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# **eMethods**

## **Full search string for PubMed**

(Psychotherapy [MH] OR psychotherap\*[All Fields] OR cbt[All Fields] OR "behavior therapies"[All Fields] OR "behavior therapy"[All Fields] OR "behavior therapeutic"[All Fields] OR "behavior therapeutical"[All Fields] OR "behavior therapeutics"[All Fields] OR "behavior therapeutist"[all Fields] OR "behavior therapeutists"[All Fields] OR "behavior treatment"[All Fields] OR "behavior treatments"[All Fields] OR "behaviors therapies"[All Fields] OR "behaviors therapy"[All Fields] OR "behaviors therapeutics"[All Fields] OR "behaviors therapeutic"[All Fields] OR "behaviors therapeutical"[All Fields] OR "behaviors therapeutist"[All Fields] OR "behaviors therapeutists"[All Fields] OR "behaviors treatment"[All Fields] OR "behaviors treatments"[All Fields] OR "behavioral therapies"[All Fields] OR "behavioral therapy"[All Fields] OR "behavioral therapeutics"[All Fields] OR "behavioral therapeutic"[All Fields] OR "behavioral therapeutical"[All Fields] OR "behavioral therapeutist"[All Fields] OR 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## **eTable 1. Overview of outcomes extracted from the included trials**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Study** | **Category of somatic disorder** | **Depression** | **Quality of life** | **Glycemic index** | **Pain** | **Mortality** |
| Abas, 2018 | HIV | PHQ-9 | - | - | - | - |
| Ahmadpanah, 2016 | Cardiometabolic | BDI | - | - | - | - |
| Bedard, 2014 | Other | BDI-II | - | - | - | - |
| Beutel, 2014 | Oncological | HADS-D | EORTC-QLQ-C30 | - | EORTC-QLQ-C30 - Pain | - |
| Boele, 2018 | Oncological | CES-D | SF-36 | - | - | - |
| Boeschoten, 2017 | Neurological | BDI-II | EQ-5D | - | - | - |
| Buhrman, 2015 | Other | MADRS-S | QOLI | - | MPI - Pain severity | - |
| Burns, 2007 | Other | PHQ-9 | - | - | - | - |
| Chesney, 2003 | HIV | CES-D | - | - | - | - |
| De Groot, 2019 | Cardiometabolic | BDI-II | SF-12 | HbA1c | - | - |
| De Jong, 2018 | Other | HAM-D | SF-36 | - | SF-36 - Bodily pain | - |
| Dekker, 2012 | Cardiometabolic | BDI-II | MLHF | - | - | - |
| Desautels, 2017 | Oncological | HAM-D | - | - | - | - |
| Dindo, 2012 | Neurological | HAM-D | SF-36 | - | - | - |
| Dindo, 2019 | Neurological | HAM-D | WHOQOL-BREF | - | - | - |
| Dobkin, 2011 | Neurological | HAM-D | SF-36 | - | - | - |
| Doering, 2013 | Cardiometabolic | BDI | - | - | - | - |
| Dong, 2019 | Oncological | HAM-D | MUNSH | - | - | - |
| Duarte, 2009 | Other | BDI | SF-36 | - | - | CONSORT flow diagram |
| Evans, 1995 | Oncological | CES-D | - | - | - | - |
| Fann, 2015 | Other | HAM-D | - | - | - | CONSORT flow diagram |
| Freedland, 2009 | Cardiometabolic | HAM-D | SF-36 | - | - | - |
| Freedland, 2015 | Cardiometabolic | HAM-D | SF-12 | - | - | - |
| Gellis, 2008 | Cardiometabolic | HAM-D | QOLI | - | - | - |
| Gellis, 2010 | Other | HAM-D | SF-36 | - | - | - |
| Heckman, 2011 | HIV | GDS | - | - | - | - |
| Heckman, 2013 | HIV | GDS | - | - | - | - |
| Heckman, 2017 | HIV | BDI | - | - | - | - |
| Hermanns, 2015 | Cardiometabolic | PHQ-9 | EQ-5D | HbA1c | - | - |
| Herrmann-Lingen, 2016 | Cardiometabolic | HADS-D | - | - | - | Mortality reported as part of safety analysis |
| Huang, 2016 | Cardiometabolic | CES-D | SF-36 | HbA1c | - | - |
| Hum, 2019 | Neurological | QIDS-SR | WHOQOL-BREF | - | - | - |
| Hummel, 2017 | Other | HAM-D | IADL | - | - | Mortality reported among trial outcomes |
| Jalali, 2019 | HIV | BDI-II | - | - | - | - |
| Kamga, 2017 | Other | PHQ-9 | - | - | - | - |
| Kelly, 1993 | HIV | CES-D | - | - | - | - |
| Kim, 2018 | Oncological | HADS-D | EORTC-QLQ-C30 | - | EORTC-QLQ-C30 - Pain | - |
| Lamers, 2010 | Other | BDI | SF-36 | - | - | CONSORT flow diagram |
| Larcombe, 1984 | Neurological | HAM-D | - | - | - | - |
| Lloyd-Williams, 2018 | Oncological | PHQ-9 | - | - | - | Survival reported as trial outcome |
| Lök, 2019 | Neurological | CSDD | QOL-AD | - | - | - |
| Lundgren, 2016 | Cardiometabolic | PHQ-9 | MLHF | - | - | - |
| Lustman, 1998 | Cardiometabolic | BDI | - | GHb | - | - |
| Martin, 2015 | Neurological | BDI-II | SF-36 | - | SF-36 - Bodily pain | - |
| Mohr, 2000 | Neurological | POMS-D | - | - | - | - |
| Mossey, 1996 | Other | GDS | - | - | - | - |
| Nakimuli, 2015 | HIV | SRQ-20 | Function assessment (locally developed) | - | - | CONSORT flow diagram |
| Newby, 2017 | Cardiometabolic | PHQ-9 | SF-12 | HbA1c | - | - |
| Nobis, 2015 | Cardiometabolic | CES-D | SF-12 | HbA1c | - | - |
| Nollett, 2016 | Other | BDI-II | EQ-5D | - | - | - |
| Olukolade, 2017 | Cardiometabolic | BDI | - | - | - | - |
| O'Neil, 2014 | Cardiometabolic | PHQ-9 | SF-12 | - | - | - |
| Onuigbo, 2019 | Other | BDI-II | - | - | - | - |
| Penckofer, 2012 | Cardiometabolic | CES-D | SF-12 | HbA1c | - | - |
| Petersen, 2014 | HIV | PHQ-9 | - | - | - | - |
| Pibernik, 2015 | Cardiometabolic | CES-D | SF-12 | HbA1c | - | - |
| Poleshuck, 2014 | Other | HAM-D | - | - | MPI- Pain severity | - |
| Qiu, 2013 | Oncological | HAM-D | FACT-B | - | - | - |
| Ransom, 2008 | HIV | BDI-II | - | - | - | - |
| Richards, 2018 | Cardiometabolic | BDI-II | EQ-5D | - | - | “No deaths were recorded in either arm of the trial between baseline and the final follow-up” |
| Safren, 2009 | HIV | HAM-D | - | - | - | - |
| Safren, 2014 | Cardiometabolic | MADRS | - | HbA1c | - | - |
| Safren, 2016 | HIV | MADRS | - | - | - | - |
| Savard, 2006 | Oncological | HAM-D | EORTC-QLQ-C30 | - | - | CONSORT flow diagram |
| Serfaty, 2019 | Oncological | BDI-II | EQ-5D | - | - | CONSORT flow diagram |
| Simoni, 2013 | HIV | BDI | - | - | - | - |
| Simson, 2008 | Cardiometabolic | HADS-D | - | - | - | - |
| Strong, 2008 | Oncological | SCL20-D | EORTC-QLQ-C30 | - | EORTC-QLQ-C30 - Pain | CONSORT flow diagram |
| Taylor, 2009 | Cardiometabolic | HAM-D | - | - | - | - |
| Teri, 1997 | Neurological | HAM-D | - | - | - | - |
| Thomas, 2019 | Cardiometabolic | PHQ-9 | EQ-5D | - | - | - |
| Tovote, 2014 | Cardiometabolic | HAM-D7 | - | - | - | - |
| Turner, 2013 | Cardiometabolic | BDI-II | - | - | - | CONSORT flow diagram |
| Van Bastelaar, 2011 | Cardiometabolic | CES-D | - | HbA1c | - | - |
| Zhao, 2019 | Other | EPDS | - | - | - | - |

