Journal of Affective Disorders 388 (2025) 119537

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Review Article

Transdiagnostic psychological interventions for emotional disorders: A comprehensive meta-analysis

Noelia Jiménez-Orenga [a], Clara Miguel [b], Alberto González-Robles [c], Javier Fernández-Álvarez [d,e], Jorge Grimaldos [a], Juana Bretón-López [a,f], Cristina Botella [a,f], Pim Cuijpers [b], Azucena García-Palacios [a,f], Davide Papola [g], Soledad Quero [a,f], Heleen Riper [b], Amanda Díaz-García [c,*]

[a] Department of Basic, Clinical Psychology and Psychobiology, Universitat Jaume I, Castellón, Spain
[b] Department of Clinical, Neuro and Developmental Psychology, Amsterdam Public Health Research Institute, Vrije Universiteit, Amsterdam, the Netherlands
[c] Department of Psychology and Sociology, Universidad de Zaragoza, Teruel, Spain
[d] Department of Personality, Evaluation, and Psychological Treatments, University of Valencia, Valencia, Spain
[e] Fundación Aiglé, Buenos Aires, Argentina
[f] CIBER de Physiopathology of Obesity and Nutrition (CIBEROBN), Instituto de Salud Carlos III, Madrid, Spain
[g] WHO Collaborating Centre for Research and Training in Mental Health and Service Evaluation, Department of Neurosciences, Biomedicine and Movement Sciences, Section of Psychiatry, University of Verona, Verona, Italy

ARTICLE INFO

Keywords:
Transdiagnostic
Emotional disorders
Anxiety
Depression
meta-analysis

ABSTRACT

Previous meta-analyses have integrated evidence on the effects of transdiagnostic interventions for depression and anxiety symptoms. Nevertheless, no recent study covers all types of transdiagnostic interventions administered through a wide range of delivery formats, and targeting participants with different emotional disorders (i.e., mixed samples with different anxiety disorders or mixed depression/anxiety symptomatology). We used the most recent available searches (1st January 2024) of the Metapsy meta-analytic project of randomized trials on psychotherapy for depression and anxiety to identify studies comparing an intervention targeting at least two emotional disorders with a control group (waitlist, usual care, other non-active control). We conducted random-effects meta-analyses of 94 trials (108 comparisons between a psychotherapy and a control group) with 12,443 patients (who have at least a principal diagnosis of anxiety and/or unipolar depressive disorder, or a score above a cut-off point on an anxiety or depression validated self-report scale), to examine the effects on depression and anxiety symptomatology at post-treatment. The overall effect size of the pooled outcomes of depression and anxiety was $g = 0.59$ (95 % CI 0.50–0.68), with high heterogeneity ($I^2 = 78.88$; 95 % CI 74.8–82.3) and a broad prediction interval (−0.18–1.37). The effects remained comparable after a series of sensitivity analyses, including multilevel analyses, exclusion of outliers, adjustment for risk of bias, and adjustment for publication bias. The results were also comparable for depression and anxiety symptoms when considered separately (effect sizes ranged from $g = 0.54$ to 0.61). However, when considering the impact on anxiety symptoms in studies focusing exclusively on participants with several anxiety disorders, the effects were somewhat larger ($g = 0.87$). A significantly higher risk of study dropout was found in the intervention conditions compared to the control groups. Transdiagnostic interventions are probably effective at post-treatment for adults with depression and/or anxiety.

* Corresponding author at: Universidad de Zaragoza, Department of Psychology and Sociology, C/Atarazanas 4, 44003 Teruel, Spain.
E-mail addresses: norenga@uji.es (N. Jiménez-Orenga), clara.miguelsanz@vu.nl (C. Miguel), gonzaleza@unizar.es (A. González-Robles), javferalvarez@gmail.com (J. Fernández-Álvarez), grimaldo@uji.es (J. Grimaldos), breton@uji.es (J. Bretón-López), botella@uji.es (C. Botella), p.cuijpers@vu.nl (P. Cuijpers), azucena@uji.es (A. García-Palacios), davide.papola@univr.it (D. Papola), squero@uji.es (S. Quero), h.riper@vu.nl (H. Riper), amandadiaz@unizar.es (A. Díaz-García).

https://doi.org/10.1016/j.jad.2025.119537
Received 20 December 2024; Received in revised form 17 May 2025; Accepted 26 May 2025
Available online 29 May 2025

1. Introduction

The term 'emotional disorder'(ED) is broad and can encompass a variety of disorders, leading to multiple definitions (Bullis et al., 2019). One of the most commonly adopted definitions refers to different anxiety and unipolar depressive disorders. These disorders are among the most prevalent and disabling psychological disorders (WHO, 2022), and often occur in comorbidity rather than isolated (Kessler et al., 2011, 2015).

The transdiagnostic approach to ED has become very widespread in recent years and can facilitate the management of comorbid presentations (Mansell et al., 2009), in addition to being beneficial for the dissemination and application of treatment, given that a single protocol allows for simultaneously targeting different disorders. While disorder-specific interventions address the symptoms of a single diagnosis, transdiagnostic interventions focus on underlying factors common to all anxiety and depressive disorders (e.g., difficulties in emotional regulation, low acceptance, neuroticism, low extraversion, experiential avoidance or intolerance to uncertainty), incorporating treatment ingredients for multiple diagnoses (Barlow et al., 2010; McEvoy et al., 2009).

In the 1990s, relevant reviews began to emerge proposing that the psychological factors maintaining distress were consistent across diagnoses (Hayes et al., 1996; Ingram, 1990; Wells and Matthews, 2014). However, the term 'transdiagnostic' did not gain traction until the beginning of the present century (Barlow et al., 2004; Harvey et al., 2004; Norton et al., 2004), marking the onset of the transdiagnostic approach's rapid development. Prior to 2004, fewer than 200 studies mentioned the term, while currently thousands of studies reference the transdiagnostic approach each year (Mansell and Tai, 2022). Despite its widespread use, there remains a lack of consensus on the precise definition of 'transdiagnostic intervention' (Dalgleish et al., 2020; Sauer-Zavala et al., 2017). In general terms, transdiagnostic treatments can be understood as an approach designed to effectively address a variety of diagnostic presentations, broadly targeting a range of ED regardless of the theoretical framework (McHugh et al., 2009; Wilamowska et al., 2010).

Several meta-analyses have synthesized the effects of transdiagnostic treatments for depression and anxiety disorders. Nevertheless, every year new randomized studies are published testing the effectiveness of transdiagnostic interventions for these disorders, and many questions remain unanswered due to the breadth of the field and the difficulty of addressing it completely. Some of these previous meta-analyses focus on a single format of treatment delivery, such as face-to-face interventions (Reinholt and Krogh, 2014) or Internet-based interventions (Kolaas et al., 2024; Newby et al., 2016; Păsărelu et al., 2017), or only include comparisons with disorder-specific treatments (Pearl and Norton, 2017). Other meta-analytic studies focus on examining the effects of cognitive-behavioral transdiagnostic treatments (Schaeuffele et al., 2024) or include only one specific transdiagnostic intervention, like the Unified Protocol (Carlucci et al., 2021; Sakiris and Berle, 2019). Finally, some meta-analyses include more restricted types of participants. For instance, Reinholt and Krogh (2014) focused on mixed anxiety disorders and Cuijpers et al. (2023) examined 45 trials on mixed depression and anxiety samples, but did not include trials with mixed anxiety disorders.

The objective of this meta-analysis was to update and expand upon the studies included in recent meta-analyses, also incorporating studies focused on participants with different anxiety disorders, in addition to those focusing on mixed samples of anxiety and depression, as well as those studies exploring perspectives other than cognitive-behavioral. Thus, the aim was to synthesize and integrate current scientific evidence about the effectiveness of transdiagnostic treatments for ED and move towards the creation of a 'Meta-Analytic Research Domain' of this field (Cuijpers et al., 2022).

In the current study, we conducted a comprehensive meta-analysis of randomized trials examining the effects of psychological interventions designed to target a variety of ED (i.e., at least two anxiety disorders, or anxiety combined with depression) (hereinafter referred to as 'transdiagnostic psychological interventions' or TPIs) in patients with anxiety and/or depressive symptoms. Our meta-analysis included a broader search than previous studies, aiming to provide the most comprehensive estimate of transdiagnostic treatments to date.

2. Methods

2.1. Identification and selection of trials

We selected studies from the Metapsy meta-analytic project (www.metapsy.org) of randomized trials on psychotherapy for depression and psychotherapy for anxiety. The meta-analytical databases have been described extensively on the OSF website (depression: https://osf.io/825c6/; anxiety: https://osf.io/9xe2g/) and are updated yearly. For this meta-analysis we used the most recent available search, dating to 1st January 2024.

These databases were built through systematic searches in four major databases (Embase, PsycINFO, PubMed, and Cochrane Library) combining index and free terms indicative of depression or anxiety and psychotherapies, filtering by randomized controlled trials (RCTs). The complete search strings can be found at the website of the project (www.metapsy.org) and are presented in Appendix A of Supplementary materials. Additionally, we also identified trials through handsearching and reference tracking. Potentially eligible studies were retrieved and reviewed in full text by two independent researchers. The protocol for the present meta-analysis was previously registered at the Open Science Framework (Jiménez-Orenga et al., 2024; https://osf.io/ynj5d). Amendments to the protocol are presented in Appendix B.

In this meta-analysis, we included RCTs examining the effects of TPIs on adults with anxiety and/or depression that met the following criteria:

1. Participants were adults (≥18 years) from any setting. Trials recruited participants that have at least a principal diagnosis of anxiety and/or unipolar depressive disorder, or a score above a cut-off point on an anxiety or depression validated self-report scale.
2. Studies evaluated any psychotherapy intervention created or designed to target a variety of ED, considering the DSM-5-TR (APA, 2022) classification (i.e., to be included had to target at least two anxiety disorders or an anxiety disorder combined with depression). Those trials including a percentage of patients not exceeding 10 % of the total sample with disorders previously considered anxiety disorders, such as obsessive-compulsive disorder and post-traumatic stress disorder, were also included. Any format of treatment (face-to-face, individual, in group, guided Internet-based, videoconference, telephone, blended, guided bibliotherapy, etc.) was included if human guidance was available.
3. Randomized trials with a control condition (waiting list, care-as-usual or other non-active control groups). Trials with head-to-head comparisons against established psychological interventions or pharmacotherapy that did not include a control group were excluded.
4. Studies needed to report outcome measures of depression and/or anxiety symptoms (regardless of whether they were established as primary or secondary measures by the authors of the trials), and to provide sufficient information to allow calculation of effect sizes.

Year of publication was not used as an exclusion criterion.

2.2. Data extraction and risk of bias assessment

We coded study characteristics (year of publication, country, type of control group, existence or not of a prior study protocol) and data on study dropout (for any reason) for each intervention and control condition. We also extracted information on characteristics of the

participants (types of ED included, diagnosis or elevated symptoms as inclusion criterion, age group and mean age, proportion of females, type of recruitment, target group) and characteristics of the interventions (type of intervention, format and delivery, number of sessions, existence or not of a treatment manual, inclusion or not of optional modules, session sequence, sessions length, duration, etc.).

In addition, we assessed the quality of included trials using the Cochrane Risk of Bias Tool, version 2 (Sterne et al., 2019). This tool evaluates five main potential sources of bias in randomized studies: randomization process, deviations from intended interventions, missing outcome data, measurement of the outcome, and selection of the reported result.

The entire process of codification and risk of bias (RoB) assessment of the included studies was performed by two independent reviewers, and disagreements were solved through discussion.

2.3. Outcome measures

Effect sizes were calculated for each study reporting sufficient data on anxiety and/or depressive symptoms and were estimated using validated self-report scales and clinician-rated scales measuring the aforementioned outcomes. Based on the literature (e.g., Rose and Devine, 2014), we included scales used to assess depressive or anxious symptomatology more globally rather than scales aimed at assessing specific disorders or symptoms (e.g., a specific phobia questionnaire, a worry questionnaire or a social anxiety questionnaire). If multiple general depression and anxiety scales were available, we extracted all of them and handled effect size dependencies directly in our analyses. In our main analysis ('Meta-analyses' section), we combined anxiety and depression outcomes together. Therefore, whenever possible, we extracted total scores from joint measures of depression and anxiety (e.g., HADS total score).

For each comparison between a TPI and a control condition, effect sizes (Hedges' *g*) indicating the difference between the two groups at post-treatment were estimated. Effect sizes were calculated for both anxiety and depression outcomes. To calculate them, we gave priority to means, standard deviations (SD) and the number of participants in each comparison. If the SD was not reported, we used other statistics to calculate it, such as standard error (SE) or confidence interval (CI). However, if a study does not report means and SD or cannot be estimated, we used other available data (i.e., change scores, binary outcomes, and other statistics such as *p* value, F-values, etc.) to calculate the effect size. If sufficient statistics to allow conversion to effect size were not reported, the study was excluded.

2.4. Meta-analyses

In our main analysis, we pooled outcomes of depression and anxiety in one analysis to estimate the overall effectiveness of TPIs compared to control conditions. This has been done in other previous meta-analyses on transdiagnostic interventions (Carlucci et al., 2021; Cuijpers et al., 2023), and further studies are planned to implement such a choice in the future (Papola et al., 2023a; Papola and Patel, 2025). Combining anxiety and depression outcomes allows to examine the global impact of TPIs on emotional symptomatology. As secondary analyses, we also pooled the effects for depression and anxiety symptoms separately.

