Other supplementary material.

|  |  |
| --- | --- |
| 1 | Search **((((Mindful\*[Title/Abstract]) OR MBSR[Title/Abstract]) OR MBCT[Title/Abstract]) OR Mindful\*[MeSH Major Topic]) OR MBSR[MeSH Major Topic]** Sort by: **Relevance** Filters: **English** |
| 2 | Search **random\*[Title/Abstract]** Sort by: **Relevance** Filters: **English** |
| 3 | Search **(#1) AND (#2)** Sort by: **Relevance** Filters: **English** |

**Figure OSM1.** Search strategy Pubmed.

**Table OSM1.** Full list of variables extracted from each study.

|  |  |
| --- | --- |
| ***Participant variables*** | ***(i.e., pre-exercise symptom levels, sex, age)*** |
| Author/year |  |
| Subgroup | E.g., MBSR, MBCT |
| Comparison | TAU, NTC, WLC; other treatments (e.g., CT, CBT) |
| Assessment of primary outcome | Self-rated or assessor-rated |
| Time point | Post or Follow-up |
| Intervention M, s.d. |  |
| Intervention N (analysed) |  |
| Control M, s.d. |  |
| Control N (analysed) |  |
| Country |  |
| Application | The disorder for which the treatment was applied |
| N included |  |
| N total (including decliners) |  |
| Decliners (number) | Fulfilling criteria but declining participation |
| Percent declining |  |
| N randomized to intervention |  |
| N randomized to control group |  |
| Attrition | Proportion of the patients who came to the first session not completing therapy. |
| % females |  |
| Age (mean) |  |
| Minimum of percent comorbidity | Any kind of psychiatric comorbidity is counted. |
| Percent current drug treatment | Proportion that during the intervention has ongoing drug treatment |
| Prior experience of intervention | Yes, No, Not reported |
|  |  |
| ***Characteristics of research design*** | ***(i.e., timing of assessments, type of comparison group, whether allocation was blinded, and whether intent-to-treat analysis was used)*** |
| Statistical analysis principal | Completer=Only those who completed the treatment. ITT= Intention-to-treat sample |
| Type of inclusion criteria used | Cutoff- score on measure of symptom severity, DSM / ICD diagnosis, or a combination |
| Comparison type | Passive (WLC) or active (Placebo, TAU and other treatments) |
| Methodological quality | Points on Ost’s *Psychotherapy outcome study methodology rating form* |
| Risk of bias | Points on Cochrane risk of bias tool. |
| Follow-up | Months since post-treatment assessment. |
| Allocation | Evaluators of symptoms were blinded to allocation group, *not* blinded to allocation group, N/A, (only self-reported) orNot reported |
| Adverse events | Number ofIncidents of adverse events reported, no adverse events reported, NR |
|  |  |
| ***Treatment features*** | ***(i.e., duration or frequency of sessions)*** |
| Duration of treatment | Number of weeks |
| Number of sessions |  |
| Total treatment time in hours |  |
| Intensity (hrs/week) |  |
| Percent attendance intervention group |  |
| Percent attendance control group |  |
| Description of therapist qualifications | Training in the treatment, Experience in using the treatment, Instructor/teacher in the method, Not reported |
| Therapy format | Individual or group |
| Therapist profession | Physiotherapist, Psychologist, PhD or MSc Student, Occupational therapist, Physician, Psychotherapist, Dietician, Other, Not reported |
| Home practice recommended | Yes, No, Not reported |
| Support for home practice | Video, Diary, Guide books, Tape, Other, Not reported |
| Prior experience of intervention | Yes, No, NR |

Note: NTC = no treatment control, WLC = waitlist control, TAU=treatment-as-usual, CT = cognitive therapy, CBT = cognitive behavior therapy, MBCT = mindfulness-based cognitive therapy, MBSR = mindfulness-based stresss reduction, *SD* = standard deviation, *M* = mean, NR = not reported, N/A = not applicable

**Table OSM2.** Moderator variables investigated\* by subgroup- and meta-regression analyses.

|  |  |
| --- | --- |
| **Category variables investigated by subgroup analysis** | **Continuous variables investigated by meta-regression analysis** |
| Control condition | Number of patients |
| Disorder | Mean age |
| Country | Percent females |
| Therapist profession | Methodology scores |
| Therapist qualification | Risk of bias |
| Type of data analysis (intention-to-treat vs completer) | Percent declining participation |
| Inclusion criteria (diagnosis, cutoff score or a combination) | Weeks of treatment |
|  | Number of sessions |
|  | Total hours of treatment |
|  | Treatment intensity |
|  | Attrition |

\*Only variables on which 75% of the studies had available data were analyzed.