Abbreviations:

*Depression*

BDI (Beck Depression Inventory); PHQ-9 (Patient Health Questionnaire); HAM-D (Hamilton Depression Rating Scale); HADS-D (Hospital Anxiety and Depression Scale–Depression subscale); MADRS (Montgomery–Åsberg Depression Rating Scale); CES-D (Center for Epidemiological Studies Depression Scale); GDS (Geriatric Depression Scale); QIDS-SR (Quick Inventory of Depressive Symptomatology–Self-report); CSDD (Cornell Scale for Depression in Dementia); POMS-D (Profile of Mood States – Depression); SRQ-20 (Self Reporting Questionnaire); SCL (Hopkins Symptom Checklist-20); EPDS (Edinburgh Postnatal Depression Scale)

*Quality of life*

EORTC-QLQ-C30 (European Organisation for Research and Treatment of Cancer Quality of Life questionnaire); EQ-5D-5 (European Quality of Life – 5 Dimensions); FACT (Functional assessment of Cancer Therapy – Breast); IADL (Instrumental Activities of Daily Living); MLHF (Minnesota Living with Heart Failure Questionnaire); MUNSH (Memorial University of Newfoundland Scale of Happiness); QOL‐AD (Quality of Life in Alzheimer's Disease); QOLI (Quality of Life Inventory); SF-12 (Short-Form 12 Health Survey Scale); SF-36 (Short-Form 36-item Health Survey); WHOQOL-BREF (World Health Organization Quality of Life- BREF)

*Glycemic index*

GHb (glycosylated hemoglobin); HbA1c (glycated hemoglobin)

*Pain*

[MPI (Multidimensional Pain Inventory)](http://scireproject.com/outcome-measures/outcome-measure-tool/multidimensional-pain-inventory-mpi-sci-version/)

## **Algorithm for the selection of depression measures**

We selected the depression measures in the following order:

* HAMD
* BDI I or II
* Another clinician-rated instrument;
* Another self-report instrument, with priority for:
  + PHQ-9
  + CES-D
  + HADS-D
  + GDS over IDS
  + HADSD over POMS
  + EPDS over DASS-D
  + MMPI-D over DACL
  + Zung over Lubin

**Development of the algorithm:**

The algorithm was built by prioritizing the HAM-D, due to being clinician-rated (thus allowing blinding), and due to being a widely used instrument in depression therapy research, both in psychotherapy and pharmacotherapy. The next prioritized instrument was the BDI, given that is the most frequently used instrument in our database. After the BDI, we prioritized any clinician-rated instrument over self-reports. If only self-reports were reported, we selected one following the above order, which is based on their frequency of use and psychometric properties.

## **eTable 2. Overview of Quality of life instruments**

|  |  |  |  |
| --- | --- | --- | --- |
| **Instrument** | **Description** | **Subscales** | **Trials in which is included** |
| EORTC-QLQ-C30  (European Organisation for Research and Treatment of Cancer (EORTC) Quality of Life questionnaire) | Self-report assessing cancer patients’ quality of life. It contains 15 subscales within 3 domains that measure global health status/quality of life, functional status and symptom status. | * Global quality of life:  1. Global health status  * Functional status:  1. physical function 2. role function 3. emotional function 4. cognitive function 5. social function  * Symptom status:  1. Fatigue 2. nausea and vomiting 3. pain 4. dyspnoea 5. insomnia 6. appetite loss 7. constipation 8. diarrhea 9. financial difficulties | Beutel, 2014  Kim, 2018  Savard, 2006  Strong, 2008 |
| EQ-5D-5  (European Quality of Life – 5 Dimensions) | Standardized self-report measure of HRQL that provides a generic measure of health for clinical and economic appraisal. It consist of two main parts: 1) descriptive system using a 5-dimension scale, resulting in an index score; 2) visual analogue scale (VAS), resulting in a total score (0-100). | * Index:  1. mobility 2. self-care 3. usual activities 4. pain/discomfort 5. anxiety/depression  * VAS | Hermanns, 2015  Richards, 2018  Boeschoten, 2017  Nollett, 2016  Serfaty, 2019  Thomas, 2019 |
| FACT-B  (Functional assessment of Cancer Therapy – Breast) | 44-item self-report instrument designed to measure multidimensional quality of life (QL) in patients with breast cancer. | * Physical Well-Being (PWB) * Emotional Well-Being (EWB) * Social Well-Being (SWB) * Functional Well-Being (FWB) * Relationship with Doctor (RWD). | Qiu, 2013 |
| Function assessment method locally developed (in Nakimuli et al., 2015) | 5-items scale. Items were derived from qualitative interviews with individuals and their caregivers. These interviews were about their expectations regarding function outcomes. | 1. household (e.g. washing clothes, sweeping the yard) 2. field (digging, grazing animals) 3. social (attending social events) 4. job or school-related tasks (participating in income-generating activities, attending school or skills training courses) 5. Tasks related to personal hygiene (eg, bathing). | Nakimuli, 2015 |
| IADL  (Instrumental Activities of Daily Living) | Scale assessing everyday functional competence | Ability to use telephone, shopping, food preparation, housekeeping, laundry, mode of transportation, responsibility for own medication, ability to handle finances… | Hummel, 2017 |
| MLHF  (Minnesota Living with Heart Failure Questionnaire) | Self-report measuring health-related quality of life (HRQL), including 21 items assessing physical, emotional and socioeconomic ways in which heart failure can adversely affect a patient’s life. | 1. Physical 2. Socio-economic 3. Emotional/psychological aspects | Dekker, 2012  Lundgren, 2016 |
| MUNSH  (Memorial University of Newfoundland Scale of Happiness) | Self-report instrument of subjective well-being with 24 items that address affect during the preceding month and longer-term affective experiences. | Four components:   1. Positive Affect 2. Negative Affect 3. Positive Experience 4. Negative Experience | Dong, 2019 |
| QOL‐AD  (Quality of Life in Alzheimer's Disease) | Scale of 13 items providing information about quality of life in patients with Alzheimer Disease. This scale assesses a variety of life domains, including the patient's physical health, mood, relationships, activities, and ability to complete tasks. | Scoring is based on the simple aggregation of the points obtained from all items. | Lök, 2019 |
| QOLI  (Quality of Life Inventory) | 32 items assessing multidimensional quality of life and life satisfaction. | The assessment yields an overall score and profile in 16 areas of life; health, self-esteem, goals and values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighborhood, and community. | Buhrman, 2015  Gellis, 2008 |
| SF-12  (Short-Form 12-item Health Survey Scale) | 12-item short form self-report derived from the SF-36. It consists of 8 domains measuring HRQL, and scores can be summarized into a mental component score (MCS) and a physical component score (PCS). | * PCS:  1. General health 2. Physical function 3. Role physical 4. Bodily pain  * MCS:  1. Mental health 2. Role emotional 3. Social function 4. Vitality | Freedland, 2015  Newby, 2017  Nobis, 2015 (Ebert, 2016)  O'Neil, 2014  Penckofer, 2012  Pibernik, 2015  De Groot, 2019 |
| SF-36  (Short-Form 36-item Health Survey) | 36-item, patient-reported survey of patient health. It consists of 8 domains measuring HRQL, and scores can be summarized into a mental component score (MCS) and a physical component score (PCS). | * PCS:  1. General health 2. Physical function 3. Role physical 4. Bodily pain  * MCS:  1. Mental health 2. Role emotional 3. Social function 4. Vitality | Freedland, 2009  Gellis, 2010  Huang, 2016  Dindo, 2012  Dobkin, 2011  Martin, 2015  Boele, 2018  De Jong, 2018  Duarte, 2009  Lamers, 2010 |
| WHOQOL-BREF  (World Health Organization Quality of Life- BREF) | 26-item questionnaire that assesses quality of life across four domains: physical health, psychological health, social relationships, and the environment. | Domains:   1. Psychological health 2. Social relationships 3. Environment 4. Physical health | Dindo, 2019  Hum, 2019 |

## **Changes to** **protocol**

In the registered protocol for this systematic review and meta-analysis (<https://osf.io/q6z3p>) we specified that the main outcomes of this study would be “depression, quality of life, functioning, and health-related outcomes”. Given the substantial overlap in the concepts of quality of life and functioning we decided to include only quality of life as an overarching outcome, which in some occasions included measures described as “functioning”.