All analyses were carried out using the 'metaspyTools' R package, which was specifically developed for the metapsy project. This package imports functionalities of the 'meta' (Balduzzi et al., 2019), 'metafor' (Viechtbauer, 2010), and 'dmetar' (Harrer et al., 2021) packages.

As implemented in the 'metapsyTools' package, effect sizes were pooled in different ways in our main analysis. Our primary model involved pooling all effect size data available within a study before pooling across studies (combined model). Next, other pooling methods were used as sensitivity analyses: 1) Three-level correlated and hierarchical effects model (Pustejovsky and Tipton, 2022), assuming an intra-study correlation of $\rho = 0.5$, where parameter tests and 95 % CI was estimated using robust variance estimation; 2) Pooling effect sizes when only the smallest or largest effect size in each study was included; 3) Pooling effect sizes after exclusion of outliers (effect size whose 95 % CI did not overlap with the 95 % CI of the pooled effect size) (Harrer et al., 2021), 4) Pooling effect sizes after exclusion of influential cases (Viechtbauer and Cheung, 2010), 5) Pooling effect sizes when only low RoB studies were considered, 6) Correcting for publication bias, using the trim and fill method (Duval and Tweedie's, 2000a,b), limit meta-analysis (Rücker et al., 2011), and a step function selection model (Carter et al., 2019; McShane et al., 2016).

Because we expected considerable heterogeneity between studies, we used a random-effects model in the pooling of studies in all analyses. For models that do not apply robust variance estimation, we used the Knapp-Hartung method to obtain robust 95 % CIs and significance tests. Between-study heterogeneity variance was calculated using restricted maximum likelihood. To assess heterogeneity, we calculated the I^2 statistic and its 95 % CI, as well as prediction interval (PI), which indicates the range in which the real effect size of 95 % of all populations would lie (Borenstein et al., 2009, 2017). Values of $I^2 = 25$ % denote low heterogeneity, 50 % denote medium heterogeneity, and 75 % indicate high heterogeneity (Higgins et al., 2003).

We used Furukawa's (1999) formulas to calculate the Numbers-needed-to-treat (NNT) in addition to Hedges' *g*, with a conservative 17 % for the control group's event rate, based on Cuijpers et al. (2021).

To further explore heterogeneity, we analyzed differences between subgroups of studies by using a mixed-effects model. The following subgroup analyses were carried out: depending on whether the authors qualify the treatment as 'transdiagnostic' or not, the type of intervention according to treatment approach (e.g., cognitive-behavioral therapy, mindfulness, etc.), the format (individual vs. group) and delivery (face-to-face, guided and other formats), the inclusion of participants strategy (diagnosis or elevated symptoms), the recruitment method (community, clinical, other), the target group (adults, older adults, etc.), the type of control group (waitlist, care as usual, other control), the year of publication ($\leq$2008 vs. >2008), the ED inclusion (only anxiety disorders vs. mixed depression and anxiety) and the number of sessions (<8, 8–12, >12). We only considered subgroups with at least 5 studies.

Initially, we planned to conduct subgroup analysis regarding the year of publication with 2004 as the cut-off point, because this is when the term 'transdiagnostic' came into use. However, considering that the time for developing, conducting and publishing the results of an RCT is about 5 years on average (Ioannidis, 1998), we thought it more appropriate to consider the year 2008 as the time from which RCTs based on this new term were published.

Next to our main analysis, we also pooled depression and anxiety outcomes separately in two different ways to study the effect of TPIs only on depressive symptoms and only on anxious symptoms: 1) taking into account the initial condition studied (i.e., for effects on anxious symptomatology, we only included studies that recruited participants with elevated symptoms of anxiety based on a cut-off point or a diagnostic interview, while for effects on depressive symptoms, we only included studies that recruited participants based on elevated depressive and/or anxiety symptoms using a cut-off or a diagnostic interview), and 2) regardless of the initial condition studied (i.e., including all studies) (e.g., for effects on depressive symptoms, we included any trial reporting on depression outcomes at post-test, including trials that only include participants with anxiety disorders).

Finally, we analyzed differences in study dropout between intervention and control groups. To this end, we calculated the relative risks of study dropout for each comparison between intervention and control groups. We pooled the relative risks with a random-effects model, using the Mantel-Haenszel method (Robins et al., 1986).

3. Results

3.1. Selection and inclusion of studies

We examined a total of 56,901 records (39,991 after excluding duplicates) and retrieved a total of 5929 full-text articles for consideration for inclusion in the databases. Of the 1631 studies included in the 'Meta-Analytic Research Domain' for depression or anxiety, we reviewed a total of 217 full-text articles to explore eligibility for this meta-analysis. Finally, a total of 94 RCTs (with 108 comparisons between a TPI and a control group) met the inclusion criteria for the present meta-analysis. The details of the inclusion process can be seen in the PRISMA flowchart presented in Fig. 1.

3.2. Characteristics and RoB of included studies

A total of 12,443 patients were randomized in the trials, 6807 to the intervention conditions and 5636 to the control groups. Twenty-three trials (24.5 %) included participants with anxiety, and the other 71 studies (75.5 %) included mixed samples of participants with depression and/or anxiety. Participants had a mean age of 43.53 (SD = 13.58), and the mean percentage of women in the studies was 67.18 %. The most common age group targeted by the studies ($n = 75$; 79.8 %) was middle-aged adults, followed by older people ($n = 12$; 12.8 %) and young adults (n = 7; 7.4 %). The trials mainly targeted adults in general ($n = 54$; 57.4 %), and the second most common target group was adults with medical conditions ($n = 23$; 24.5 %). In addition, 6.4 % of the studies focused on older people ($n = 6$), 6.4 % on students (n = 6), 4.3 % on women with perinatal emotional symptomatology ($n = 4$), and the rest (n = 1; 1.1 %) on other groups. A total of 47 studies (50 %) used cut-off points on validated anxiety and/or depression scales for the inclusion of participants, while 46 (48.9 %) were based on diagnostic interviews.

Most studies were published after 2008 ($n = 85$; 90.4 %) while the remaining ($n = 9$; 9.6 %) were published in 2008 or earlier. A total of

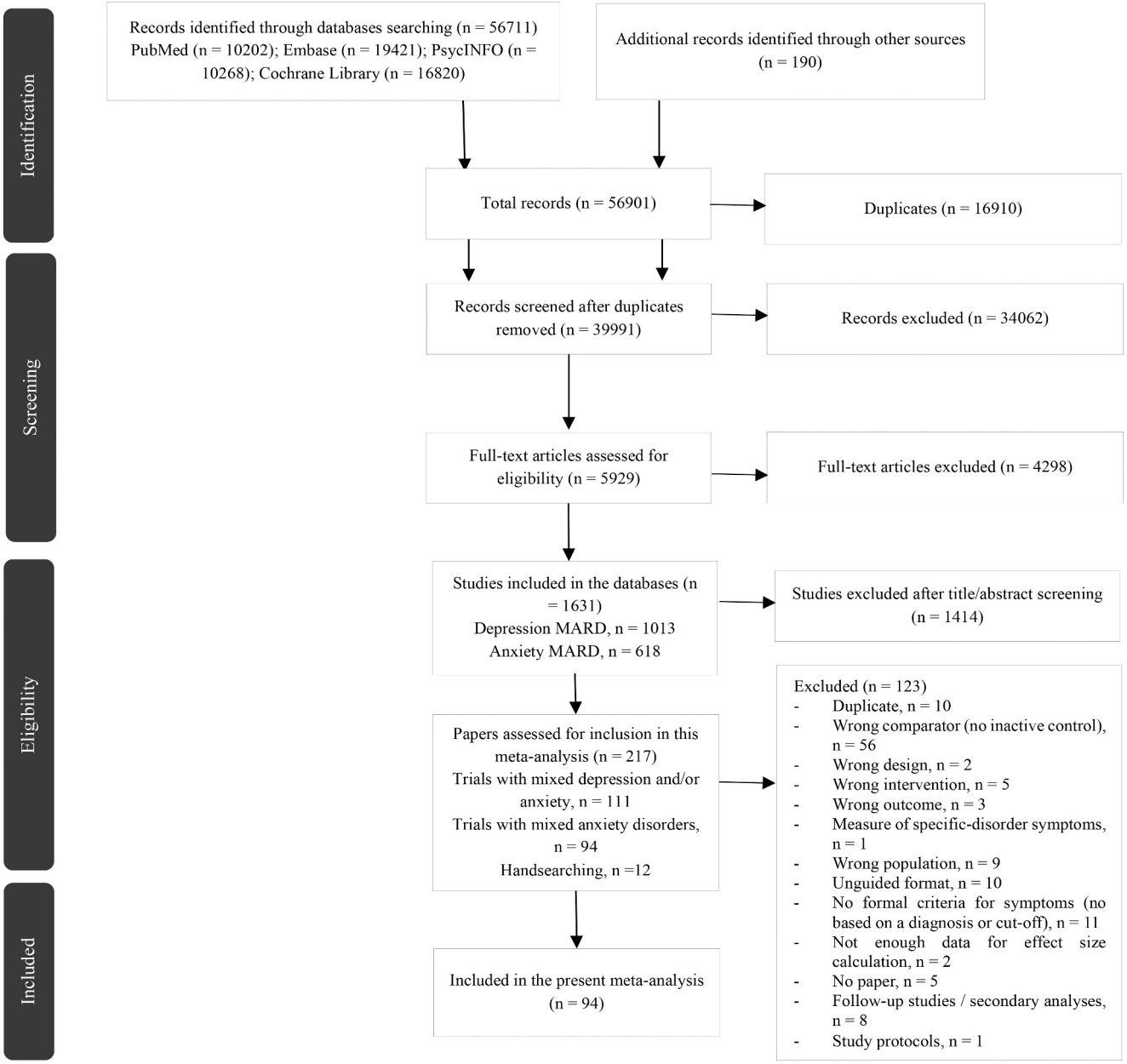

Fig. 1. PRISMA flowchart.
Note. MARD = Meta Analytic Research Domain.

69.15 % was carried out in the last ten years. Thirty-eight studies were carried out in European countries (40.4 %), 14 in the United States (14.9 %), 13 in Asian countries (13.8 %), 10 in Australia (10.6 %), 9 in the United Kingdom (9.6 %), 4 in Canada (4.3 %), and 6 in other countries (6.4 %). Thirty-eight trials (40.4 %) did not report a previous study protocol, while 34 studies (36.2 %) had a registered protocol and 22 (23.4 %) reported having it published in a previous paper. As for the recruitment strategy, 39 trials (41.5 %) recruited participants from community samples, 30 trials (31.9 %) recruited through clinical referrals, and 25 studies (26.6 %) used other recruitment methods such as recruitment via units of general medical disorders.

Among the 108 comparisons, only 28.7 % of interventions ($n = 31$) were described as 'transdiagnostic' by the study authors. In terms of theoretical approach, 63 % of TPIs ($n = 68$) were cognitive-behavioral, 16.7 % ($n = 18$) other established major approaches (e.g., problem solving therapy, acceptance and commitment therapy), 14.8 % ($n = 16$) mindfulness-based interventions, and the remaining 5.6 % (n = 6) other types of non-major psychotherapy. Regarding the control group, 50.9 % of the comparisons ($n = 55$) were with waiting-list groups, 39.8 % ($n = 43$) with usual-care and 9.3 % ($n = 10$) with other control groups. Additionally, 71 of the interventions (65.7 %) were carried out in individual format and 35 of them (32.4 %) were in group format. Regarding delivery, 57 interventions (52.8 %) were delivered face-to-face, 37 (34.3 %) were guided treatments, and 13 (12 %) were delivered in other formats (i.e., blended, videoconference, telephone-delivered or mixed formats). Most interventions did not offer optional modules (i.e., additional therapeutic units that are optional or non-mandatory) ($n = 93$; 86.1 %), while 13.9 % ($n = 15$) included optional content. In relation to sessions, 50 % of the interventions ($n = 54$) had an intermediate number of sessions (between 8 and 12), 35.2 % ($n = 38$) had <8 sessions, 9.3 % (n = 10) consisted of >12 sessions, and in 5.6 % of the cases (n = 6) the particular number of sessions was not specified. Ninety of the TPIs (83.3 %) had a fixed sequence or predefined order of the sessions, while 10 treatments were flexible in terms of the order of application of the sessions (9.3 %), and in 8 comparisons this information was not specified (7.4 %). Furthermore, in 68.5 % of the comparisons ($n = 74$), a specific treatment manual was reported as being followed to carry out the intervention, while in 31.5 % of the cases ($n = 34$), no specific manual for the intervention was mentioned in the article.

More details on the characteristics of the included studies can be found in Table 1. Regarding the methodological quality of the included studies, 45 trials had a 'high risk' of bias (47.9 %), 30 had 'some concerns' (31.9 %), and only 19 studies showed a 'low risk' of bias (20.2 %).

3.3. Overall effects of transdiagnostic interventions on depression and anxiety

The results of our primary analyses are shown in Table 2 and the forest plot can be found in Appendix C. In our main analysis, we pooled depression and anxiety outcomes together to estimate the overall effectiveness of TPIs in comparison to control conditions. After aggregating all effect sizes indicating depression and anxiety within each study before pooling across studies (combined model), the effect size for the 108 comparisons was $g = 0.59$ (95 % CI 0.5–0.68). Heterogeneity was high ($I^2 = 78.88$; 95 % CI 74.8–82.3), and the PI was broad (−0.18–1.37). The NNT was 4.96.

