depression, med: individuals with comorbid medical conditions, stud: students, yadul: young adults, old: older adults, oth: other specific target groups).

**Risk of bias:** “h” denotes high risk of bias, “l” denotes low risk, and “s” denotes some concerns. D1: randomization process, D2: deviations from the intended interventions, D3: missing outcome data, D5: Selection of the reported result. For D4 (measurement of the outcome) we collected information regarding the blinding of clinicians (see column “Blind”) .

### List of instruments used in the included studies

|  |  |
| --- | --- |
| HRSD | Hamilton Rating Scale for Depression (Hamilton, 1960) |
| MADRS-cr | Montgomery-Åsberg Depression Rating Scale (Montgomery & Åsberg, 1979) |
| IDS | Inventory of Depressive Symptomatology (Rush et al., 1986) |
| QIDS-cr | Quick Inventory of Depressive Symptomatology (Rush et al., 2003) |
| BDI-I | Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) |
| BDI-II | Beck Depression Inventory-II; (Beck, Steer, & Brown, 1996) |
| GDS | Geriatric Depression Scale (Yesavage, 1988) |
| PHQ-9 | Patient Health Questionnaire (Kroenke, Spitzer, & Williams, 2001) |
| EPDS | Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987) |
| CES-D | Center for Epidemiologic Studies Depression Scale (Radloff, 1977) |
| SCL-90 | Symptom Checklist 90 (Derogatis, Lipman, & Covi, 1973) |
| QIDS-sr | Quick Inventory of Depressive Symptomatology (Rush et al., 2003) |
| MMPI-D |  Minnesota Multiphasic Personality Inventory – Depression Scale (Hathaway & McKinley, 1951) |
| HADS-D | Hospital Anxiety and Depression Scale – Depression subscale (Zigmond & Snaith, 1983) |
| IDAS-D | Inventory of Depression and Anxiety Symptoms (Watson et al., 2007) |
| SDS | Zung Self-Rating Depression Scale (Zung, 1965) |
| PROMIS | NIH-Patient-Reported Outcomes Measurement Information System (Cella et al., 2007) |
| BASIS-24-D | Behavior and Symptom Identification Scale (Eisen, Normand, Belanger, Spiro III, & Esch, 2004) |

References of the instruments can be found in page 22.

### Table S2. Sensitivity analysis on methodological decisions

We conducted three **sensitivity analyses on methodological decisions**. Two of them involved using different methods for pooling outcomes: 1) pre-aggregating the instruments on the rating level (self-report vs. clinician), and 2) selecting one instrument per study (based on frequency). In the 3) third sensitivity analysis we repeated our main model for pooling (four-level hierarchical meta-analysis model) but assuming a different level of correlation between ratings for the variance-covariance matrices (*ρ*=0.6 among self-reports and ρ=0.5 between self-reports and clinician ratings).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Contrasts** | ***Δg*** | **95% CI** | **PI** | ***pcontrasts*** |
| 1) Pre-aggregating on rating level*(*Δ*g)* | 0,131 | 0,04 to 0,22 | -1,19 to 1,44 | 0,005 |
| 2) One instrument per study *(*Δ*g)*  | 0,148 | 0,06 to 0,24 | -1,26 to 1,55 | 0,001 |
| 3) Different correlations*(*Δ*g)* | 0,113 | 0,03 to 0,20 | -1,08 to 1,30 | 0,009 |

Notes

*Δg =* Differential effects between self-reports and clinician-rated instruments. A positive value indicates larger effects for clinician-rated instruments.

95% CI: 95% Confidence Interval; PI: Prediction Interval

### Table S3. Heterogeneity in the models (*I*2 and tau2)

This table shows heterogeneity estimates (*I*2 and tau2) across different models and levels within the models. Our **main pooling method** (“main model”) is a four-level hierarchical meta-analysis model. For this model, we assumed a doubly nested random effects structure (effects *in* [clinician, self-report] outcomes *in* studies), which means that three heterogeneity variance components are estimated across these levels: study, rating (self-report vs. clinician), and outcome or instrument level (effect size for a specific instrument).