# **eResults**

## **References of included studies**

|  |  |
| --- | --- |
| Study | Full reference |
| Abas, 2018 | Abas M, Nyamayaro P, Bere T, et al. Feasibility and acceptability of a task-shifted intervention to enhance adherence to HIV medication and improve depression in people living with HIV in Zimbabwe, a low income country in sub-Saharan Africa. AIDS and Behavior 2018; 22(1): 86-101. |
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| Dindo, 2019 | Dindo LN, Recober A, Calarge CA, Zimmerman BM, Weinrib A, Marchman JN, Turvey C. One-Day Acceptance and Commitment Therapy Compared to Support for Depressed Migraine Patients: a Randomized Clinical Trial. Neurotherapeutics. 2019. |
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## **eTable 3. Characteristics of the 75 included studies**

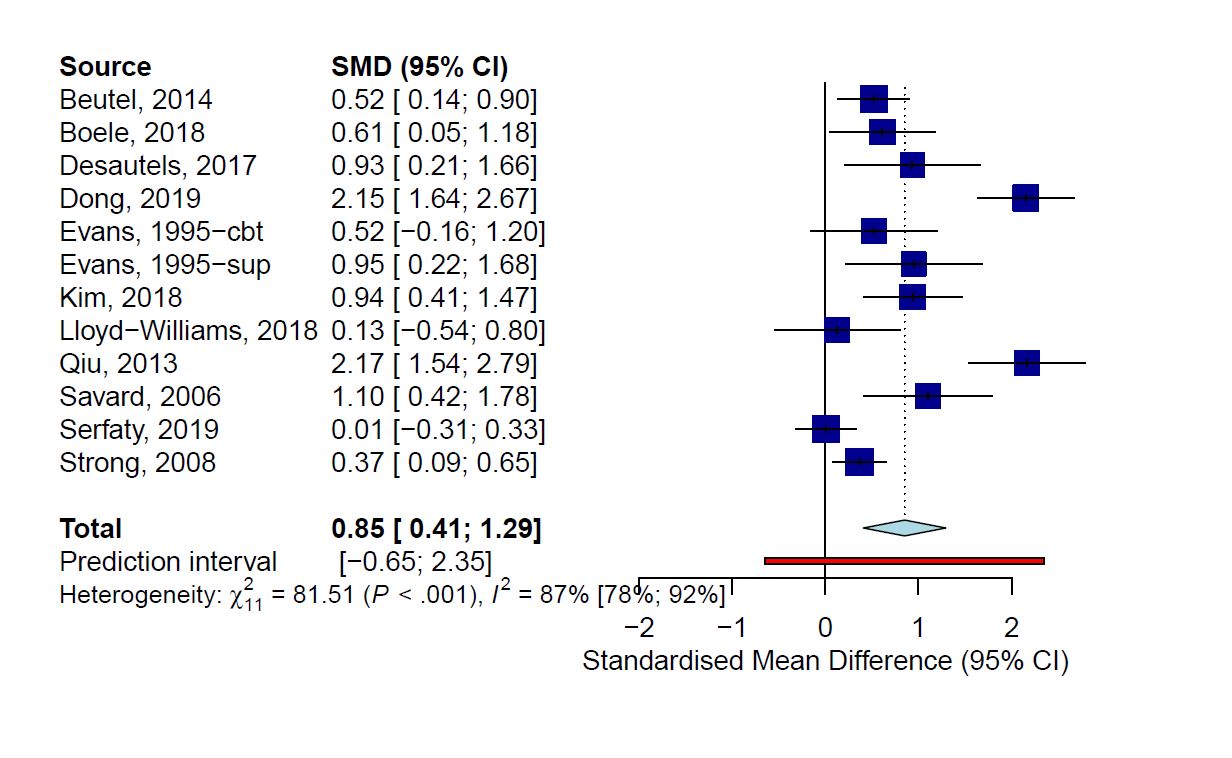
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| **Study** | **Somatic disease** | **Category** | **Country** | **Rcr** | **Dx** | **Age** | **Wom** | **Psy** | **Frm** | **Sess** | **Ctrl** | **SG** | **AC** | **BA** | **ITT** | **SR** |
| Abas, 2018 | HIV | HIV | Zimbabwe | Med | - | 38 | 0,66 | pst | ind | 5 | CAU | + | + | SR | + | - |
| Ahmadpanah, 2016 -3rd | Hypertension | Cardiometabolic | Iran | Med | - | 36 | 1 | 3rd | ind | 8 | CAU | + | + | SR | - | - |
| Ahmadpanah, 2016 -str | Hypertension | Cardiometabolic | Iran | Med | - | 36 | 1 | Oth | grp | 8 | CAU | + | + | SR | - | - |
| Bedard, 2014 | Traumatic brain injury | Other | Canada | Com | - | 46 | 0,45 | 3rd | grp | 10 | WL | + | + | SR | - | - |
| Beutel, 2014 | Breast cancer | Oncological | Germany | Med | + | 52 | 1 | dyn | ind | 18 | CAU | + | + | + | + | - |
| Boele, 2018 | Glioma | Oncological | NL | Com | - | 45 | 0,55 | pst | gsh | 5 | WL | + | + | SR | + | + |
| Boeschoten, 2017 | Multiple sclerosis | Neurological | NL | Com | - | 49 | 0,8 | pst | gsh | 5 | WL | + | + | SR | + | + |
| Buhrman, 2015 | Chronic pain | Other | Sweden | Com | - | 51 | 0,85 | cbt | gsh | 6 | WL | + | + | SR | + | - |
| Burns, 2007 | Surgery for hip fracture | Other | UK | Med | - | 81 | 0,77 | oth | ind | 6 | CAU | + | + | + | + | - |
| Chesney, 2003 | HIV | HIV | US | Com | - | 39 | 0 | oth | grp | 10 | oth | - | - | SR | - | - |
| De Groot, 2019 -cbt | Diabetes | Cardiometabolic | US | Com | + | 56 | 0,77 | cbt | ind | 10 | CAU | + | + | + | + | - |
| De Groot, 2019 -cbt + exer | Diabetes | Cardiometabolic | US | Com | + | 56 | 0,77 | cbt | ind | 22 | CAU | + | + | + | + | - |
| De Jong, 2018 | Chronic pain | Other | US | Com | + | 51 | 0,75 | 3rd | grp | 7 | WL | - | - | - | + | + |
| Dekker, 2012 | Heart failure | Cardiometabolic | US | Med | - | 66 | 0,74 | cbt | ind | 1 | CAU | + | + | SR | + | - |
| Desautels, 2017 | Breast cancer | Oncological | Canada | Med | - | 57 | 1 | cbt | ind | 8 | WL | + | + | + | + | - |
| Dindo, 2012 | Migraine | Neurological | US | Med | + | 33 | 0,93 | 3rd | grp | 1 | WL | - | - | - | + | - |
| Dindo, 2019 | Migraine | Neurological | US | Com | + | 36 | 0,83 | 3rd | grp | 1 | oth | - | - | + | + | - |
| Dobkin, 2011 | Parkinson’s Disease | Neurological | US | Com | + | 65 | 0,4 | cbt | ind | 10 | CAU | + | - | + | + | - |
| Doering, 2013 | Recovering from cardiac surgery | Cardiometabolic | US | Med | + | 64 | 0,31 | cbt | ind | 8 | CAU | + | - | SR | + | - |
| Dong, 2019 | Colorectal cancer | Oncological | China | Med | - | 59 | 0,5 | lrt | tele | 6 | oth | + | + | + | + | - |
| Duarte, 2009 | End-stage renal disease | Other | Brazil | Med | + | 53 | 0,59 | cbt | grp | 12 | CAU | - | + | SR | - | - |
| Evans, 1995 - cbt | Cancer | Oncological | US | Med | - | 54 | 0,35 | cbt | grp | 8 | CAU | - | - | SR | - | - |
| Evans, 1995 - sup | Cancer | Oncological | US | Med | - | 54 | 0,35 | sup | grp | 8 | CAU | - | - | SR | - | - |
| Fann, 2015 - ind | Traumatic Brain Injury | Other | US | Com | + | 46 | 0,37 | cbt | tele | 10 | CAU | + | - | + | - | - |
| Fann, 2015 - tel | Traumatic Brain Injury | Other | US | Com | + | 46 | 0,37 | cbt | ind | 9 | CAU | + | - | + | - | - |
| Freedland, 2009 -cbt | Coronary artery bypass surgery | Cardiometabolic | US | Med | + | 61 | 0,5 | cbt | ind | 11 | CAU | + | + | + | + | - |
| Freedland, 2009 -ssm | Coronary artery bypass surgery | Cardiometabolic | US | Med | + | 61 | 0,5 | sup | ind | 8 | CAU | + | + | + | + | - |
| Freedland, 2015 | Heart failure | Cardiometabolic | US | Med | + | 56 | 0,46 | cbt | ind | 11 | CAU | + | + | + | + | + |
| Gellis, 2008 | Cardiovascular disease | Cardiometabolic | US | Med | - | 77 | 0,87 | pst | ind | 6 | CAU | + | - | + | - | - |
| Gellis, 2010 | Medically ill home care patients | Other | US | Med | - | 76 | 0,92 | pst | ind | 6 | CAU | - | + | + | - | - |
| Heckman, 2011 -cop | HIV | HIV | US | Com | - | 55 | 0,33 | oth | grp | 7 | CAU | + | - | SR | + | - |
| Heckman, 2011 -sup | HIV | HIV | US | Com | - | 55 | 0,33 | sup | grp | 7 | CAU | + | - | SR | + | - |
| Heckman, 2013 -cop | HIV | HIV | US | Med | - | 59 | 0,39 | oth | oth | 6 | CAU | + | - | SR | + | - |
| Heckman, 2013 -sup | HIV | HIV | US | Med | - | 59 | 0,39 | sup | oth | 7 | CAU | + | - | SR | + | - |
| Heckman, 2017 | HIV | HIV | US | Com | + | 52 | 0,37 | ipt | tele | 8 | CAU | + | - | SR | + | - |
| Hermanns, 2015 | Diabetes | Cardiometabolic | Germany | Med | - | 43 | 0,57 | cbt | grp | 5 | CAU | - | + | SR | + | - |
| Herrmann-Lingen, 2016 | Coronary artery disease | Cardiometabolic | Germany | Med | - | 59 | 0,21 | dyn | oth | 16 | CAU | + | - | + | + | + |
| Huang, 2016 | Diabetes | Cardiometabolic | Taiwan | Med | - | 56 | 0,52 | cbt | grp | 12 | CAU | - | - | SR | - | - |