Sensitivity analyses led to comparable results (Table 2). Specifically, when outliers were removed the effect size remained unchanged ($g = 0.60$; 95 % CI 0.55–0.66), although heterogeneity was considerably reduced ($I^2 = 29.54$; 95 % CI 7.18–46.52; $k = 83$). The PI narrowed and no longer included zero (0.35–0.85), and the NNT was 4.86. When only studies at low RoB were considered ($k = 25$), a smaller but moderate effect size was obtained ($g = 0.48$; 95 % CI 0.33–0.62; NNT = 6.35). In this case, heterogeneity remained high, and the PI was broad.

We found indications for publication bias (Egger's test, $p < 0.0001$). The funnel plot is presented in Appendix D. When adjusting for publication bias, the effect size was considerably reduced, except for the step function selection model where the results were comparable to those obtained in the combined model ($g = 0.56$, 95 % CI 0.46–0.66). In all cases, heterogeneity remained very high and the PI was broad (Table 2).

3.4. Subgroup analyses

We conducted several pre-specified subgroup analyses, the results of which are presented in Table 3.

Subgroup analyses generally indicated no significant differences between the subgroups, except for the type of control condition, the disorders included in the trials, and the year of trial publication. The effect of TPIs showed the largest effect size compared to the waiting-list groups ($g = 0.71$; 95 % CI 0.56–0.86), a moderate effect size compared to the usual-care control groups ($g = 0.51$; 95 % CI 0.39–0.64), and the lowest effect size compared to the 'other control' groups ($g = 0.34$; 95 % CI 0.09–0.58). These differences were statistically significant ($p = 0.012$). Studies that enrolled participants solely on the basis of a diagnosis of anxiety disorder or a score above a cut-off point on a validated anxiety scale obtained a larger effect size ($g = 0.85$; 95 % CI 0.58–1.12) than those studies that enrolled participants based on a diagnosis or an elevated score on a validated scale of anxiety and/or depression ($g = 0.52$; 95 % CI 0.43–0.61). This difference was significant ($p = 0.018$). Studies published after 2008 had a larger effect size ($g = 0.61$; 95 % CI 0.52–0.71) than those published in 2008 or earlier ($g = 0.33$; 95 % CI 0.1–0.57), and this difference was statistically significant ($p = 0.013$).

3.5. Specific effects of transdiagnostic interventions on anxiety and depression separately

We also calculated pooled effect sizes separately for depression outcomes and for anxiety outcomes.

We calculated the effect size for depression outcome measures in two ways: first, considering all studies that reported depression outcomes and, second, taking into account only studies that considered people with a diagnosis or elevated symptomatology of depression in their inclusion (excluding studies focusing only on mixed anxiety disorders). In both cases, the results were very comparable between them and were similar to those found when depression and anxiety were taken together (main analysis). The effect for depression was $g = 0.57$ (95 % CI 0.47–0.67; $I^2 = 77.4$, 95 % CI 72.54–81.38; PI -0.2 - 1.34; NNT = 5.19) when all studies were considered ($k = 93$) and $g = 0.54$ (95 % 0.42–0.65; $I^2 = 79.3$, 95 % CI 74.51–83.24; PI -0.29 - 1.36; NNT = 5.56) when only studies that included patients with depression were considered ($k = 76$).

We also calculated the effect size for anxiety outcomes in two ways: first, considering all studies that reported anxiety measures and, second, considering only studies that included participants based on a diagnosis or elevated symptomatology of anxiety (excluding studies of mixed anxiety/depression). The effect size for anxiety was $g = 0.61$ (95 % CI 0.5–0.71; $I^2 = 78$, 95 % CI 73.58–81.68; PI −0.25–1.46; NNT = 4.84) when all studies were considered ($k = 103$). These results were comparable to those obtained in our main analysis. When considering only studies that included patients with anxiety ($k = 26$), the effect size was larger, with $g = 0.87$ (95 % CI 0.59–1.15; $I^2 = 79.8$, 95 % CI 71.08–85.89; PI −0.39–2.13; NNT = 3.22). These results were larger than those obtained in the main analysis.

3.6. Dropout

Differences in study dropout between intervention and control conditions were also analyzed. A risk ratio (*RR*) of 1.18 with a 95 % CI of 1.04–1.34 was obtained. This difference was significant ($p = 0.010$) and indicated a higher risk of dropout in the intervention groups than in the control ones. The forest plot of RR is available in Appendix E.

Table 1
Characteristics of included studies.

Study*	Country	Recruitment	Study protocol	Mean age	Prop women	Age group	Target group	Inclusion	Disorders included	Measures	Described TPI	Intervention	Control	N (IG)	N (CG)	Treat manual	Optional mod	Session sequence	Min sessions	N sessions	Weeks treat	Format	Delivery	Who admin	Who guides	Support	RoB assessment
Ali, 2003	oth	com	No	nr	1.00	adul	adul	cut	anx/dep	AKUADS	No	Other types of non-major psychotherapy	cau	216	150	No	No	PO	nr	8	8	Ind	FtF	C	-	No plan	hr
Barlow, 1984	us	clin	No	38	0.35	adul	adul	diag	anx	STAI-S STAI-T BDI	No	CBT	wl	10	10	Yes	No	PO	nr	18	14	Ind	FtF	Mx	-	No plan	hr
Bathgate, 2022	us	oth	No	32	0.80	adul	med	cut	anx/dep	GAD-7 PHQ-9	No	CBT	cau	15	16	Yes	Yes	PO	45-60	6	8	Ind	Vc	nr	-	No plan	hr
Belay, 2022	oth	oth	Rnp	nr	nr	adul	med	cut	anx/dep	HADS-AS HADS-DS	No	IPT	cau	62	62	Yes	No	PO	30-60	4 to 6	4 to 6	Ind	FtF	CP	-	No plan	hr
Bell, 2012	au	clin	Rnp	35	0.67	adul	adul	diag	anx	BAI BDI-II	No	CBT	wl	40	43	Yes	No	PO	nr	4 to 6	12	Ind	Guid	SA	T	H plan	sc
Benjet, 2023	oth	com	Yes	21	0.79	yadul	stud	cut	anx/dep	PHQ-ADS	Yes	CBT	cau	445	435	Yes	Yes	Flexibility, patient	nr	7	8	Ind	Guid	SA	M/Ds	H plan	sc
Berger, 2014	eu	com	No	35	0.56	adul	adul	diag	anx	BAI BDI-II	Yes	CBT	wl	44	44	Yes	No	PO	50-60	8	8	Ind	Guid	SA	M/Ds	H plan	hr
Bolinski, 2022	eu	com	Yes	26	0.54	yadul	stud	sub	anx/dep	SIGH-A GAD-7 QIDS-CR PHQ-9	Yes	CBT	cau	14	13	No	Yes	PO	45-60	7	3 to 7	Ind	Guid	M/Ds	-	H plan	lr
Brenes, 2012	us	com	No	69	0.83	old	old	diag	anx	STAI-T HAM-A BDI	No	CBT	oc	30	30	Yes	Yes	PO	nr	8 to 20	8 to 16	Ind	Tph	Mx	-	No plan	hr
Bressi, 2010	eu	clin	No	37	0.77	adul	adul	diag	anx/dep	SCL-90-R-A SCL-90-R-D	No	Dyn	cau	30	30	No	No	PO	45	40	40	Ind	FtF	P	-	No plan	hr
Calleo, 2015	us	oth	No	63	0.12	old	med	cut	anx/dep	SIGH-A SIGH-D	No	CBT	cau	10	6	No	Yes	Flexibility, both	30-40	8	12	Ind	Mx	nr	-	No plan	hr
Carlbring, 2011	eu	com	No	39	0.76	adul	adul	diag	anx	BAI MADRS-S	No	CBT	oc	27	27	No	No	Flexibility, both	nr	6 to 10	10	Ind	Guid	SA	M/Ds	H plan	sc
Chen, 2023	eas	oth	No	61	0.21	adul	med	cut	anx/dep	GAD-7 PHQ-9	No	Other types of non-major psychotherapy	cau	128	128	No	No	nr	nr	nr	nr	nr	FtF	nr	-	No plan	hr
Compen, 2018	eu	com	Yes	52	0.86	adul	med	cut	anx/dep	HADS-T	No	M (FtF MBCT)	cau	77	78	Yes	No	PO	150	8	8	Gr	FtF	CP	-	H plan	lr
											No	M (Internet-based MBCT)	cau	90	78	Yes	No	PO	nr	8	8	Ind	Guid	SA	CP	H plan	lr
Dao, 2011	us	clin	No	64	0.22	adul	adul	cut	anx/dep	STAI-T BDI-II	No	CBT	cau	50	50	No	No	PO	60	4	4	Ind	FtF	CP	-	No plan	hr
Den Boer, 2007	eu	clin	No	41	0.66	adul	adul	diag	anx/dep	STAI-S STAI-T BDI SCL-90-A SCL-90-D	No	CST	cau	75	76	Yes	No	PO	30-40	12	12	Gr	FtF	Mx	-	No plan	sc
Díaz-García, 2021	eu	com	Yes	34	0.72	adul	adul	diag	anx/dep	BAI BDI-II	Yes	CBT (TIBP)	wl	71	72	Yes	No	PO	nr	12	18	Ind	Guid	SA	M/Ds	H-ICT plan	sc
											Yes	CBT (TIBP+PA)	wl	73	72	Yes	No	PO	nr	16	18	Ind	Guid	SA	M/Ds	H-ICT plan	sc
Doyle, 2017	au	com	Yes	68	0.65	old	med	cut	anx/dep	BAI PHQ-9	No	CBT	oc	54	56	Yes	No	PO	nr	8	8	Ind	Tph	CP	-	No plan	sc
Erickson, 2007	can	clin	No	41	0.64	adul	adul	diag	anx	BAI	No	CBT	wl	73	79	No	No	PO	120	11	11	Gr	FtF	CP	-	No plan	hr
Ezegbe, 2019	oth	com	No	21	0.50	yadul	stud	cut	anx/dep	SMGAD-A Goldberg-DS	No	CBT	wl	28	27	Yes	No	PO	120	8 to 12	8	Gr	FtF	CP	-	No plan	sc
Fenger, 2020	eu	com	Yes	27	0.81	adul	adul	diag	anx	BAI SCL-90-R-A SCL-90-R-D	No	CBT	wl	32	32	Yes	No	PO	30-40	9	9	Ind	Guid	SA	Mx	H plan	hr
Fernandez-Rodriguez, 2021	eu	clin	No	51	0.94	adul	adul	cut	anx/dep	HADS-AS HADS-DS HADS-T	No	BAT	wl	22	27	Yes	No	PO	90	12	12	Gr	FtF	CP	-	No plan	sc