**Table OSM3.** Risk of bias according to Cochrane criteria.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Study** | **1 Random sequence allocation** | **2 Allocation concealment** | **3 Blinding of outcome assessment** | **4 Incomplete outcome data** | **5 Selective reporting** | **Total score** |
| Asmaee Majid 2012 | ? | ? | - | - | + | 3 |
| Barnhofer 2009 | + | + | + | + | + | 0 |
| Chiesa 2015 | + | + | + | + | + | 0 |
| Eisendrath 2016 | + | ? | + | ? | ? | 1.5 |
| Guardino 2014 | + | ? | - | + | + | 1.5 |
| Hamidian 2013 | ? | ? | ? | - | - | 3.5 |
| Hoge 2013 | ? | ? | + | + | + | 1 |
| Jazaieri 2012 | + | ? | - | - | + | 2.5 |
| Kearney 2013 | ? | + | - | + | + | 1.5 |
| Koszycki 2007 | ? | ? | + | + | + | 1 |
| McManus 2012 | + | ? | + | + | + | 0.5 |
| Michalak 2015 | + | + | + | - | + | 1 |
| Ong 2014 | ? | + | - | + | - | 2.5 |
| Piet 2010 | ? | ? | - | + | + | 2 |
| Polusny 2015 | + | ? | + | + | + | 0.5 |
| Possemato 2015 | ? | - | + | + | + | 1.5 |
| van Aalderen 2012 | + | ? | ? | - | + | 2 |
| Wahbeh 2016 | + | ? | - | - | + | 2.5 |
| Zhang 2015 | + | ? | - | + | + | 1.5 |

Note: + = 0p, - = 1p, ? = 0.5p.

**Figure OSM2.** Estimated risk of bias across all included studies.

**Table OSM4.** Attrition according to treatment condition in the MBI studies.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Condition** | **k** | **Dropout** | **95 % CI** | **z-value\*** | **Q-value** | ***I2*** |
| MBI | 18 | 7.8% | 5.7, 10.7 | -14.29a | 14.2 | 0 |
| CBT | 3 | 5.5% | 1.6, 16.8 | -4.46a | 1.7 | 0 |
| TAU | 6 | 5.1% | 2.2, 11.3 | -6.64a | 4.9 | 0 |
| PLA | 6 | 9.2% | 5.7, 14.6 | -8.59a | 5.7 | 13 |
| WLC | 2 | 2.2% | 0.1, 13.0 | -3.93a | 0 | 0 |

Note: \*Tests if the proportion is significantly different from 50%. a *p* < .0001.

Subgroup analysis: Qbetween(4) = 3.71, *p* = 0.45.

**Table OSM5.** Effect sizes (Hedges’ *g*) on the primary outcome measure for all Mindfulness RCTs and divided on comparison conditions\* at follow-up-treatment assessments.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Comparison** | **k** | ***g*-value** | **95% CI** | ***z*-value** | **Q-value** | ***I*2** |
| All studies | 7 | 0.16 | -0.03, 0.35 | 1.66 | 5.1 | 0 |
| Mindfulness vs. Placebo | 2 | 0.11 | -0.19, 0.42 | 0.72 | 0.1 | 0 |
| Mindfulness vs. TAU | 3 | 0.23 | -0.21, 0.67 | 1.02 | 4.4 | 55 |
| Mindfulness vs. active Tx | 2 | 0.11 | -0.36, 0.57 | 0.44 | 0.3 | 0 |

Note: k = number of comparisons. A positive *g*-value means that the first treatment in the comparison is better and a negative that the second is better.  a*p* < 0.05, b*p* < 0.01, c*p* < 0.001. \*No data available for follow-up assessment on WLC+NTC or CBT.

**Table OSM6.** Meta-regression analysis of treatment effect at post-treatment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **k** | **Point est.** | ***z*-value** | ***p*-value** |
| Number of patients in the RCT | 23 | -0.0011 | -0.84 | .402 |
| Mean age at treatment | 15 | 0.0027 | 0.33 | .740 |
| Percent females | 15 | 0.0033 | 1.33 | .184 |
| Methodology scores | 23 | -0.0269 | -2.51 | .012 |
| Risk of bias | 23 | -0.0901 | -1.39 | .166 |
| Percent declining participation | 22 | 0.0048 | 1.11 | .268 |
| Weeks of treatment | 23 | 0.1205 | 2.33 | .020 |
| Number of sessions | 23 | 0.0693 | 1.68 | .093 |
| Total hours of Tx | 23 | 0.0001 | 0.01 | .995 |
| Intensity | 23 | -0.0427 | -0.58 | .562 |
| Attrition total | 15 | -0.0056 | -0.71 | .470 |

Note: k = number of comparisons, Tx = treatment.