| Hum, 2019 | Epilepsy | Neurological | Canada | Com | - | 36 | 0,71 | 3rd | oth | 8 | oth | + | - | SR | + | - |
| Hummel, 2017 | Hospitalized for acute illness | Other | Germany | Med | - | 82 | 0,8 | cbt | grp | 13 | WL | + | - | + | + | - |
| Jalali, 2019 | HIV | HIV | Iran | Oth | - | 32 | 0 | oth | grp | 11 | WL | - | - | SR | - | - |
| Kamga, 2017 | Age-related eye disease | Oth | Canada | Med | - | 76 | 0,63 | cbt | gsh | 8 | WL | + | + | SR | + | + |
| Kelly, 1993 - cbt | HIV | HIV | US | Com | - | 34 | 0 | cbt | grp | 8 | CAU | - | - | SR | - | - |
| Kelly, 1993 - sup | HIV | HIV | US | Com | - | 34 | 0 | sup | grp | 8 | CAU | - | - | SR | - | - |
| Kim, 2018 | Breast cancer | Oncological | Korea | Med | - | 48 | 1 | cbt | oth | 7 | CAU | + | - | SR | - | - |
| Lamers, 2010 | Chronic illnesses | Other | NL | Med | + | 71 | 0,47 | cbt | ind | 4 | CAU | + | + | SR | + | - |
| Larcombe, 1984 | Multiple sclerosis | Neurological | Australia | Com | + | 43 | 0,68 | cbt | grp | 6 | WL | - | - | + | - | - |
| Lloyd-Williams, 2018 | Cancer (palliative care) | Oncological | UK | Med | - | 65 | 0,71 | oth | ind | 1 | CAU | - | + | SR | + | - |
| Lök, 2019 | Alzheimer | Neurological | Turkey | Med | - | NR | 0,57 | lrt | grp | 8 | CAU | + | + | - | + | - |
| Lundgren, 2016 | Heart failure | Cardiometabolic | Sweden | Med | - | 63 | 0,42 | cbt | gsh | 7 | oth | + | + | SR | + | + |
| Lustman, 1998 | Diabetes | Cardiometabolic | US | Com | + | 55 | 0,6 | cbt | ind | 10 | CAU | + | + | SR | - | - |
| Martin, 2015 | Migraine or tension-type headache | Neurological | Australia | Com | + | 41 | 0,74 | cbt | ind | 12 | WL | + | + | SR | - | - |
| Mohr, 2000 | Multiple sclerosis | Neurological | US | Med | - | 42 | 0,72 | cbt | tele | 8 | CAU | - | - | SR | + | - |
| Mossey, 1996 | Hospitalized for acute illness | Other | US | Med | - | 71 | 0,78 | ipt | ind | 10 | CAU | - | - | SR | - | - |
| Nakimuli, 2015 | HIV | HIV | Uganda | Med | + | 44 | 0,42 | sup | grp | 8 | oth | + | + | SR | + | - |
| Newby, 2017 | Diabetes | Cardiometabolic | Australia | Com | + | 47 | 0,71 | cbt | gsh | 6 | WL | + | + | SR | + | + |
| Nobis, 2015 | Diabetes | Cardiometabolic | Germany | Com | - | 51 | 0,63 | oth | gsh | 6 | oth | + | - | SR | + | + |
| Nollett, 2016 | Visual impairment | Other | UK | Med | - | 70 | 0,59 | pst | ind | 6 | CAU | + | + | SR | - | - |
| Olukolade, 2017 | Stroke survivors | Cardiometabolic | Nigeria | Med | - | NR | 0,57 | cbt | ind | 9 | WL | + | - | SR | - | - |
| O'Neil, 2014 | Acute coronary syndrome | Cardiometabolic | Australia | Med | - | 60 | 0,25 | cbt | tele | 8 | CAU | + | + | + | + | - |
| Onuigbo, 2019 | Blindness | Other | Nigeria | Med | - | 25 | 0,54 | cbt | grp | 14 | CAU | + | + | SR | + | - |
| Penckofer, 2012 | Diabetes | Cardiometabolic | US | Com | - | 54 | 1 | cbt | grp | 8 | CAU | + | - | SR | + | - |
| Petersen, 2014 | HIV/AIDS | HIV | South Africa | Med | + | 37 | 0,74 | ipt | grp | 8 | CAU | + | - | SR | - | - |
| Pibernik, 2015 | Diabetes | Cardiometabolic | Croatia | Med | - | 58 | 0,54 | cbt | grp | 6 | CAU | + | + | SR | + | - |
| Poleshuck, 2014 | Chronic pelvic pain | Other | US | Med | + | 37 | 1 | ipt | ind | 4 | CAU | + | - | - | + | - |
| Qiu, 2013 | Breast cancer | Oncological | China | Med | + | 51 | 1 | cbt | grp | 10 | WL | + | + | + | + | - |
| Ransom, 2008 | HIV/AIDS | HIV | US | Com | + | 44 | 0,16 | ipt | tele | 6 | CAU | - | - | SR | + | - |
| Richards, 2018 | Coronary heart disease | Cardiometabolic | UK | Med | - | 65 | 0,48 | bat | ind | 8 | CAU | + | + | SR | + | + |
| Safren, 2009 | HIV | HIV | US | Com | + | NR | 0,16 | cbt | ind | 10 | CAU | - | - | + | + | - |
| Safren, 2014 | Diabetes | Cardiometabolic | US | Med | + | 57 | 0,49 | cbt | ind | 10 | CAU | + | + | + | - | - |
| Safren, 2016 -cbt | HIV | HIV | US | Com | + | 47 | 0,31 | cbt | ind | 11 | CAU | + | - | + | + | - |
| Safren, 2016 -sup | HIV | HIV | US | Com | + | 47 | 0,31 | sup | ind | 11 | CAU | + | - | + | + | - |
| Savard, 2006 | Breast cancer | Oncological | Canada | Com | - | 52 | 1 | cbt | ind | 8 | WL | + | + | + | - | - |
| Serfaty, 2019 | Advanced cancer | Oncological | UK | Med | + | 60 | 0,66 | cbt | ind | 5 | CAU | + | + | SR | + | + |
| Simoni, 2013 | HIV | HIV | US | Com | - | 46 | 0,28 | cbt | ind | 11 | CAU | + | + | + | + | - |
| Simson, 2008 | Diabetic foot syndrome | Cardiometabolic | Germany | Med | - | 61 | 0,43 | sup | ind | 5 | CAU | - | - | SR | + | - |
| Strong, 2008 | Cancer (various) | Oncological | UK | Med | + | 57 | 0,71 | pst | ind | 10 | CAU | + | + | SR | + | - |
| Taylor, 2009 | High risk for coronary artery disease | Cardiometabolic | US | Com | - | 62 | 0,67 | cbt | ind | 15 | WL | - | - | + | + | - |
| Teri, 1997 - ba | Dementia | Neurological | US | Med | + | 76 | 0,47 | bat | oth | 9 | CAU | - | - | + | - | - |
| Teri, 1997 - pst | Dementia | Neurological | US | Med | + | 76 | 0,47 | pst | oth | 9 | CAU | - | - | + | - | - |
| Thomas, 2019 | Post-stroke depression | Cardiometabolic | UK | Com | - | 66 | 39,6 | bat | ind | 8 | CAU | + | + | + | + | + |
| Tovote, 2014 - cbt | Diabetes | Cardiometabolic | NL | Med | - | 53 | 0,49 | 3rd | ind | 8 | WL | + | - | - | + | - |
| Tovote, 2014 - mbct | Diabetes | Cardiometabolic | NL | Med | - | 53 | 0,49 | cbt | ind | 8 | WL | + | - | - | + | - |
| Turner, 2013 | Cardiac patients | Cardiometabolic | Australia | Com | - | 62 | 0,26 | cbt | grp | 6 | oth | + | + | SR | - | - |
| Van Bastelaar, 2011 | Diabetes | Cardiometabolic | NL | Com | - | 50 | 0,61 | cbt | gsh | 8 | WL | + | + | SR | + | - |
| Zhao, 2019 | Pregnant with medical complications | Other | China | Med | - | 31 | 1 | oth | grp | 4 | CAU | + | - | SR | - | - |