Study*	Country	Recruitment	Study protocol	Mean age	Prop women	Age group	Target group	Inclusion	Disorders included	Measures	Described TPI	Intervention	Control	N (IG)	N (CG)	Treat manual	Optional med	Session sequence	Min sessions	N sessions	Weeks treat	Format	Delivery	Who admin	Who guides	Support	RoB assessment
											No	ACT	wl	17	27	Yes	No	PO	90	12	12	Gr	FtF	CP	-	No plan	sc
Fernandez-Rodriguez, 2023	eu	com	Rnp	41	0.77	adul	adul	cut	anx/dep	HADS-AS GAD-7 HADS-DS	No	BAT	wl	34	34	Yes	No	PO	90	8	8	Gr	FtF	CP	-	No plan	lr
											No	ACT	wl	27	34	Yes	No	PO	90	8	8	Gr	FtF	CP	-	No plan	lr
											Yes	CBT (TD-CBT)	wl	33	34	Yes	No	PO	90	8	8	Gr	FtF	CP	-	No plan	lr
Gonzalez-Robles, 2020	eu	clin	Yes	38	0.69	adul	adul	diag	anx/dep	BAI BDI-II	Yes	CBT	cau	106	108	Yes	No	PO	nr	12	18	Ind	Guid	SA	M/Ds	H-ICT plan	sc
Gould, 2019	us	com	Rnp	69	0.60	old	old	diag	anx	GAS	No	Other types of non-major psychotherapy	wl	20	20	No	No	PO	nr	4	4	Ind	OGuid	SA	Mx	H plan	hr
Graham, 2020	us	clin	Rnp	42	0.82	adul	adul	cut	anx/dep	PHQ-9 GAD-7	Yes	CBT	wl	74	72	Yes	Yes	Flexibility, patient	nr	nr	8	Ind	SpGuid	SA	M/Ds	H-ICT plan	lr
Greer, 2012	us	oth	Rnp	56	0.70	adul	med	cut	anx/dep	HAM-A MADRS	No	CBT	wl	20	20	Yes	No	Flexibility, therapist	nr	6	8	Ind	Mx	CP	-	No plan	hr
Hamilton, 2020	uk	clin	Yes	31	1.00	adul	ppd	cut	anx/dep	STAI-S STAI-T EPDS	No	CAT	cau	20	19	Yes	No	PO	nr	16	16	Ind	FtF	CP	-	No plan	hr
Heller, 2020	eu	com	Yes	32	1.00	adul	ppd	cut	anx/dep	CES-D HADS-AS	No	PST	cau	79	80	No	No	PO	nr	5	5	Ind	Guid	SA	M/Ds	H plan	lr
Holdgaard, 2023	eu	oth	Rnp	54	0.33	adul	med	cut	anx/dep	HADS-AS HADS-DS HADS-T	No	CBT	cau	74	73	Yes	No	PO	120	5	5	Gr	FtF	Nurse	-	No plan	sc
Huang, 2023	eas	oth	No	59	1.00	old	med	cut	anx	GAD-7	No	M	cau	62	58	No	No	PO	60	8	8	Gr	FtF	nr	-	No plan	hr
Hulsbosch, 2023	eu	com	Yes	31	1.00	adul	ppd	cut	anx/dep	TPDS-NA EDS	No	M	wl	112	112	Yes	No	PO	60	8	8	Ind	Guid	SA	C	H-ICT plan	lr
Hynninen, 2010	eu	com	No	61	0.51	adul	med	cut	anx/dep	BAI BDI-II	No	CBT	cau	25	26	Yes	No	PO	120	7	7	Gr	FtF	M/Ds	-	No plan	sc
Irgens, 2012	eu	clin	No	37	0.73	adul	adul	diag	anx	HADS-AS HADS-DS	No	Other types of non-major psychotherapy	wl	24	24	No	Yes	PO	25-50	2	nr	Ind	FtF	CP	-	No plan	hr
Ito, 2023	eas	clin	Yes	37	0.61	adul	adul	diag	anx/dep	GRID-HAMD SIGH-A	Yes	CBT	cau	52	52	Yes	No	PO	50-60	12 to 18	20	Ind	nr	CP	-	No plan	lr
Johansson, 2013	eu	com	Rnp	45	0.82	adul	adul	diag	anx/dep	GAD-7 PHQ-9	No	Dyn	wl	50	50	Yes	No	PO	nr	8	10	Ind	Guid	SA	M/Ds	H-ICT plan	lr
Johnston, 2011	au	com	Rnp	42	0.59	adul	adul	diag	anx	GAD-7 PHQ-9	Yes	CBT (Coach-supported)	wl	43	42	Yes	No	PO	nr	8	10	Ind	Guid	SA	C	H-ICT plan	sc
											Yes	CBT (Clinician-supported)	wl	46	42	Yes	No	PO	nr	8	10	Ind	Guid	SA	CP	H-ICT plan	sc
Kannampalil, 2023	us	oth	Rnp	38	0.68	adul	adul	cut	anx/dep	HADS-AS HADS-DS HADS-T	No	PST	wl	42	21	Yes	No	PO	12	8	12	Ind	Mx	SA	C	H-ICT plan	hr
Karyotaki, 2022	eu	com	Yes	22	0.81	yadul	stud	cut	anx/dep	GAD-7 PHQ-9	Yes	CBT	cau	48	52	Yes	Yes	Flexibility, patient	45-60	7	7	Ind	Guid	SA	M/Ds	H-ICT plan	lr
Kim, 2009	eas	clin	No	40	0.37	adul	adul	diag	anx	BAI BDI SCL-90-R-A SCL-90-R-D HAM-A HAM-D	No	M	oc	24	22	Yes	No	PO	90	8	8	Gr	FtF	CP	-	No plan	hr
Kitchiner, 2009	uk	clin	No	40	0.48	adul	adul	diag	anx	GHQ-28-T GHQ-28-A BDI	No	CBT (Stress control)	wl	25	24	Yes	No	PO	120	6	6	Gr	FtF	Nurse	-	No plan	hr
											No	CBT (Anxiety management)	wl	24	24	Yes	No	PO	120	6	6	Gr	FtF	OT	-	No plan	hr
Kladnitski, 2020	au	com	Rnp	39	0.86	adul	adul	diag	anx/dep	GAD-7 PHQ-9	Yes	CBT (iCBT)	cau	39	39	No	No	PO	47-65	6	14	Ind	Guid	SA	CP	H plan	sc
											Yes	M (MEiCBT)	cau	40	39	No	No	PO	63-97	6	14	Ind	Guid	SA	CP	H plan	sc

Study*	Country	Recruitment	Study protocol	Mean age	Prop women	Age group	Target group	Inclusion	Disorders included	Measures	Described TPI	Intervention	Control	N (IG)	N (CG)	Treat manual	Optional med	Session sequence	Min sessions	N sessions	Weeks treat	Format	Delivery	Who admin	Who guides	Support	RoB assessment
											Yes	M (iMT)	cau	40	39	No	No	PO	43–48	6	14	Ind	Guid	SA	CP	H plan	sc
Kleiboer, 2015	eu	com	Yes	44	0.65	adul	adul	cut	anx/dep	BAI PHQ-9 HADS-AS CES-D	No	PST (Support on request)	wl	108	106	Yes	No	PO	nr	5	5	Ind	Guid	SA	M/Ds	H-ICT plan	sc
											No	PST (Weekly support)	wl	106	106	Yes	No	PO	nr	5	5	Ind	Guid	SA	M/Ds	H-ICT plan	sc
Knapstad, 2020	eu	com	Rnp	35	0.67	adul	adul	cut	anx/dep	GAD-7 PHQ-9	No	CBT	cau	463	218	No	nr	Flexibility, both	nr	nr	10 to 14	Mx	Mx	Mx	-	nr	sc
Kunik, 2008	us	com	No	66	0.04	old	med	cut	anx/dep	BAI BDI-II	No	CBT	oc	118	120	Yes	No	PO	60	8	8	Gr	FtF	M/Ds	-	No plan	hr
Lam, 2010	eas	clin	Rnp	72	0.59	old	old	cut	anx/dep	HADS-AS HADS-DS	No	PST	oc	149	150	No	No	PO	20-45	3	3	Ind	FtF	GP	-	No plan	sc
Lerma, 2017	oth	oth	No	42	0.53	adul	med	cut	anx/dep	BAI BDI	No	CBT	wl	38	22	Yes	No	PO	120	5	5	Gr	FtF	nr	-	No plan	hr
Maas, 2019	eu	com	Rnp	53	0.83	adul	adul	diag	anx/dep	SCL-90-A BDI-II	Yes	Other types of non-major psychotherapy	wl	43	40	Yes	No	PO	120	15	15	Gr	FtF	Mx	-	No plan	lr
Mahmoodi, 2021	oth	clin	Rnp	27	0.53	adul	adul	diag	anx/dep	BAI BDI-II	No	CBT (CBT-P)	wl	25	25	Yes	No	PO	60	12	12	Ind	FtF	M/Ds	-	No plan	hr
											Yes	CBT (UP)	wl	25	25	Yes	No	PO	60	12	12	Ind	FtF	CP	-	No plan	hr
Maitland, 2016	eu	com	No	21	0.50	adul	adul	diag	anx/dep	SCID	No	FAP	oc	12	11	Yes	No	nr	60	6	6	Ind	FtF	CP	-	No plan	sc
Mathiasen, 2016	eu	com	No	31	0.62	adul	adul	diag	anx/dep	BAI BDI-II	No	CBT	wl	36	31	Yes	No	Flexibility, patient	nr	9	9	Ind	Guid	SA	CP	H-ICT plan	sc
Mead, 2005	uk	clin	Rnp	40	0.68	adul	adul	cut	anx/dep	HADS-T BDI	No	CBT	wl	57	57	Yes	No	PO	15-30	4	4	Ind	OGuid	SA	T	H plan	sc
Muntingh, 2016	eu	clin	No	47	0.66	adul	adul	diag	anx/dep	PHQ-9 BAI	No	Other types of non-major psychotherapy	cau	70	71	Yes	No	PO	nr	13	26	Ind	FtF	Mx	-	No plan	sc
Nassim, 2021	can	oth	Rnp	62	0.58	adul	med	cut	anx/dep	GAD-7 PHQ-9	No	M	oc	25	30	No	No	PO	20	16	8	Gr	FtF	Mx	-	No plan	hr
Newby, 2013	uk	com	Rnp	44	0.78	adul	adul	cut	anx/dep	GAD-7 PHQ-9 BDI-II	No	CBT	wl	49	60	Yes	Yes	PO	nr	6	10	Ind	Guid	SA	CP	H plan	sc
Ninomiya, 2020	eas	clin	Yes	41	0.38	adul	adul	diag	anx	STAI-S STAI-T	No	M	wl	20	20	Yes	No	nr	120	8	8	Gr	FtF	P	-	No plan	lr
Nissen, 2020	eu	oth	Rnp	55	0.91	adul	med	cut	anx/dep	STAI-Y BDI-II	No	M	wl	104	46	Yes	nr	PO	nr	8	8	Ind	Guid	SA	M/Ds	H plan	sc
Norlund, 2018	eu	oth	Yes	60	0.34	adul	med	cut	anx/dep	HADS-AS HADS-DS HADS-T	No	CBT	cau	117	122	No	Yes	Flexibility, patient	nr	10	14	Ind	Guid	SA	CP	H plan	lr
Pachankis, 2020	us	com	Rnp	26	1.00	yadul	oth	cut	anx/dep	OASIS ODSIS CES-D	Yes	CBT	wl	30	30	Yes	No	PO	60	10	10	Ind	FtF	Mx	-	No plan	sc
Peris-Baquero, 2023	eu	clin	Yes	41	0.76	adul	adul	diag	anx/dep	BAI BDI-II	Yes	CBT	cau	211	187	Yes	No	PO	120	12	12	Gr	FtF	Mx	-	No plan	sc
Ponsford, 2016	au	oth	No	42	0.27	adul	med	diag	anx/dep	HADS-AS DASS-D	No	CBT	wl	52	23	Yes	No	PO	nr	12	12	Ind	FtF	CP	-	No plan	hr
Proudfoot, 2004	uk	clin	No	44	0.74	adul	adul	cut	anx/dep	BAI BDI	No	CBT	cau	146	128	Yes	Yes	PO	50	8	9	Ind	Guid	SA	Nurse	H plan	sc
Ren, 2019	eas	oth	Rnp	47	1.00	adul	med	cut	anx/dep	HAM-A HAM-D	No	CBT	oc (SCM)	98	98	No	No	nr	nr	9	12	Gr	FtF	CP	-	No plan	hr
											No	CBT	cau (usual medical care)	98	196	No	No	nr	nr	9	12	Gr	FtF	CP	-	No plan	hr
Riccardi, 2017	us	clin	Yes	28	0.75	adul	adul	diag	anx	ASI BAI BDI-II	Yes	CBT	wl	16	12	No	No	PO	50	5	5	Ind	FtF	M/Ds	-	No plan	hr
Richards, 2020	uk	oth	Yes	29	0.71	adul	adul	cut	anx/dep	GAD-7 PHQ-9	No	CBT	wl	241	120	No	No	PO	60	8	8	Ind	Guid	SA	M/Ds	No plan	lr
Roberge, 2022	au	com	Yes	37	0.86	adul	adul	cut	anx	BAI	Yes	CBT	cau	117	114	No	No	PO	120	12	12	Gr	FtF	CP	-	No plan	lr