Next, we conducted three **sensitivity analyses on methodological decisions**. Two of them involved using different methods for pooling outcomes: 1) pre-aggregating the instruments on the rating level (self-report vs. clinician), and 2) selecting one instrument per study (based on frequency). This resulted in two heterogeneity variance components, based on the rating (self-report vs. clinician). The 3) third sensitivity analysis on a methodological decision involved the level of correlation assumed in the variance-covariance matrices of the main model (*ρ*=0.6 among self-reports and ρ=0.5 between self-reports and clinician ratings). The pooling in this analysis was the same as in our main model, thus resulting in three heterogeneity variance components.

We also conducted **sensitivity analyses based on important trial and participant characteristics**, namely 4) blinding of assessors, 5) specific population subgroups, and 6) excluding the GDS and EPDS (two self-report scales specifically focused on geriatric and perinatal depression, respectively). For these all analyses we used the same pooling method as in our main model, resulting in the same three levels of heterogeneity variance components.

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Level | tau2 | *I*2 |
| Main model  | Study | 0,241 | 59,28 |
| Rating  | 0,016 | 3,90 |
| Instrument | 0,074 | 18,13 |
| *Sensitivity analyses on methodological decisions* |
| 1) Pre-aggregating | Self-report | 0,264 | 84,94 |
| Clinician  | 0,435 | 89,34 |
| 2) One instrument per study | Self-report | 0,270 | 81,22 |
| Clinician  | 0,495 | 88,64 |
| 3) Different levels of correlations | Study | 0,279 | 65,33 |
| Rating  | 0,000 | 7,10 |
| Instrument | 0,072 | 16,91 |
| *Sensitivity analyses based on trial and participant characteristics* |
| 4) Blinding of assessors | Study | 0,231 | 58,40 |
| Rating  | 0,015 | 3,87 |
| Instrument | 0,074 | 18,57 |
| 5) Specific population subgroups | Study | 0,286 | 65,88 |
| Rating  | 0,000 | 0,000 |
| Instrument | 0,072 | 16,57 |
| 6) Excluding GDS and EPDS | Study | 0,195 | 57,51 |
| Rating  | 0,000 | 0,000 |
| Instrument | 0,067 | 19,67 |
| 7) Only trials reporting BDI and HRSD | Study | 0,173 | 47,02 |
| Rating  | 0,000 | 0,000 |
| Instrument | 0,09 | 25,16 |

### Multimodel inference: best models

We employed a meta-analytic multimodel inference technique (Anderson, 2007; Buckland et al., 1997) to explore if there were study characteristics that predicted the degree to which patient and clinician-rated outcomes differ in a study. In the first step of multimodel inference, a set of putative predictors is defined. In our analysis, we pre-specified the following potential moderators of the effect size difference between patient and clinician-reported outcomes: masking of the assessor (masked vs. unmasked, considering self-reports as unmasked), overall risk of bias score (high risk/some concerns vs. low risk), target group (specific subgroup vs general adults), control group (waitlist vs. other control groups), country (western vs non-western), and type of treatment (cbt vs other). The next step involved fitting a separate (meta-regression) model for each possible combination of these predictors. This means that the effect of each predictor is estimated not once, but in many models, including more complex multivariable models that control for the effect of other predictors. Based on the fit of each model (as measured by the corrected Akaike Information Criterion; AICc), it is then possible to create a weighted average for each variable, representing its importance in predicting effect size differences across all fitted models. Lower AICc means that the model fits better.