Abbreviations: Rcr: recruitment (med: medical settings; Com: community); Dx: diagnostic interview at baseline (+: yes; -: no); Age: Mean age; Wom: proportion of women; NR: not reported; Psy: type of therapy (cbt: cognitive behavior therapy; pst: problem-solving therapy; 3rd: third wave therapy; dyn: psychodynamic therapy; ipt: interpersonal psychotherapy; bat: behavioral activation therapy; sup: non-directive supportive therapy; lrt: life review therapy; oth: other type of therapy). Frm: format (ind: individual; grp: group; gsh: guided self-help; oth: other/mixed format); Sess: Average number of sessions received; Ctrl: type of control condition (WL: waiting list; CAU: care as usual; oth: other type of inactive control); SG: sequence generation, rated as + positive or - negative (negative includes unclear); AC: allocation concealment; BA: blinded assessment; ITT: intention to treat analyses; SR: Selective reporting.

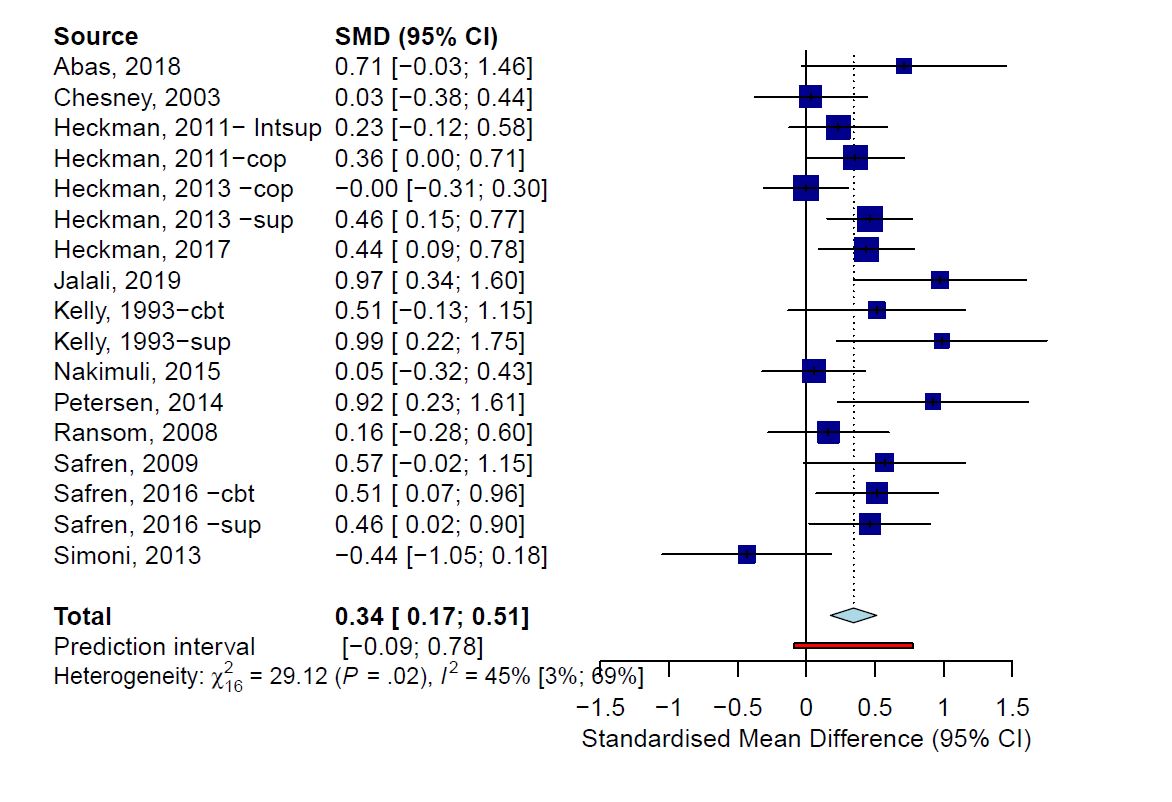
## **Effects of psychotherapy on depression severity**