Study*	Country	Recruitment	Study protocol	Mean age	Prop women	Age group	Target group	Inclusion	Disorders included	Measures	Described TPI	Intervention	Control	N (IG)	N (CG)	Treat manual	Optional mod	Session sequence	Min sessions	N sessions	Weeks treat	Format	Delivery	Who admin	Who guides	Support	RoB assessment
Rogiers, 2022	eu	com	Rnp	42	0.67	adul	adul	diag	anx/dep	STAI-S STAI-T BDI-II	Yes	CBT	wl	45	35	Yes	No	PO	90	7	7	Gr	FtF	Mx	-	No plan	lr
Ruiz, 2020	eu	com	No	29	0.71	adul	adul	cut	anx/dep	DASS-21-A DASS-21-D	No	ACT	wl	23	25	Yes	No	PO	60	2	2	Ind	FtF	Mx	-	No plan	sc
Sadeh-Sharvit, 2023	us	clin	No	31	0.72	adul	adul	diag	anx/dep	GAD-7 PHQ-9	No	CBT	cau	23	24	No	No	nr	nr	nr	8	Ind	FtF	Mx	-	No plan	sc
Saravanan, 2014	eas	oth	No	19	0.63	yadul	stud	cut	anx	WTAS	No	CBT	wl	32	33	No	No	PO	nr	5	3	Ind	FtF	CP	-	No plan	hr
Schaeuffele, 2022	eu	com	Rnp	37	0.68	adul	adul	diag	anx/dep	GAD-7 PHQ-9	Yes	CBT	wl	66	66	Yes	No	PO	nr	10	10	Ind	Guid	SA	Mx	H plan	lr
Scheidt, 2013	eu	oth	No	49	1.00	adul	med	diag	anx/dep	HADS-AS HADS-DS	No	Dyn	cau	24	23	Yes	No	PO	50-60	25	25	Ind	FtF	CP	-	No plan	hr
Schmidt, 2012	us	clin	No	36	0.73	adul	adul	diag	anx/dep	ASI SPRAS BDI-II	Yes	CBT	wl	57	39	No	No	PO	120	10	10	Ind	FtF	M/Ds	-	No plan	sc
Schroder, 2017	eu	oth	No	37	0.72	adul	adul	cut	anx	BAI PHQ-9	Yes	CBT	wl	90	90	No	No	PO	30-50	4	4	Ind	Guid	SA	CP	H-ICT plan	hr
Schuurmans, 2006	eu	com	No	70	0.74	old	old	diag	anx	HAM-A	No	CBT	wl	42	13	Yes	No	PO	60	15	15	Ind	FtF	CP	-	No plan	hr
Slatina Murga, 2021	eu	clin	Yes	51	0.72	adul	adul	diag	anx/dep	DASS-21-A DASS-21-D	No	Solution-focused	cau	37	35	Yes	No	Flexibility, patient	34	4	24	Ind	Blend	Mx	-	No plan	hr
Sohanpal, 2024	uk	oth	Yes	69	0.50	old	med	cut	anx/dep	HADS-AS HADS-DS BAI BDI-II	No	CBT	cau	242	181	Yes	Yes	PO	40-60	6 to 8	6 to 8	Ind	Mx	Mx	-	No plan	hr
Sorby, 1991	uk	clin	No	nr	0.81	adul	adul	diag	anx	HADS-AS	No	CBT	cau	33	31	Yes	No	PO	nr	nr	8	Ind	OGuid	SA	GP	H plan	hr
Sun, 2022	eas	com	Rnp	22	0.74	yadul	stud	cut	anx/dep	GAD-7 PHQ-9	No	M	oc	57	57	No	No	PO	60	4	4	Gr	Blend	CP	-	H plan	sc
Titov, 2010	au	oth	No	40	0.68	adul	adul	diag	anx	GAD-7 PHQ-9	Yes	CBT	wl	42	44	No	Yes	PO	nr	6	8	Ind	Guid	SA	CP	H-ICT plan	sc
Titov, 2011	au	com	Rnp	44	0.73	adul	adul	diag	anx/dep	GAD-7 PHQ-9	Yes	CBT	wl	39	38	No	Yes	PO	nr	8	10	Ind	Guid	SA	CP	H-ICT plan	hr
Torres, 2019	can	clin	Rnp	68	0.72	old	old	cut	anx/dep	GAD-7 PHQ-9	No	M	cau	32	29	Yes	No	PO	120	8	8	Gr	FtF	Mx	-	ICT plan	hr
Trimmer, 2018	can	clin	No	43	0.54	adul	adul	diag	anx/dep	HADS-AS HADS-DS HADS-T	No	CBT	cau	14	14	Yes	No	PO	90	9	9	Gr	FtF	CP	-	No plan	hr
Tulbure, 2018	eu	com	Rnp	34	0.81	adul	adul	diag	anx/dep	BAI OASIS BDI-II ODSIS GAD-7	Yes	CBT	wl	69	36	Yes	No	PO	nr	9	10	Ind	Guid	M/Ds	-	H-ICT plan	lr
Tully, 2022	au	oth	Yes	59	0.53	adul	med	diag	anx/dep	GAD-7 OASIS PHQ-9	Yes	CBT	cau	9	10	Yes	No	PO	50-90	12	12	Ind	FtF	CP	-	No plan	lr
Van Beek, 2013	eu	oth	Rnp	49	0.43	adul	med	diag	anx/dep	HADS-AS HADS-DS	No	CBT	cau	60	53	Yes	Yes	PO	45	6	24	Ind	FtF	CP	-	No plan	hr
Vollestad, 2011	eu	com	No	43	0.67	adul	adul	diag	anx	BAI STAI-S STAI-T BDI-II	No	M	wl	39	37	Yes	No	PO	150	8	8	Gr	FtF	CP	-	No plan	hr
Wallsten, 2023	eu	com	Rnp	47	0.74	adul	adul	diag	anx/dep	OASIS MADRS-S	No	CBT	wl	36	37	Yes	No	PO	105	8	8	Gr	FtF	Mx	-	No plan	lr
Wang, 2023	eas	com	Rnp	nr	0.83	adul	adul	cut	anx	GAD-7 PHQ-9	No	M (mMBSR)	wl	50	50	No	No	nr	60	6	3	Gr	Vc	CP	-	H plan	hr
											No	CBT	wl	50	50	No	No	nr	60	6	3	Gr	Vc	CP	-	H plan	hr
Wuthrich, 2019	au	oth	Rnp	69	0.36	old	med	cut	anx/dep	GAI GDS	No	CBT	wl	6	5	Yes	No	PO	45	10	10	Ind	Tph	CP	-	No plan	hr
Yamamoto, 2023	eas	clin	Rnp	44	0.60	adul	adul	diag	anx/dep	STAI-S STAI-T HAM-D	No	M	wl	15	14	No	No	PO	90	8	8	Gr	FtF	P	-	No plan	hr
Yan, 2022	eas	clin	Rnp	66	0.77	old	old	diag	anx/dep	HAM-A HAM-D GAD-7	Yes	CBT (TD-GCBT)	cau	40	40	Yes	No	PO	90	8	12	Gr	FtF	Nurse	-	No plan	hr
Study*	Country	Recruitment	Study protocol	Mean age	Prop women	Age group	Target group	Inclusion	Disorders included	Measures	Described TPI	Intervention	Control	N (IG)	N (CG)	Treat manual	Optional mod	Session sequence	Min sessions	N sessions	Weeks treat	Format	Delivery	Who admin	Who guides	Support	RoB assessment
										PHQ-9																	
											Yes	CBT (TD-CBT)	cau	40	40	Yes	No	PO	60	8	12	Ind	FtF	Nurse	-	No plan	hr
Yorke, 2016	uk	oth	No	47	0.57	adul	med	cut	anx/dep	HADS-AS HADS-DS	No	CBT	cau	23	21	Yes	No	PO	90	8	8	Gr	FtF	nr	-	No plan	hr
Zhang, 2022	eas	oth	Rnp	30	1.00	adul	ppd	cut	anx/dep	GAD-7 EPDS	No	M	cau	80	80	Yes	No	PO	nr	6	6	Ind	Guid	SA	nr	nr	hr

Note. *References of included studies are marked with an asterisk and the corresponding citations are the following: Ali et al., 2003; Barlow et al., 1984; Bathgate et al., 2022; Belay et al., 2022; Bell et al., 2012; Benjet et al., 2023; Berger et al., 2014; Bolinski et al., 2022; Brenes et al., 2012; Bressi et al., 2010; Calleo et al., 2015; Carlbring et al., 2011; Chen et al., 2023; Compen et al., 2018; Dao et al., 2011; den Boer et al., 2007; Díaz-García et al., 2021; Doyle et al., 2017; Erickson et al., 2007; Ezegbe et al., 2019; Fenger et al., 2020; Fernández-Rodríguez et al., 2021; Fernández-Rodríguez et al., 2023; González-Robles et al., 2020; Gould et al., 2019; Graham et al., 2020; Greer et al., 2012; Hamilton et al., 2020; Heller et al., 2020; Holdgaard et al., 2023; Huang et al., 2023; Hulsbosch et al., 2023; Hynninen et al., 2010; Irgens et al., 2012; Ito et al., 2023; Johansson et al., 2013; Johnston et al., 2011; Kannampallil et al., 2023; Karyotaki et al., 2022; Kim et al., 2009; Kitchiner et al., 2009; Kladnitski et al., 2020; Kleiboer et al., 2015; Knapstad et al., 2020; Kunik et al., 2008; Lam et al., 2010; Lerma et al., 2017; Maas et al., 2019; Mahmoodi et al., 2021; Maitland et al., 2016; Mathiasen et al., 2016; Mead et al., 2005; Muntingh et al., 2016; Nassim et al., 2021; Newby et al., 2013; Ninomiya et al., 2020; Nissen et al., 2020; Norlund et al., 2018; Pachankis et al., 2020; Peris-Baquero and Osma, 2023; Ponsford et al., 2016; Proudfoot et al., 2004; Ren et al., 2019; Riccardi et al., 2017; Richards et al., 2020; Roberge et al., 2022; Rogiers et al., 2022; Ruiz et al., 2020; Sadeh-Sharvit et al., 2023; Saravanan and Kingston, 2014; Schaeuffele et al., 2022; Scheidt et al., 2013; Schmidt et al., 2012; Schroder et al., 2017; Schuurmans et al., 2006; Slatina Murga et al., 2021; Sohanpal et al., 2024; Sorby et al., 1991; Sun et al., 2022; Titov et al., 2010; Titov et al., 2011; Torres-Platas et al., 2019; Trimmer et al., 2018; Tulbure et al., 2018; Tully et al., 2022; van Beek et al., 2013; Vollestad et al., 2011; Wallsten et al., 2023; Wang et al., 2023; Wuthrich and Rapee, 2019; Yamamoto et al., 2023; Yan et al., 2022; Yorke et al., 2016; Zhang et al., 2022. ACT = Acceptance and Commitment Therapy; adul = adults; AKUADS = Aga Khan University Anxiety and Depression Scale; anx = anxiety; anx/dep = anxiety and/or depression; ASI = Anxiety Sensitivity Index; au = Australia and New Zealand; BAI = Beck Anxiety Inventory; BAT = behavioral activation; BDI = Beck Depression Inventory; Blend = blended format; C = counselor or coach; can = Canada; CAT = Cognitive Analytic Therapy; cau = care-as-usual; CBT = cognitive-behavioral therapy; CBT-P = CBT for perfectionism; CES-D = Center for Epidemiological Studies Depression scale; clin = clinical; com = community; CP = Clinical Psychologist; CST = Cognitive self-therapy; cut = cut-off score; DASS-21-A = 21-item Depression, Anxiety and Stress Scale – Anxiety; DASS-21-D = 21-item Depression, Anxiety and Stress Scale – Depression; DASS-D = Depression, Anxiety and Stress Scale – Depression; Described TPI = Described as 'transdiagnostic' by study authors; diag = diagnostic; Dyn = psychodynamic therapy; eas = East Asia; eMBCT = Internet-based mindfulness-based cognitive therapy; EPDS = Edinburgh Postnatal Depression Scale; eu = European countries; FAP = Functional Analytic Psychotherapy; FtF = fase-to-face; GAD-7 = 7-item Generalized Anxiety Disorder Scale; GAI = Geriatric Anxiety Inventory; GAS = Geriatric Anxiety Scale; GDS = Geriatric Depression Scale; GHQ-28-A = 28-item version of the General Health Questionnaire – Anxiety subscale; GHQ-28-T = 28-item version of the General Health Questionnaire – Total score; Goldberg-DS =

Goldberg Depression Scale; GP = general practicioner; Gr = Group; GRID-HAMD = GRID – Hamilton Depression Rating Scale; Guid = online web guided; HADS-AS = Hospital Anxiety and Depression Scale – Anxiety scale; HADS-DS = Hospital Anxiety and Depression Scale – Depression scale; HADS-T = Hospital Anxiety and Depression Scale – Total score; HAM-A = Hamilton Anxiety Rating Scale; HAM-D = Hamilton Depression Rating Scale; H-ICT plan = human and ICT-based support plan; H plan = human support plan; hr = high risk; iCBT = Internet-based CBT; ICT plan = ICT-based plan; iMT = Internet-based mindfulness training; Ind = individual; IPT = Interpersonal Therapy; lr = low risk; M = mindfulness; M/Ds = graduate, master or doctorate students of psychology; MADRS = Montgomery-Åsberg Depression Rating Scale; MADRS-S = Montgomery-Åsberg Depression Rating Scale – Self-rated version; MBCT = mindfulness-based cognitive therapy; med = general medical disorders; MEiCBT = mindfulness-enhanced iCBT; Min sessions = lenght of the sessions (minutes); mMBSR = modified mindfulness-based stress reduction; Mx = mixed; N (IG) = randomized to Intervention Group; N (CG) = randomized to Control Group; nr = not reported; N sessions = number of sessions; OASIS = Overall Anxiety Severity and Impairment Scale; oc = other control; ODSIS = Overall Depression Severity and Impairment Scale; OGuid = other guided interventions; old = older adults; Optional mod = Optional modules; OT = occupational therapist; oth = other; P = Psychiatrist; PHQ-9 = 9-item Patient Health Questionnaire; PHQ-ADS = Patient Health Questionnaire Anxiety and Depression Scale; PO = Predefined order; ppd = women with perinatal depression or anxiety; Prop women = proportion of women; PST = Problem Solving Therapy; QIDS-CR = Quick Inventory of Depressive Symptomatology – Clinician Rated; Rpn = registered, not published; SA = self-administered; sc = some concerns; SCL-90-A = Symptom Checklist-90 – Anxiety; SCL-90-D = Symptom Checklist-90 – Depression; SCL-90-R-A = Symptom Checklist-90-Revised – Anxiety; SCL-90-R-D = Symptom Checklist-90-Revised – Depression; SCM = self-care management; SIGH-A = Structured Interview Guide for the Hamilton Anxiety Rating Scale; SIGH-D = Structured Interview Guide for the Hamilton Depression Rating Scale; SMGAD-A = Severity Measure for Generalized Anxiety Disorder – Adult; SpGuid = Smartphone Guided; SPRAS = Sheehan Patient – Rated Anxiety Scale; STAI-S = State-Trait Anxiety Inventory – State; STAI-T = State-Trait Anxiety Inventory – Trait; STAI-Y = State-Trait Anxiety Inventory Y-Form; stud = student population; sub = subclinical population; T = technicians or other support staff; TD-CBT = transdiagnostic CBT; TD-GCBT = transdiagnostic group CBT; TIBP = transdiagnostic internet-based protocol; TIBP+PA = TIBP + modules for positive affect; Treat manual = treatment manual; TPDS-NA = Tilburg Pregnancy Distress Scale negative affect; Tph = telephone; uk = United Kingdom; UP = Unified Protocol; us = United States; Vc = videoconference; Weeks treat = length of the treatment (weeks); yadul = young adults; Who admin = who administered the treatment; Who guides = who provides the support in self-applied interventions; wl = waiting-list; WTAS = Westside Test Anxiety Scale.

4. Discussion

The aim of this meta-analysis was to provide a comprehensive review of the effect of transdiagnostic interventions for people with depression and/or anxiety, considering all main therapeutic approaches and a wide range of treatment formats. A total of 94 randomized trials were included, with 108 comparisons between interventions and control groups, and a total of 12,443 participants.