The following table presents the **best 10 models derived from the multimodel inference analysis,** with meta-regression models restricted to a maximum of 6 terms, leading to a total of 58700 fitted models.

|  |  |  |
| --- | --- | --- |
| **Model** | **AICC** | **Weights** |
| yi ~ 1 + waitlist + specific\_subgroup + non\_western + rating\_clinician:specific\_subgroup | 400.8632 | 0.08884671 |
| yi ~ 1 + waitlist + specific\_subgroup + non\_western + non\_cbt + rating\_clinician:specific\_subgroup | 401.0533 | 0.08078898 |
| yi ~ 1 + blinded + waitlist + specific\_subgroup + non\_western + rating\_clinician:specific\_subgroup | 402.4824 | 0.03953949 |
| yi ~ 1 + waitlist + specific\_subgroup + non\_western + non\_cbt + rating\_clinician:specific\_subgroup + rating\_clinician:non\_cbt | 402.5933 | 0.03740684 |
| yi ~ 1 + blinded + waitlist + specific\_subgroup + non\_western + non\_cbt + rating\_clinician:specific\_subgroup | 402.6548 | 0.03627438 |
| yi ~ 1 + waitlist + specific\_subgroup + non\_western + rating\_clinician:specific\_subgroup + rating\_clinician:non\_western | 402.6752 | 0.03590613 |
| yi ~ 1 + waitlist + specific\_subgroup + non\_western + rating\_clinician:waitlist + rating\_clinician:specific\_subgroup | 402.6846 | 0.03573812 |
| yi ~ 1 + high\_rob + waitlist + specific\_subgroup + non\_western + rating\_clinician:specific\_subgroup | 402.7260 | 0.03500562 |
| yi ~ 1 + high\_rob + waitlist + specific\_subgroup + non\_western + non\_cbt + rating\_clinician:specific\_subgroup | 402.7548 | 0.03450472 |
| yi ~ 1 + waitlist + specific\_subgroup + non\_western + non\_cbt + rating\_clinician:specific\_subgroup + rating\_clinician:non\_western | 402.8792 | 0.03242352 |

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### GRADE assessments

The strength of evidence of our main findings was assessed following GRADE (Schünemann, Brożek, Guyatt & Oxman, 2013).

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Analysis** | **k**  | **n**  | **SMD*****(Δg)*** | **95% CI** | **PI** | **RoB** | **Inconsistency** | **Imprecision** | **Indirectness** | **Publication bias** | **Overall** |
| Primary: Self-reports vs Clinician-rated | 283 | 7250 | 0.12 | 0.03 to 0.21 | -1.04 to 1.27 | Serious | Serious | Not serious | Not serious | Not serious | ⨁⨁◯◯ Low  |
| Self-reports vs. Unmasked clinicians | 49 | 1390 | 0.20 | -0.03 to 0.43 | -1.07 to 1.47 | Serious | Serious | Serious | Not serious | Not serious | ⨁◯◯◯ Very Low  |
| Self-reports vs. Masked clinicians | 234 | 5749 | 0.10 | 0.00 to 0.20 | -1.04 to 1.24 | Serious | Serious | Not serious | Not serious | Not serious | ⨁⨁◯◯ Low  |

Abbreviations: k= number of effect sizes; n= number of participants; SMD*(Δg)* = Standardized mean difference between self-reports and clinician-rated outcomes; 95% CI= 95% Confidence intervals; *I*2 (95% CI)= I-squared statistic measuring heterogeneity, with accompanying confidence intervals; PI = Prediction intervals; RoB= Risk of bias

* **RoB:** All analyses were downgraded one level in all analyses because only 7% of the included trials was rated at low RoB.
* **Inconsistency:** All analyses were downgraded one level due to substantial heterogeneity indicated by wide prediction intervals.
* **Imprecision:** We rated imprecision considering 1) the optimal information size, which was estimated to be a samlpe size of 400 participants to detect an effect size of 0.2 (with  α = 0.05 and β = 0.20), and 2) whether the 95% CI excludes no effect.
* **Indirectness:** We rated the generalizability of the current results to observer vs self ratings outside of the current study. We considered the included scales to be representative of the ones used commonly used in practice and clinical research.
* **Publication bias:** We did not downgrade for publication bias, as there is low risk for publication bias to affect our outcome of interest (difference between self-report and clinician ratings).

References

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