### eFigure 1. Cardiometabolic disorders

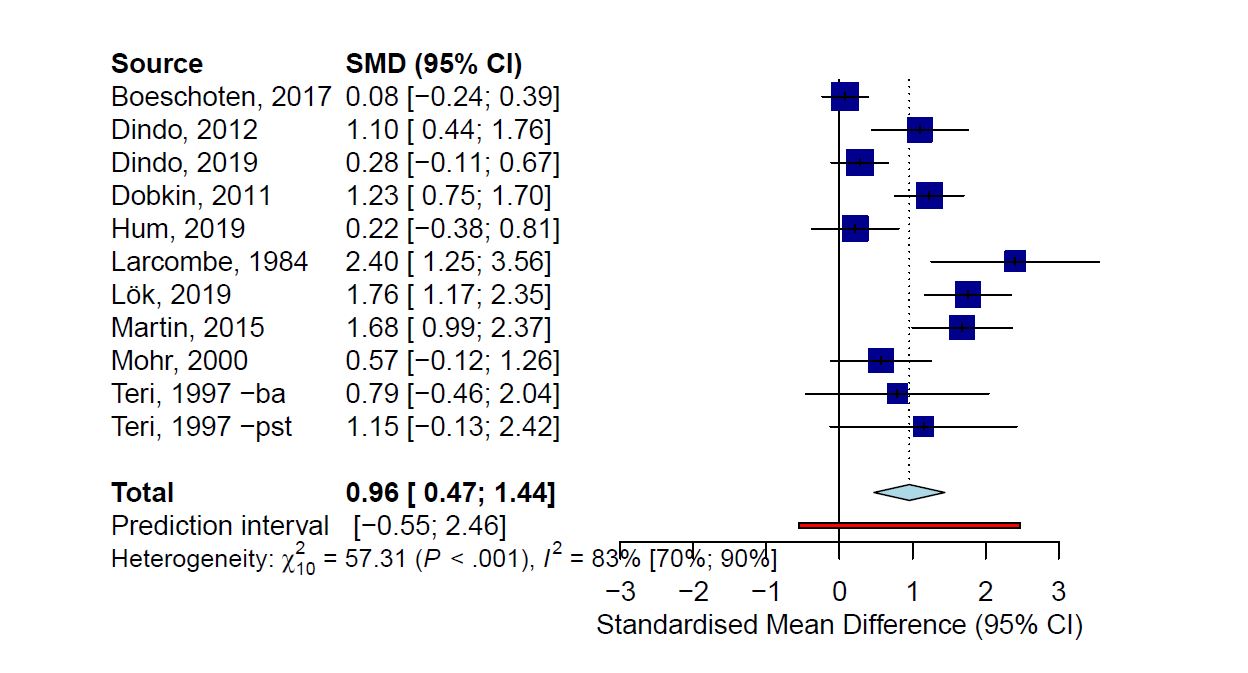
### eFigure 2. Oncological disorders



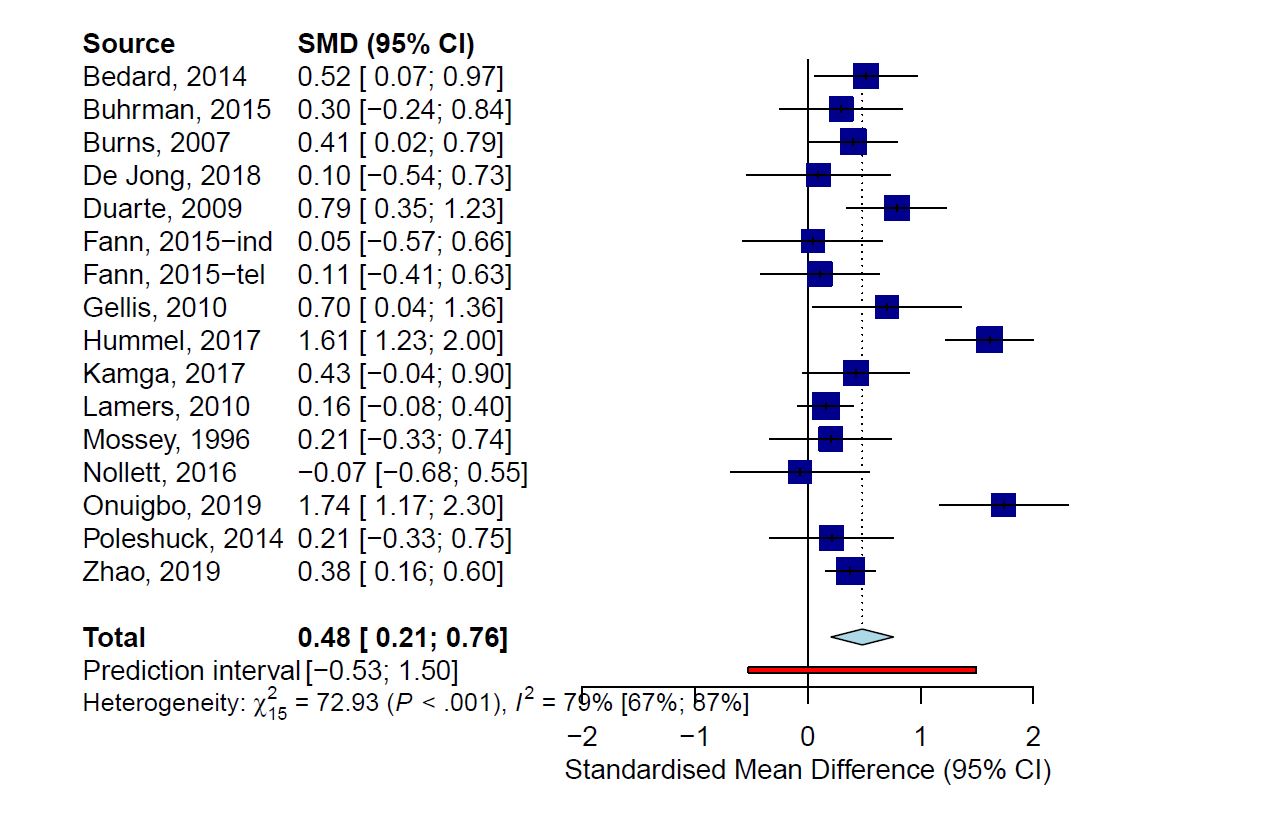
### eFigure 3. HIV/AIDS



### eFigure 4. Neurological disorders



### eFigure 5. Other somatic disorders



### Long term outcomes on depression severity

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Ncomp | *g* | 95% CI | *I2* | 95% CI |
| ≥ 6 months post-randomization | 59 | 0.32 | 0.19, 0.44 | 73 | 65, 79 |
| Outliers excluded | 53 | 0.25 | 0.18, 0.31 | 35 | 9, 54 |
| Studies at low RoB | 26 | 0.30 | 0.15, 0.46 | 75 | 63, 83 |
| Adjusted for publication bias | 59 | 0.32 | 0.19, 0.44 | 73 | 65, 79 |
| **Somatic disorders** |  |  |  |  |  |
| Cardiometabolic | 24 | 0.41 | 0.14, 0.68 | 85 | 70, 90 |
| Oncological | 6 | 0.49 | 0.08, 0.90 | 76 | 46, 89 |
| HIV/AIDS | 17 | 0.27 | 0.17, 0.37 | 12 | 0, 49 |
| Neurological | 3 | 0.12 | -0.24, 0.49 | 41 | 0, 82 |
| Other | 9 | 0.23 | 0.10, 0.36 | 0 | 0, 59 |
| 6- 11 months post-randomization | 46 | 0.38 | 0.22, 0.53 | 75 | 67, 81 |
| ≥ 12 months post-randomization | 13 | 0.13 | 0.04, 0.21 | 0 | 0, 57 |