**Table OSM7.** Subgroup analysis of treatment effect at post-treatment.

**Variable k *g-*value 95% CI Qb-value *p*-value**

Type of comparison 2.672 .102

Active treatment 20 0.18 0.01, 0.35

Passive control 3 1.00 0.03, 1.97

Type of data analysis 0.493 .483

Completer 6 0.44 -0.11, 0.98

Intent-to-treat 17 0.23 0.03, 0.42

Treatment format 1.257 .262

Group 20 0.31 0.11, 0.52

Individual 3 0.01 -0.49, 0.50

Disorder 9.877 .130

Depression 7 0.40 0.17, 0.63

GAD 2 1.12 -0.49, 2.73

Hypochondriasis 1 0.34 -0.12, 0.79

Insomnia 3 0.49 -0.11, 1.09

PTSD 6 0.05 -0.21, 0.30

SAD 3 -0.18 -0.90, 0.54

Stress 1 -0.22 -0.78, 0.35

Inclusion criteria 4.315 .229

Cutoff score 1 -0.21 -0.78, 0.35

Diagnosis 16 0.35 0.13, 0.57

Diagnosis+ 4 -0.01 -0.58, 0.57

cutoff score

Diagnosis or 2 0.42 -0.48, 1.32

symptom level

Therapist qualifications 2.622 .454

Not reported 1 0.67 0.07, 1.26

Trained 5 0.12 -0.28, 0.51

Experienced 1 0.39 0.09, 0.69

Instructor in the 16 0.29 0.04, 0.54

method

Country 2.285 .131

USA 12 0.14 -0.02;0.30

Other 11 0.45 0.08;0.82

Note: k = number of comparisons, Qb= Q between subgroups, GAD = generalized anxiety disorder, PTSD = post-traumatic stress disorder, SAD = social anxiety disorder.

**Table OSM8.** Within-groupeffect sizes (Hedges’ *g*) for all treatment conditions for all mindfulness RCTs

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Comparison** | **Time point** | **k** | ***g*-value** | **95% CI** | ***z*-value** | **Q-value** | ***I*2** |
| All conditions | Post  F-up | 42  16 | 0.69  0.69 | 0.54, 0.85  0.51, 0.86 | 8.86c  7.84c | 240.5c  40.4c | 83  63 |
| Mindfulness | Post (\*)  F-up | 19  8 | 0.98 (0.77)  0.87 | 0.77, 1.19  0.62, 1.11 | 9.19c  7.00c | 79.2c  17.5a | 60  65 |
| WLC+NTC\*\* | Post | 3 | -0.14 | -0.37, 0.10 | -1.11 | 1.9 | 0 |
| Placebo | Post  F-up | 6  3 | 0.61  0.36 | 0.28, 0.93  0.16, 0.56 | 3.62c  3.56c | 27.1c  0.4 | 82  0 |
| TAU | Post  F-up | 6  3 | 0.27  0.45 | 0.11, 0.44  0.23, 0.67 | 3.20b  4.05c | 6.1  1.7 | 18  0 |
| Active Tx | Post  F-up | 8  2 | 0.74  1.06 | 0.39, 1.09  0.54, 1.58 | 4.11c  4.00c | 31.8c  1.5 | 78  32 |
| CBT\*\*\*  Active Tx other | Post  Post | 3  5 | 1.20  0.47 | 0.66, 1.73  0.16, 0.78 | 4.39c  2.98b | 5.9  10.0a | 66  60 |

Note: k = number of comparisons, NTC = no treatment control, WLC = waitlist control, TAU = treatment-as-ususal, Tx = treatment.  a*p* < 0.05, b*p* < 0.01, c*p* < 0.001. \*Adjusted post effect size when only including studies including follow-up data. \*\*No follow-up assessment. \*\*\* Same values as Active Tx F-up.

**Table DS9.** Publication bias for all MBI studies.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Comparison** | **Observed**  **ES** | **Trim-and-fill**  **ES** | **# of trimmed**  **studies** | **Egger’s regression**  **intercept** | ***t*-value** |
| All MBI studies | 0.27 | 0.15 | 4 | 1.45 | 0.95 |
| MBI vs. NTC/WLC | 1.07 | 0.75 | 1 | 4.84 | 0.55 |
| MBI. vs. Placebo | 0.17 | 0.17 | 0 | -1.42 | 0.67 |
| MBI vs. TAU | 0.40 | 0.31 | 2 | 3.68 | 1.50 |
| MBI vs. Active Tx | -0.01 | -0.22 | 2 | 3.84 | 0.81 |
| MBI vs. CBT | -0.33 | -0.33 | 0 | 1.62 | 0.25 |
| MBI vs. other Tx | 0.18 | 0.18 | 0 | 8.12 | 0.66 |

Note: NTC = no treatment control, WLC = waitlist control, TAU = treatment-as-ususal, Tx = treatment



**Figure OSM3.** Funnel plot of estimated publication bias. Open circles = observed studies, filled circles = imputed studies.