Overall, transdiagnostic treatments were shown to be effective in the treatment of anxiety and depression. More specifically, we found that TPIs have moderate effects on depression and anxiety symptomatology ($g = 0.59$). Heterogeneity was high, but the results obtained were maintained over several sensitivity analyses, although reduced when considering only low RoB studies ($g = 0.48$). These findings are aligned with previous, more specific meta-analyses on transdiagnostic treatments for anxiety and depression, which also found moderate to large effects of these interventions (e.g., Păsărelu et al., 2017; Pearl and Norton, 2017; Sakiris and Berle, 2019; Schaeuffele et al., 2024). The overall results are also comparable to those found in the study by Cuijpers et al. (2023), which included studies with mixed depression and anxiety samples.

Our results suggested that TPIs may be equally effective regardless of therapeutic approach, type of participant inclusion, recruitment strategies, target group, format and type of delivery, and number of sessions, as no significant differences in effect sizes were found. Thus, CBT, mindfulness-based, and other types of psychotherapy interventions were found to have comparable efficacy, consistent with previous findings (e.g., Papola et al., 2022, 2024). This aligns with broader evidence in psychotherapy research, which indicates no significant differences in outcomes between bona fide interventions (Barkham and Lambert, 2021). We acknowledge that the boundaries for classifying TPIs according to their theoretical approach may not be entirely clear. In this case, we opted for a categorization that separates the CBT approach from other therapies such as ACT and mindfulness-based (commonly considered third-wave therapies) in order to better reflect the diversity present in the current literature on transdiagnostic interventions. Although CBT interventions are predominant, the inclusion of other types of interventions strengthens the breadth of this meta-analysis. It is also worth noting that we found comparable effectiveness between TPIs explicitly labeled as transdiagnostic and those that were not. These findings support the definition of 'transdiagnostic psychological intervention' adopted in this study. Given the disparity in the use of the term 'transdiagnostic' and the lack of consensus on its precise definition (Dalgleish et al., 2020; Sauer-Zavala et al., 2017), we adopted a pragmatic definition in this review, considering TPIs to be those interventions aimed at addressing a variety of ED, in line with the broader conceptualizations found in the literature (McEvoy et al., 2009). In light of these findings, we would recommend maintaining this pragmatic definition until future research data suggests otherwise. Additionally, we would advise future researchers to provide clear and detailed descriptions of intervention targets and proposed mechanisms of change, as it may offer more meaningful insights for the advancement of the transdiagnostic field than reliance on labeling alone. We also found no significant differences depending on whether the treatment was delivered individually or in groups, or across different forms of administration, as found in other previous studies (e.g., Cuijpers et al., 2019; Papola et al., 2023b). This suggests that newer therapy delivery formats (guided, telephonic, videoconferencing or blended formats) may be as effective as conventional face-to-face delivery, potentially improving the accessibility and scalability of evidence-based interventions for ED. Among these newer delivery modes, guided web-based interventions were the most frequently examined. Notably, although blended treatment delivery (i.e., the combination of face-to-face and Internet-delivered elements) is a growing field of study and a considerable number of papers have been published on this format for ED in recent years (e.g., Kemmeren et al., 2023; Mathiasen et al., 2022; Rasing et al., 2021; Romijn et al., 2021), only two blended studies met the criteria for this meta-analysis, indicating that there are still few transdiagnostic interventions delivered in this format.

We found significant differences between studies that used different control groups, between studies that required participants to present depression and/or anxiety or only anxiety, and between studies published before or after 2008. The difference between the types of control conditions is frequently found in other meta-analysis studies (e.g., Cuijpers et al., 2021, 2023; Newby et al., 2016), with waitlist-controlled studies being associated to inflated effect sizes (Cuijpers et al., 2024). It is necessary to explore in greater depth the reasons behind the differences regarding the disorders included. In the subgroup of studies focusing on mixed anxiety disorders (as per the trial inclusion criteria), it is probable that the participants also presented comorbid depressive symptoms. In fact, both outcome measures were reported in most of the included trials. Therefore, it is difficult to clearly differentiate between the subgroup of studies focusing only on anxiety disorders and the subgroup of studies including also participants with depression. Regarding differences related to year of publication, they could be indicating an improvement and refinement of TPIs over the years, which is logical considering the progressive consolidation of this field. However, they could also be due to the unequal number of studies included in

Table 2
Effects of transdiagnostic interventions on combined depression and anxiety (primary outcome).

	k	*g*	CI	*p*	I^2	CI	Prediction interval	NNT
Combined	108	0.59	[0.5; 0.68]	<0.001	78.88	[74.8; 82.3]	[−0.18; 1.37]	4.96
Three-Level Model (CHE)	249	0.57	[0.47; 0.67]	<0.001	86.6	–	[−0.47; 1.6]	5.19
One ES/study (lowest)	94	0.41	[0.28; 0.55]	<0.001	84.29	[81.3; 86.81]	[−0.74; 1.56]	7.5
One ES/study (highest)	94	0.72	[0.6; 0.85]	<0.001	80.37	[76.36; 83.69]	[−0.29; 1.73]	3.96
Outliers removed	83	0.60	[0.55; 0.66]	<0.001	29.54	[7.18; 46.52]	[0.35; 0.85]	4.86
Influence Analysis	106	0.55	[0.48; 0.63]	<0.001	74.16	[68.8; 78.61]	[−0.07; 1.17]	5.37
Only Low RoB	25	0.48	[0.33; 0.62]	<0.001	74.53	[62.39; 82.76]	[−0.15; 1.1]	6.35
Publication bias correction								
- Trim-and-fill method	141	0.37	[0.26; 0.48]	<0.001	85.03	[82.78; 86.99]	[−0.82; 1.55]	8.48
- Limit meta-analysis	108	0.41	[0.27; 0.54]	<0.001	96.35	–	[−0.38; 1.19]	7.57
- Selection model	108	0.56	[0.46; 0.66]	<0.001	84.96	[78.07; 90.36]	[−0.29; 1.41]	5.27

Note. CI = confidence interval; Combined = It aggregates all effect size data available within a study before pooling across studies and calculating the overall effect: this ensures that all effect sizes are independent (i.e., unit-of-analysis error & double-counting are avoided); *g* = Hedge's g (effect sizes); I^2 = statistic of heterogeneity; Influence Analysis = A meta-analysis without influential cases; *k* = number of comparisons; Limit meta-analysis = It assumes that small studies with high standard errors are more likely to be affected by publication bias, and it calculates the expected ("shrunken") pooled effect as the standard error ϵ_k goes to zero, while accounting for between-study heterogeneity; NNT = number needed to treat; One ES/study (lowest) = It runs a meta-analysis with only the lowest effect size within each study included; One ES/study (highest) = It runs a meta-analysis with only the highest effect size within each study; Only Low RoB = It runs a meta-analysis with only low-RoB studies; Outliers removed = A meta-analysis without statistical outliers, that is, without those effect sizes whose CI does not overlap with the CI of the overall effect; Selection model = This model allows to account for the possibility that results are more or less likely to get published depending on their p value, and it assumes that results with $p < 0.1$ are more likely to get published; Three-Level Model (CHE) = It runs a multilevel "correlated and hierarchical effects" (CHE) model: effect sizes are nested in studies, and effects within studies are assumed to be correlated (by default, it is assumed $\rho = 0.6$); Trim-and-fill method = It assumes that publication bias results in funnel plot asymmetry, and provides an algorithm that imputes studies so that this asymmetry is removed, after which the results are re-estimated.

Table 3
Subgroup analyses.

		k	*g*	CI	I^2	CI	NNT	*p*
Intervention	CBT	68	0.62	[0.49; 0.75]	79.8	[74.8; 83.8]	4.71	0.115
	Mindfulness	16	0.69	[0.46; 0.93]	82.0	[71.9; 88.5]	4.17	
	Other major established approaches	18	0.42	[0.26; 0.59]	66.3	[44.7; 79.5]	7.32	
	Other types of non-major psychotherapy	6	0.45	[0.09; 0.81]	71.9	[35; 87.9]	6.77	
Described as 'transdiagnostic'	No	77	0.56	[0.44; 0.67]	79.0	[74.2; 83]	5.29	0.171
	Yes	31	0.68	[0.54; 0.82]	76.6	[67.1; 83.4]	4.24	
Type of control	cau	43	0.51	[0.39; 0.64]	78.8	[71.9; 84]	5.88	**0.012**
	wl	55	0.71	[0.56; 0.86]	78.2	[72; 83]	4.04	
	oc	10	0.34	[0.09; 0.58]	70.9	[44.4; 84.8]	9.26	
Inclusion	cut	54	0.57	[0.42; 0.73]	84.2	[80.1; 87.4]	5.18	0.554
	diag	53	0.63	[0.53; 0.73]	64.5	[52.5; 73.5]	4.63	
Recruitment strategy	com	48	0.62	[0.48; 0.75]	80.8	[75.2; 85.2]	4.71	0.807
	clin	34	0.55	[0.41; 0.7]	73.9	[63.5; 81.4]	5.40	
	oth	26	0.60	[0.35; 0.86]	81.4	[73.6; 86.9]	4.89	
Target group	adul	65	0.61	[0.52; 0.69]	66.7	[56.9; 74.3]	4.80	0.090
	med	25	0.46	[0.33; 0.6]	71.2	[56.9; 80.7]	6.61	
	stud	6	1.05	[−0.7; 2.81]	95.8	[93.1; 97.5]	2.61	
	old	7	0.90	[0.4; 1.39]	90.7	[83.3; 94.8]	3.09	
Disorders included	anx/dep	82	0.52	[0.43; 0.61]	76.2	[70.6; 80.7]	5.75	**0.018**
	anx	26	0.85	[0.58; 1.12]	79.1	[69.9; 85.4]	3.30	
Format	Ind	71	0.56	[0.45; 0.68]	79.1	[74; 83.2]	5.29	0.342
	Gr	35	0.66	[0.5; 0.82]	76.9	[68.1; 83.2]	4.39	
Delivery	FtF	57	0.68	[0.53; 0.83]	79.6	[74; 84]	4.24	0.174
	Guided formats	37	0.51	[0.39; 0.63]	76.7	[68.2; 83]	5.88	
	Other formats	13	0.49	[0.23; 0.75]	76.3	[59.5; 86.1]	6.15	
Year of publication	≤2008	9	0.33	[0.1; 0.57]	50.2	[0; 76.8]	9.57	**0.013**
	>2008	99	0.61	[0.52; 0.71]	79.8	[75.8; 83.2]	4.80	
Number of sessions	<8	38	0.61	[0.4; 0.82]	84.7	[79.9; 88.4]	4.80	0.581
	8–12	54	0.62	[0.51; 0.74]	75.0	[67.5; 80.8]	4.71	
	>12	10	0.50	[0.25; 0.74]	59.6	[19; 79.9]	6.01	

Note. adul = adults; anx = anxiety; anx/dep = anxiety and/or depression; cau = care-as-usual; CI = confidence interval; clin = clinical; com = community; cut = cut-off score; diag = diagnostic; FtF = face-to-face; *g* = Hedge's g (effect sizes); Gr = group; I^2 = statistic of heterogeneity; Ind = individual; *k* = number of comparisons; med = general medical disorders; NNT = number needed to treat; oc = other control; old = older adults; oth = other; stud = student population; wl = waiting-list.
Bolded numbers indicate statistically significant p-values, that is, results from analyses where the differences between subgroups are significant ($p < 0.05$).

each subgroup or other factors. In all cases, it is important to consider subgroup analyses with caution due to their observational nature. Additionally, they often have very low power, and the findings may be influenced by other variables (Cuijpers et al., 2023). It should also be noted that certain subgroups comprise few studies and substantial heterogeneity, particularly the 'other types of non-major psychotherapy' subgroup, which may pose a limitation.

When we analyzed the effect of TPIs on depression symptoms separately, we also found moderate effects both when considering all the studies reporting these outcomes and when considering only the trials that initially studied these disorders (effect sizes ranged from $g = 0.54$ to 0.57). Concerning the impact on anxiety separately, we found moderate to large effects on anxious symptoms, depending on whether we considered all the studies reporting these outcome measures ($g = 0.61$)

or only the trials that initially included individuals based on anxiety (g = 0.87) (i.e., excluding trials that also recruited participants with depression). These findings suggest once again a difference in the impact of interventions depending on the disorders used as eligibility criteria in the studies. One hypothesis in this regard could be that patients with anxiety improve more in the short term than those with depression (Harrer et al., 2024). Another hypothesis could be related to the design of TPIs when targeting different anxiety disorders, as opposed to when targeting both depressive and anxiety disorders. This might be due to greater sample homogeneity in terms of diagnosis and the greater specificity of the components targeting anxiety. Nevertheless, the apparent difference between anxiety-only and anxiety-plus-depression studies might be more methodological than clinical due to eligibility criteria and the fact that many studies do not conduct comprehensive assessments of comorbidities. These findings suggest that more research is required in this regard. Furthermore, other meta-analyses found more similar effect sizes for depression and anxiety (e.g., Kolaas et al., 2024; Păsărelu et al., 2017; Schaeuffele et al., 2024) or pointed to better outcomes in depression (Newby et al., 2016).

A higher dropout risk was found for participants in the intervention conditions compared to the control groups. This could be related to patients' expectation of receiving treatment in the waitlist conditions, which are the most common control groups in this study. It might also be related to patients' reluctance to face difficult emotions or situations within strategies such as mindfulness or exposure, as avoidance is a hallmark of individuals with anxiety and depression disorders (Spinhoven et al., 2014). It seems less likely that this is due to TPIs not being acceptable to participants, as previous literature points to good acceptability of these interventions in different formats (e.g., González-Robles et al., 2020; Jiménez-Orenga et al., 2025; Norton, 2012).