## **Effects of psychotherapy on Quality of life**

### Additional analyses on Quality of life outcomes

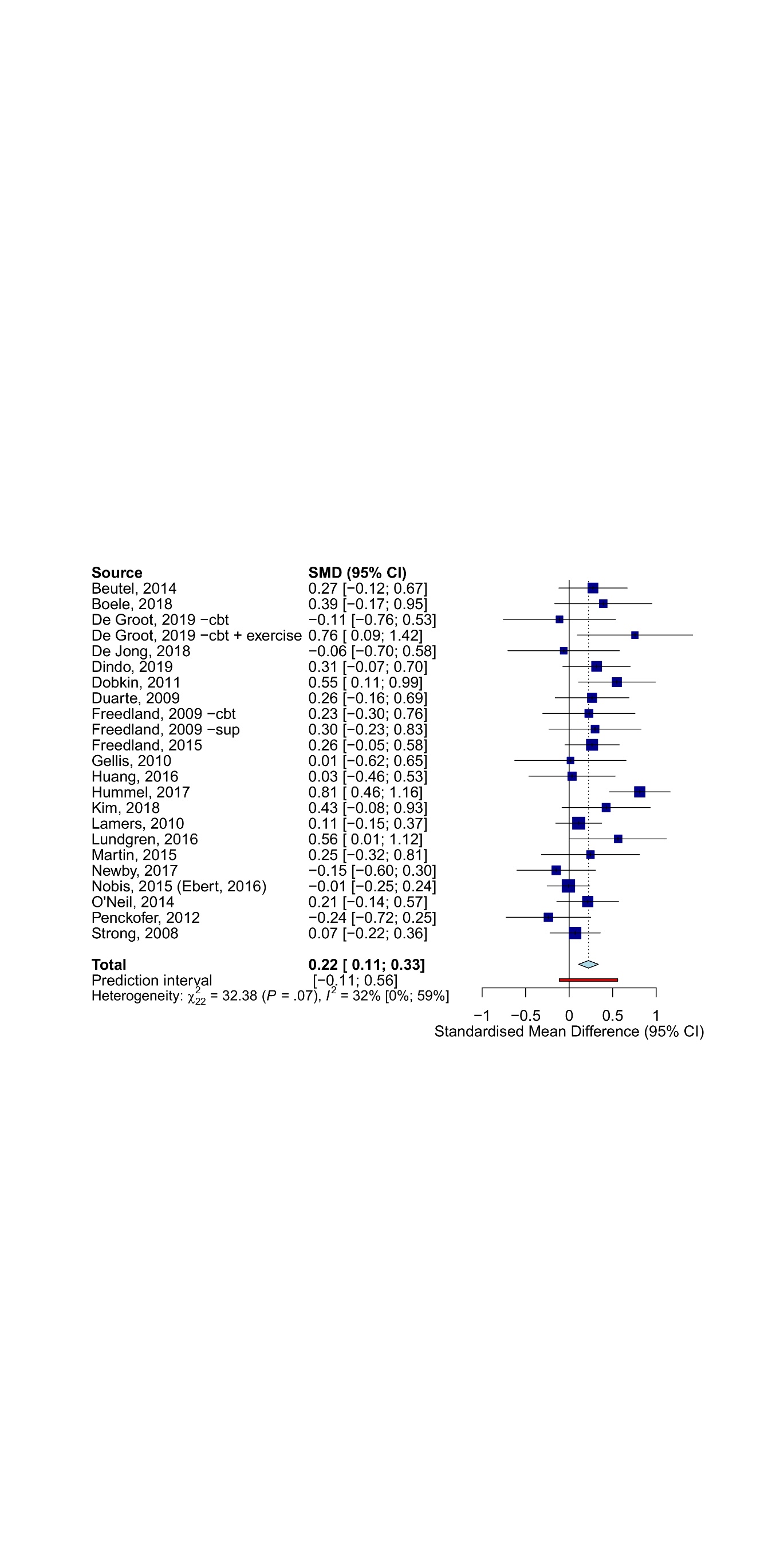
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Ncomp | *g* | 95% CI | *I2* | 95% CI | *p-*value\* |
| **Overall QoL** | 40 | 0.26 | 0.17, 0.35 | 34 | 3, 56 | NA |
| Physical QoL | 23 | 0.22 | 0.11, 0.34 | 32 | 0, 59 | NA |
| Mental QoL | 24 | 0.46 | 0.34, 0.57 | 36 | 0, 61 | NA |
| Outliers excluded | 39 | 0.24 | 0.16, 0.32 | 23 | 0, 48 | NA |
| Studies at low RoB | 23 | 0.23 | 0.14, 0.33 | 9 | 0, 43 | NA |
| Adjusted for publication bias | 46 | 0.19 | 0.09, 0.29 | 54 | 36, 67 | NA |
| **Somatic disorders** | | | | | | |
| Cardiometabolic | 17 | 0.22 | 0.12, 0.32 | 0 | 0, 50 | 0.763 |
| Oncological | 7 | 0.43 | 0.14, 0.71 | 66 | 23, 85 |
| HIV/AIDS | 8 | 0.26 | 0.09, 0.43 | 27 | 0, 67 |
| Neurological | 7 | 0.23 | -0.03, 0.49 | 61 | 11, 83 |
| Other | 17 | 0.22 | 0.12, 0.32 | 0 | 0, 50 |
| **Subgroup analyses** |  |  |  |  |  |  |
| Age group |  |  |  |  |  |  |
| Adults | 18 | 0.24 | 0.13, 0.35 | 16 | 0, 51 | 0.586 |
| Older adults | 22 | 0.28 | 0.15, 0.42 | 46 | 11, 67 |
| Recruitment |  |  |  |  |  |  |
| Community | 15 | 0.22 | 0.08, 0.37 | 27 | 0, 61 | 0.489 |
| Medical settings | 25 | 0.29 | 0.18, 0.40 | 40 | 3, 63 |
| Diagnosis of depression |  |  |  |  |  |  |
| Confirmed diagnosis | 18 | 0.28 | 0.19, 0.38 | 0 | 0, 48 | 0.486 |
| Elevated symptoms | 22 | 0.22 | 0.09, 0.36 | 51 | 19, 70 |
| Type of psychotherapy |  |  |  |  |  |  |
| CBT | 22 | 0.29 | 0.18, 0.40 | 32 | 0, 59 | 0.015 |
| PST | 6 | 0.02 | -0.13, 0.17 | 0 | 0, 67 |
| 3rd wave | 4 | 0.32 | -0.01, 0.65 | 30 | 0, 75 |
| Other | 8 | 0.36 | 0.16, 0.55 | 37 | 0, 72 |
| Format |  |  |  |  |  |  |
| Individual | 18 | 0.21 | 0.09, 0.32 | 16 | 0, 52 | 0.574 |
| Group | 12 | 0.32 | 0.14, 0.50 | 55 | 14, 77 |
| Guided self-help | 6 | 0.22 | 0.02, 0.43 | 40 | 0, 76 |
| Type of control |  |  |  |  |  |  |
| Usual care | 25 | 0.22 | 0.12, 0.32 | 23 | 0, 53 | 0.188 |
| Waiting list | 9 | 0.29 | 0.05, 0.53 | 62 | 23, 82 |
| Other | 6 | 0.37 | 0.24, 0.50 | 0 | 0, 65 |
| Country |  |  |  |  |  |  |
| Western | 33 | 0.23 | 0.14, 0.33 | 34 | 0, 57 | 0.129 |
| Non-Western | 7 | 0.40 | 0.21, ,0.60 | 23 | 0, 66 |

\*The *P* values indicate whether the difference between the effect sizes in the subgroups is significant.

Abbreviations: Ncomp, Number of comparisons; *g*, Hedges’ g; QoL: Quality of life; CBT, cognitive behavioral therapy; PST, problem-solving therapy; 3rd Wave: Third wave therapies; NA, not applicable; RoB: Risk of bias.

### eFigure 6. Forest plot Mental Quality of life

### eFigure 7. Forest plot Physical Quality of life



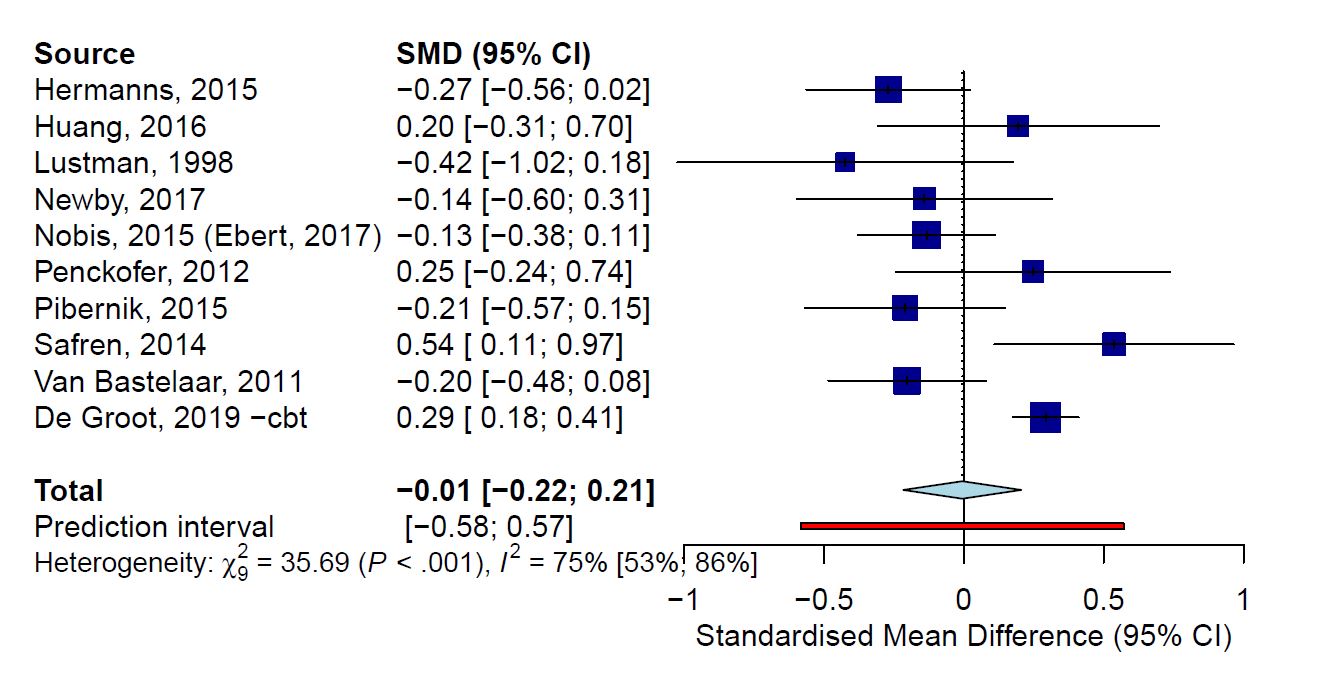
### Long term outcomes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Ncomp | *g* | 95% CI | *I2* | 95% CI |
| ≥ 6 months post-randomization |  |  |  |  |  |
| Overall QoL | 25 | 0.23 | 0.15, 0.30 | 0 | 0, 37 |
| Mental QoL | 18 | 0.34 | 0.22, 0.45 | 29 | 0, 60 |
| Physical QoL | 15 | 0.15 | 0.08, 0.23 | 0 | 0, 9 |
| Outliers excluded | 24 | 0.22 | 0.15, 0.28 | 0 | 0, 20 |
| Studies at low RoB | 16 | 0.26 | 0.20, 0.31 | 0 | 0, 0 |
| Adjusted for publication bias | 25 | 0.23 | 0.15, 0.30 | 0 | 0, 37 |
| **Somatic disorders** |  |  |  |  |  |
| Cardiometabolic | 15 | 0.22 | 0.15, 0.29 | 0 | 0, 13 |
| All other somatic disorders | 10 | 0.25 | 0.09, 0.40 | 34 | 0, 69 |
|  |  |  |  |  |  |
| 6- 11 months post-randomization | 12 | 0.25 | 0.16, 0.34 | 0 | 0, 2 |
| ≥ 12 months post-randomization | 5 | 0.12 | -0.12, 0.37 | 24 | 0, 69 |

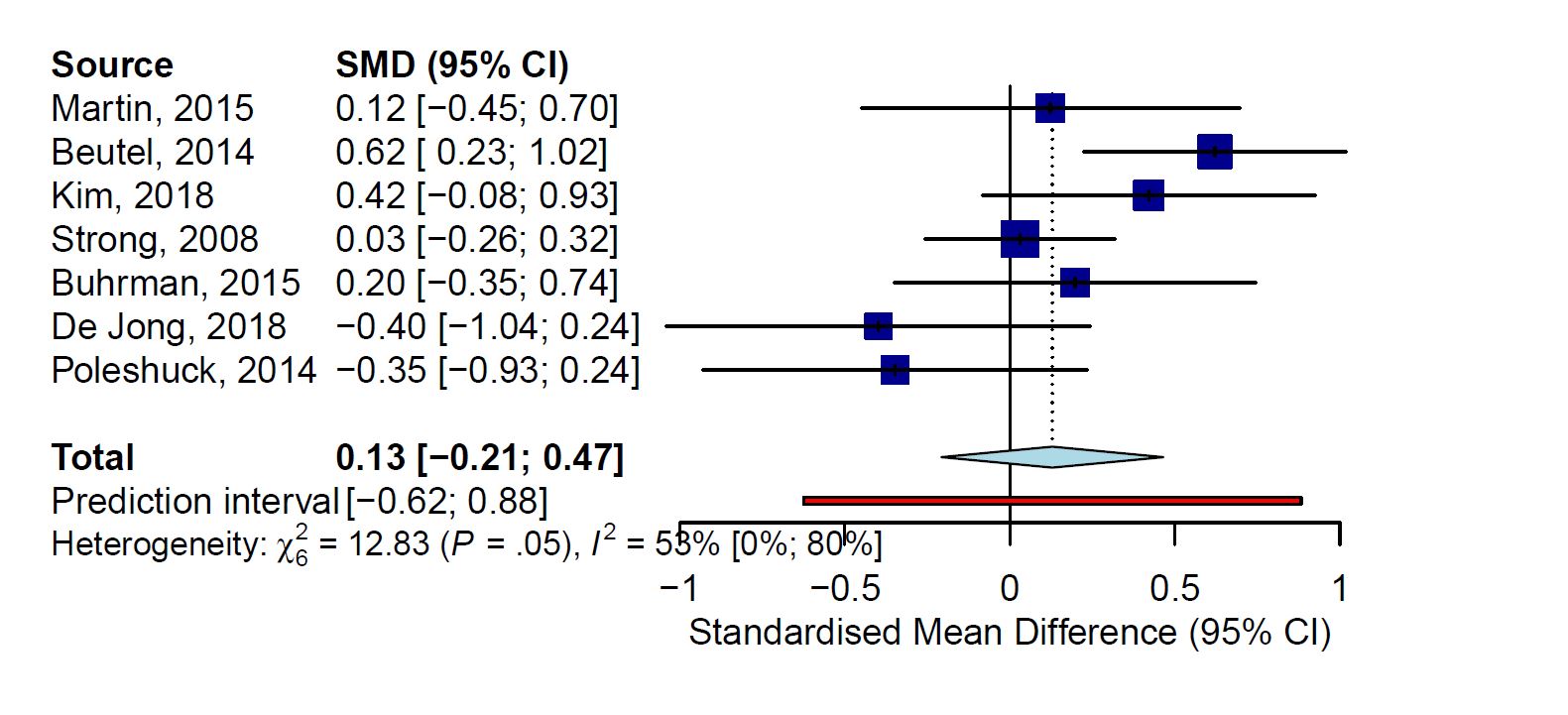
Abbreviations: Ncomp, Number of comparisons; *g*, Hedges’ g; QoL: Quality of life; RoB: Risk of bias.

# **Effects of psychotherapy on somatic health-related outcomes and mortality**

## **eFigure 8. Forest plot of Glycaemic control**



## **eFigure 9. Forest plot of Pain outcomes**



## **eFigure 10. Forest plot of Mortality**