This meta-analysis is not free of limitations, and the findings must be interpreted taking them into account. First, the quality of many of the included trials was not adequate. In addition, only post-treatment outcomes were considered in this study, and it is crucial to investigate the impact of TPIs in follow-up assessments, particularly in medium- and long-term follow-up assessments. Future research should also investigate the effects of these interventions in children and adolescents. Furthermore, high heterogeneity in many of the analyses makes it difficult to determine the true effectiveness of the interventions. An additional limitation, not specific to this study but shared by the whole field, is the heterogeneity in the measurement instruments used to assess anxiety and depression (Fried et al., 2022; Wall and Lee, 2022). It would be important for future research to closely examine whether the outcome measures commonly used in transdiagnostic studies truly capture transdiagnostic constructs or remain disorder-specific. Advancing this line of investigation, along with efforts to identify core transdiagnostic mechanisms, could contribute to the development of more suitable and genuinely transdiagnostic assessment tools, which is a key step for the progress of this field. In this regard, self-report measures and clinician-administered ones could also differ. However, it has been shown in the literature that this difference in the estimated effect is mainly driven by unmasked clinical ratings (Miguel et al., 2025), and this issue has been addressed in the RoB assessment.

Despite these limitations, this meta-analysis supports the conclusion that TPIs for depression and/or anxiety in any format (provided they involve human support) are likely effective for adults with elevated depression and/or anxiety symptoms in a variety of treatment settings. Additionally, this study contributes to the development of a 'Meta-Analytic Research Domain' for transdiagnostic treatments, which serves as a living systematic review aimed at covering the entire field rather than focusing on a specific PICO (Cuijpers et al., 2022). In the context of transdiagnostic interventions, this 'Meta-Analytic Research Domain' will provide a comprehensive overview of the current state of the field, enabling researchers to gain a deeper understanding of this expanding area and pushing its boundaries forward.

CRediT authorship contribution statement

Noelia Jiménez-Orenga: Methodology, Formal analysis, Writing – review & editing, Writing – original draft. **Clara Miguel:** Methodology, Formal analysis, Writing – review & editing. **Alberto González-Robles:** Methodology, Writing – review & editing. **Javier Fernández-Álvarez:** Methodology, Writing – review & editing. **Jorge Grimaldos:** Methodology, Writing – review & editing. **Juana Bretón-López:** Supervision, Conceptualization, Writing – review & editing. **Cristina Botella:** Supervision, Conceptualization, Writing – review & editing. **Pim Cuijpers:** Supervision, Writing – review & editing. **Azucena García-Palacios:** Supervision, Writing – review & editing. **Davide Papola:** Methodology, Writing – review & editing. **Soledad Quero:** Supervision, Writing – review & editing. **Heleen Riper:** Supervision, Writing – review & editing. **Amanda Díaz-García:** Supervision, Methodology, Conceptualization, Writing – review & editing.

Funding

This study is funded by the Research Promotion Plan of the Universitat Jaume I (Ref. UJI-B2022-54; Code: 22I600) and a PhD grant of the Conselleria d'Educació, Universitats i Ocupació of the Generalitat Valenciana and the European Social Fund (ACIF/2021/220). DP was funded by the European Union's Horizon-MSCA-2021-PF01 research program under grant agreement N 101061648. The funders have no role in design, data collection and analysis or preparation of the manuscript.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jad.2025.119537.

References

Ali, B.S., Rahbar, M.H., Naeem, S., Gul, A., Mubeen, S., Iqbal, A., 2003. The effectiveness of counseling on anxiety and depression by minimally trained counselors: a randomized controlled trial. Am. J. Psychother. 57, 324–336.

American Psychiatric Association, 2022. Diagnostic and Statistical Manual of Mental Disorders, 5th ed., text rev. https://doi.org/10.1176/appi.books.9780890425787

Balduzzi, S., Rücker, G., Schwarzer, G., 2019. How to perform a meta-analysis with R: a practical tutorial. Evid. Based Ment. Health 22, 153–160.

Barkham, M., Lambert, M.J., 2021. The efficacy and effectiveness of psychological therapies. In: Barkham, M., Lutz, W., Castonguay, L.G. (Eds.), Bergin and Garfield's Handbook of Psychotherapy and Behavior Change: 50th Anniversary Edition, 7th ed. John Wiley & Sons, Inc., pp. 135–189

Barlow, D.H., Cohen, A.S., Waddell, M.T., Vermilyea, B.B., Klosko, J.S., Blanchard, E.B., Di Nardo, P.A., 1984. Panic and generalized anxiety disorders: nature and treatment. Behav. Ther. 15, 431–449. https://doi.org/10.1016/S0005-7894(84)80048-9.

Barlow, D.H., Allen, L.B., Choate, M.L., 2004. Toward a unified treatment for emotional disorders. Behav. Ther. 35, 205–230. https://doi.org/10.1016/S0005-7894(04)80036-4.

Barlow, D.H., Ellard, K.K., Fairholme, C.P., Farchione, T.J., Boisseau, C.L., Allan, L.B., Ehrenreich-May, J.T., 2010. Unified Protocol for Transdiagnostic Treatment of Emotional Disorders: Workbook, 1st ed. Oxford University Press, Oxford, UK. https://doi.org/10.1093/med:psych/9780199772667.001.0001.

Bathgate, C.J., Kilbourn, K.M., Murphy, N.H., Wamboldt, F.S., Holm, K.E., 2022. Pilot RCT of a telehealth intervention to reduce symptoms of depression and anxiety in adults with cystic fibrosis. J. Cyst. Fibros. 21, 332–338. https://doi.org/10.1016/j.jcf.2021.07.012.

Belay, W., Kaba, M., Labisso, W.L., Tigeneh, W., Sahile, Z., Zergaw, A., Haileselassie, W., 2022. The effect of interpersonal psychotherapy on quality of life among breast cancer patients with common mental health disorder: a randomized control trial at Tikur Anbessa specialized hospital. Support. Care Cancer 30, 965–972. https://doi.org/10.1007/s00520-021-06508-y.

Bell, C.J., Colhoun, H.C., Carter, F.A., Frampton, C.M., 2012. Effectiveness of computerised cognitive behaviour therapy for anxiety disorders in secondary care. Aust. N. Z. J. Psychiatry 46, 630–640. https://doi.org/10.1177/0004867412437346.

Benjet, C., Albor, Y., Alvis-Barranco, L., Contreras-Ibáñez, C.C., Cuartas, G., Cudris-Torres, L., Kessler, R.C., 2023. Internet-delivered cognitive behavior therapy versus treatment as usual for anxiety and depression among Latin American university students: a randomized clinical trial. J. Consult. Clin. Psychol. 91, 694–707. https://doi.org/10.1037/ccp0000846.

Berger, T., Boettcher, J., Caspar, F., 2014. Internet-based guided self-help for several anxiety disorders: a randomized controlled trial comparing a tailored with a standardized disorder-specific approach. Psychotherapy 51, 207–219. https://doi.org/10.1037/a0032527.

Bolinski, F., Kleiboer, A., Neijenhuijs, K., Karyotaki, E., Wiers, R., de Koning, L., Riper, H., 2022. Challenges in recruiting university students for web-based indicated prevention of depression and anxiety: results from a randomized controlled trial (ICare prevent). J. Med. Internet Res. 24, e40892. https://doi.org/10.2196/40892.

Borenstein, M., Hedges, L.V., Higgins, J.P.T., Rothstein, H.R., 2009. Introduction to Meta-Analysis. Wiley, Chichester.

Borenstein, M., Higgins, J.P.T., Hedges, L.V., Rothstein, H.R., 2017. Basics of meta-analysis: I2 is not an absolute measure of heterogeneity. Res. Synth. Methods 8, 5–18.

Brenes, G.A., Miller, M.E., Williamson, J.D., McCall, W.V., Knudson, M., Stanley, M.A., 2012. A randomized controlled trial of telephone-delivered cognitive-behavioral therapy for late-life anxiety disorders. Am. J. Geriatr. Psychiatry 20, 707–716. https://doi.org/10.1097/JGP.0b013e31822ccd3e.

Bressi, C., Porcellana, M., Marinaccio, P.M., Nocito, E.P., Magri, L., 2010. Short-term psychodynamic psychotherapy versus treatment as usual for depressive and anxiety disorders: a randomized clinical trial of efficacy. J. Nerv. Ment. Dis. 198, 647–652. https://doi.org/10.1097/NMD.0b013e3181ef3ebb.

Bullis, J.R., Boettcher, H., Sauer-Zavala, S., Farchione, T.J., Barlow, D.H., 2019. What is an emotional disorder? A transdiagnostic mechanistic definition with implications for assessment, treatment, and prevention. Clin. Psychol. Sci. Pract. 26 (2), e12278. https://doi.org/10.1111/cpsp.12278.

Calleo, J.S., Amspoker, A.B., Sarwar, A.I., Kunik, M.E., Jankovic, J., Marsh, L., et al., 2015. A pilot study of a cognitive-behavioral treatment for anxiety and depression in patients with Parkinson disease. J. Geriatr. Psychiatry Neurol. 28, 210–217.

Carlbring, P., Maurin, L., Törngren, C., Linna, E., Eriksson, T., Sparthan, E., Andersson, G., 2011. Individually-tailored, internet-based treatment for anxiety disorders: a randomized controlled trial. Behav. Res. Ther. 49, 18–24. https://doi.org/10.1016/j.brat.2010.10.002.

Carlucci, L., Saggino, A., Balsamo, M., 2021. On the efficacy of the unified protocol for transdiagnostic treatment of emotional disorders: a systematic review and meta-analysis. Clin. Psychol. Rev. 87, 101999.

Carter, E.C., Schönbrodt, F.D., Gervais, W.M., Hilgard, J., 2019. Correcting for bias in psychology: a comparison of meta-analytic methods. Adv. Methods Pract. Psychol. Sci. 2, 115–144.

Chen, X., Zeng, M., Chen, C., Zhu, D., Chen, L., Jiang, Z., 2023. Efficacy of psycho-cardiology therapy in patients with acute myocardial infarction complicated with mild anxiety and depression. Front. Cardiovasc. Med. 9. https://doi.org/10.3389/fcvm.2022.1031255.

Compen, F., Bisseling, E., Schellekens, M., Donders, R., Carlson, L., van der Lee, M., et al., 2018. Face-to-face and internet-based mindfulness-based cognitive therapy compared with treatment as usual in reducing psychological distress in patients with cancer: a multicenter randomized controlled trial. J. Clin. Oncol. 36, 2413–2421.

Cuijpers, P., Noma, H., Karyotaki, E., Cipriani, A., Furukawa, T.A., 2019. Effectiveness and acceptability of cognitive behavior therapy delivery formats in adults with depression: a network meta-analysis. JAMA Psychiatry 76 (7), 700–707.

Cuijpers, P., Quero, S., Noma, H., Ciharova, M., Miguel, C., Karyotaki, E., Furukawa, T. A., 2021. Psychotherapies for depression: a network meta-analysis covering efficacy, acceptability and long-term outcomes of all main treatment types. World Psychiatry 20, 283–293.

Cuijpers, P., Miguel, C., Papola, D., Harrer, M., Karyotaki, E., 2022. From living systematic reviews to meta-analytical research domains. Evid. Based Ment. Health 25, 145–147.

Cuijpers, P., Miguel, C., Ciharova, M., Ebert, D., Harrer, M., Karyotaki, E., 2023. Transdiagnostic treatment of depression and anxiety: a meta-analysis. Psychol. Med. 53, 6535–6546. https://doi.org/10.1017/S0033291722003841.

Cuijpers, P., Miguel, C., Harrer, M., Ciharova, M., Karyotaki, E., 2024. The overestimation of the effect sizes of psychotherapies for depression in waitlist controlled trials: a meta-analytic comparison with usual care controlled trials. Epidemiol. Psychiatr. Sci. 33 (e56), 1–10.

Dalgleish, T., Black, M., Johnston, D., Bevan, A., 2020. Transdiagnostic approaches to mental health problems: current status and future directions. J. Consult. Clin. Psychol. 88, 179–195.

Dao, T.K., Youssef, N.A., Armsworth, M., Wear, E., Papathopoulos, K.N., Gopaldas, R., 2011. Randomized controlled trial of brief cognitive behavioral intervention for depression and anxiety symptoms preoperatively in patients undergoing coronary artery bypass graft surgery. J. Thorac. Cardiovasc. Surg. 142, e109–e115.

den Boer, P.C., Wiersma, D., Ten Vaarwerk, I., Span, M.M., Stant, A.D., Van den Bosch, R. J., 2007. Cognitive self-therapy for chronic depression and anxiety: a multi-centre randomized controlled study. Psychol. Med. 37, 329–339.

Díaz-García, A., González- Robles, A., García- Palacios, A., Fernández- Álvarez, J., Castilla, D., Bretón, J.M., et al., 2021. Negative and positive affect regulation in a transdiagnostic internet-based protocol for emotional disorders: randomized controlled trial. J. Med. Internet Res. 23, e21335. https://doi.org/10.2196/21335.

Doyle, C., Bhar, S., Fearn, M., Ames, D., Osborne, D., You, E., et al., 2017. The impact of telephone-delivered cognitive behaviour therapy and befriending on mood disorders in people with chronic obstructive pulmonary disease: a randomized controlled trial. Br. J. Health Psychol. 22 (3), 542–556.

Duval, S., Tweedie, R., 2000a. A nonparametric "trim and fill" method of accounting for publication bias in meta-analysis. J. Am. Stat. Assoc. 95, 89–98.

Duval, S., Tweedie, R., 2000b. Trim and fill: a simple funnel-plot-based method of testing and adjusting for publication bias in meta-analysis. Biometrics 56, 455–463. https://doi.org/10.1111/j.0006-341X.2000.00455.x.

Erickson, D.H., Janeck, A.S., Tallman, K., 2007. A cognitive-behavioral group for patients with various anxiety disorders. Psychiatr. Serv. 58, 1205–1211. https://doi.org/10.1176/ps.2007.58.9.1205.

Ezegbe, B.N., Eseadi, C., Ede, M.O., Igbo, J.N., Anyanwu, J.I., Ede, K.R., et al., 2019. Impacts of cognitive-behavioral intervention on anxiety and depression among social science education students: a randomized controlled trial. Medicine (Baltimore) 98, e14935. https://doi.org/10.1097/MD.0000000000014935.

Fenger, M., Lindschou, J., Gluud, C., Winkel, P., Jørgensen, L., Dybkjaer, J.H., Lau, M., 2020. Internet-based therapy with FearFighter for anxiety disorders: a randomised clinical trial. Nord. J. Psychiatry 74, 518–524. https://doi.org/10.1080/08039488.2020.1755363.

Fernández-Rodríguez, C., González-Fernández, S., Coto-Lesmes, R., Pedrosa, I., 2021. Behavioral activation and acceptance and commitment therapy in the treatment of anxiety and depression in cancer survivors: a randomized clinical trial. Behav. Modif. 45, 822–859. https://doi.org/10.1177/0145445520916441.

Fernández-Rodríguez, C., Coto-Lesmes, R., Martínez-Loredo, V., González-Fernández, S., Cuesta, M., 2023. Is activation the active ingredient of transdiagnostic therapies? A randomized clinical trial of behavioral activation, acceptance and commitment therapy, and transdiagnostic cognitive-behavioral therapy for emotional disorders. Behav. Modif. 47, 3–45. https://doi.org/10.1177/01454455221083309.

Fried, E.I., Flake, J.K., Robinaugh, D.J., 2022. Revisiting the theoretical and methodological foundations of depression measurement. Nat Rev Psychol 1, 358–368. https://doi.org/10.1038/s44159-022-00050-2.

Furukawa, T.A., 1999. From effect size into number needed to treat. Lancet 353, 1680.

González-Robles, A., Díaz-García, A., García-Palacios, A., Roca, P., Ramos-Quiroga, J.A., Botella, C., 2020. Effectiveness of a transdiagnostic guided internet-delivered protocol for emotional disorders versus treatment as usual in specialized care: randomized controlled trial. J. Med. Internet Res. 22, e18220. https://doi.org/10.2196/18220.

Gould, C.E., Kok, B.C., Ma, V.K., Wetherell, J.L., Sudheimer, K., Beaudreau, S.A., 2019. Video-delivered relaxation intervention reduces late-life anxiety: a pilot randomized controlled trial. Am. J. Geriatr. Psychiatry. https://doi.org/10.1016/j.jagp.2018.12.018.

Graham, A.K., Greene, C.J., Kwasny, M.J., Kaiser, S.M., Lieponis, P., Powell, T., Mohr, D. C., 2020. Coached mobile app platform for the treatment of depression and anxiety among primary care patients: a randomized clinical trial. JAMA Psychiatr. 77, 906–914. https://doi.org/10.1001/jamapsychiatry.2020.1011.

Greer, J.A., Traeger, L., Bemis, H., Solis, J., Hendriksen, E.S., Park, E.R., Safren, S.A., 2012. A pilot randomized controlled trial of brief cognitive-behavioral therapy for anxiety in patients with terminal cancer. Oncologist 17, 1337–1345. https://doi.org/10.1634/theoncologist.2012-0041*.

Hamilton, J., Saxon, D., Best, E., Glover, V., Walters, S.J., Kerr, I.B., 2020. A randomised, controlled pilot study of cognitive analytic therapy (CAT) for stressed pregnant women with underlying anxiety and depression in a routine health service setting. Clin. Psychol. Psychother. 27, 541–553.

Harrer, M., Cuijpers, P., Furukawa, T.A., Ebert, D.D., 2021. Doing Meta-Analysis With R: A Hands-On Guide. Chapman & Hall/CRC Press, Boca Raton, FL (ISBN 978–0–367-61007-4).

Harrer, M., et al., 2024. Supersizing meta-analysis of psychological interventions: findings of a "meta-analytic research domain" across world regions and twelve mental health problems. Psychol. Bull. (submitted).

Harvey, A.G., Watkins, E., Mansell, W., Shafran, R. (Eds.), 2004. Cognitive Behavioural Processes Across Psychological Disorders: A Transdiagnostic Approach to Research and Treatment. Oxford University Press, Oxford, UK. https://doi.org/10.1093/med:psych/9780198528883.001.0001.

Hayes, S.C., Wilson, K.G., Gifford, E.V., Follette, V.M., Strosahl, K., 1996. Experiential avoidance and behavioral disorders: a functional dimensional approach to diagnosis and treatment. J. Consult. Clin. Psychol. 64, 1152–1168. https://doi.org/10.1037/0022-006X.64.6.1152.

Heller, H.M., Hoogendoorn, A.W., Honig, A., Broekman, B.F.P., van Straten, A., 2020. The effectiveness of a guided internet-based tool for the treatment of depression and anxiety in pregnancy (MamaKits online): randomized controlled trial. J. Med. Internet Res. 22, e15172. https://doi.org/10.2196/15172.

Higgins, J.P.T., Thompson, S.G., Deeks, J.J., Altman, D.G., 2003. Measuring inconsistency in meta-analyses. Br. Med. J. 327, 557–560.

Holdgaard, A., Eckhardt-Hansen, C., Lassen, C.F., Kjesbu, I.E., Dall, C.H., Michaelsen, K. L., Rasmusen, H.K., 2023. Cognitive-behavioural therapy reduces psychological distress in younger patients with cardiac disease: a randomized trial. Eur. Heart J. 44, 986–996. https://doi.org/10.1093/eurheartj/ehac792.

Huang, S., Wang, Z., Zheng, D., Liu, L., 2023. Anxiety disorder in menopausal women and the intervention efficacy of mindfulness-based stress reduction. Am. J. Transl. Res. 15, 2016–2024.

Hulsbosch, L.P., Potharst, E.S., Schwabe, I., Boekhorst, M.G.B.M., Pop, V.J.M., Nyklíček, I., 2023. Online mindfulness-based intervention for women with pregnancy distress: a randomized controlled trial. J. Affect. Disord. 332, 262–272. https://doi.org/10.1016/j.jad.2023.04.009.

Hynninen, M.J., Bjerke, N., Pallesen, S., Bakke, P.S., Nordhus, I.H., 2010. A randomized controlled trial of cognitive behavioral therapy for anxiety and depression in COPD. Respir. Med. 104, 986–994.

Ingram, R.E., 1990. Self-focused attention in clinical disorders: review and a conceptual model. Psychol. Bull. 107, 156–176. https://doi.org/10.1037/0033-2909.107.2.156.

Ioannidis, J.P., 1998. Effect of the statistical significance of results on the time to completion and publication of randomized efficacy trials. JAMA 279 (4), 281–286. https://doi.org/10.1001/jama.279.4.281.

Irgens, A., Dammen, T., Nysæter, T.E., Hoffart, A., 2012. Thought field therapy (TFT) as a treatment for anxiety symptoms: a randomized controlled trial. Explore 8, 331–338. https://doi.org/10.1016/j.explore.2012.08.003.

Ito, M., Horikoshi, M., Kato, N., Oe, Y., Fujisato, H., Yamaguchi, K., Takebayashi, Y., 2023. Efficacy of the unified protocol for transdiagnostic cognitive-behavioral treatment for depressive and anxiety disorders: a randomized controlled trial. Psychol. Med. 53, 3009–3020.

Jiménez-Orenga, N., Miguel, C., González-Robles, A., Fernández-Álvarez, J., Grimaldos, J., Botella, C., Bretón, J.M., Cuijpers, P., García-Palacios, A., Papola, D., Quero, S., Riper, H., Díaz-García, A., 2024. Transdiagnostic psychological interventions for anxiety and/or depressive disorders: a meta-analysis. Retrieved from. https://osf.io/ynj5d.

Jiménez-Orenga, N., Díaz-García, A., Lorente-Català, R., González-Robles, A., Paredes-Mealla, M., García-Palacios, A., Bretón-López, J., 2025. Feasibility, acceptability, and preliminary efficacy of a blended transdiagnostic group CBT for the treatment of emotional disorders. Internet Interv. 40, 100823. https://doi.org/10.1016/j.invent.2025.100823.

Johansson, R., Björklund, M., Hornborg, C., Karlsson, S., Hesser, H., Ljótsson, B.L., Andersson, G., 2013. Affect-focused psychodynamic psychotherapy for depression and anxiety through the internet: a randomized controlled trial. PeerJ 1, e102. https://doi.org/10.7717/peerj.102.

Johnston, L., Titov, N., Andrews, G., Spence, J., Dear, B.F., 2011. A RCT of a transdiagnostic internet-delivered treatment for three anxiety disorders: examination of support roles and disorder-specific outcomes. PLoS One 6, e28079. https://doi.org/10.1371/journal.pone.0028079.

Kannampallil, T., Ajilore, O.A., Lv, N., Smyth, J.M., Wittels, N.E., Ronneberg, C.R., Ma, J., 2023. Effects of a virtual voice-based coach delivering problem-solving treatment on emotional distress and brain function: a pilot RCT in depression and anxiety. Transl. Psychiatry 13 (1). https://doi.org/10.1038/s41398-023-02462-x.

Karyotaki, E., Klein, A.M., Ciharova, M., Bolinski, F., Krijnen, L., de Koning, L., Cuijpers, P., 2022. Guided internet-based transdiagnostic individually tailored cognitive behavioral therapy for symptoms of depression and/or anxiety in college students: a randomized controlled trial. Behav. Res. Ther. 150, 104028. https://doi.org/10.1016/j.brat.2021.104028.

Kemmeren, L.L., van Schaik, A., Draisma, S., Kleiboer, A., Riper, H., Smit, J.H., 2023. Effectiveness of blended cognitive behavioral therapy versus treatment as usual for depression in routine specialized mental healthcare: E-COMPARED trial in the Netherlands. Cogn. Ther. Res. 47. https://doi.org/10.1007/s10608-023-10363-y.

Kessler, R.C., Ormel, J., Petukhova, M., McLaughlin, K.A., Green, J.G., Russo, L.J., Uestuen, T.B., 2011. Development of lifetime comorbidity in the World Health Organization world mental health surveys. Arch. Gen. Psychiatry 68, 90–100.

Kessler, R.C., Sampson, N.A., Berglund, P., Gruber, M.J., Al-Hamzawi, A., Andrade, L., Wilcox, M.A., 2015. Anxious and non-anxious major depressive disorder in the World Health Organization world mental health surveys. Epidemiol. Psychiatr. Sci. 24, 210–226.

Kim, Y.W., Lee, S.H., Choi, T.K., Suh, S.Y., Kim, B., Kim, C.M., Yook, K.H., 2009. Effectiveness of mindfulness-based cognitive therapy as an adjuvant to pharmacotherapy in patients with panic disorder or generalized anxiety disorder. Depress. Anxiety 26, 601–606. https://doi.org/10.1002/da.20552.

Kitchiner, N.J., Edwards, D., Wood, S., Sainsbury, S., Hewin, P., Burnard, P., Bisson, J.I., 2009. A randomized controlled trial comparing an adult education class using cognitive behavioural therapy "stress control", anxiety management group treatment and a waiting list for anxiety disorders. J. Ment. Health 18, 307–315. https://doi.org/10.1080/09638230802052153.

Kladnitski, N., Smith, J., Uppal, S., James, M.A., Allen, A.R., Andrews, G., et al., 2020. Transdiagnostic internet-delivered CBT and mindfulness-based treatment for depression and anxiety: a randomised controlled trial. Internet Interv. 20. https://doi.org/10.1016/j.invent.2020.100313.

Kleiboer, A., Donker, T., Seekles, W., van Straten, A., Riper, H., Cuijpers, P., 2015. A randomized controlled trial on the role of support in internet-based problem solving therapy for depression and anxiety. Behav. Res. Ther. 72, 63–71. https://doi.org/10.1016/j.brat.2015.06.013.

Knapstad, M., Lervik, L.V., Sæther, S.M.M., Aarø, L.E., Smith, O.R.F., 2020. Effectiveness of prompt mental health care, the Norwegian version of improving access to psychological therapies: a randomized controlled trial. Psychother. Psychosom. 89, 90–105. https://doi.org/10.1159/000504453.

Kolaas, K., Berman, A.H., Hedman-Lagerlöf, E., Lindsäter, E., Hybelius, J., Axelsson, E., 2024. Internet-delivered transdiagnostic psychological treatments for individuals with depression, anxiety or both: a systematic review with meta-analysis of randomised controlled trials. BMJ Open 14, e075796. https://doi.org/10.1136/bmjopen-2023-075796.

Kunik, M.E., Veazey, C., Cully, J.A., Souchek, J., Graham, D.P., Hopko, D., et al., 2008. COPD education and cognitive behavioral therapy group treatment for clinically significant symptoms of depression and anxiety in COPD patients: a randomized controlled trial. Psychol. Med. 38, 385–396.

Lam, C.L., Fong, D.Y., Chin, W.Y., Lee, P.W., Lam, E.T., Lo, Y.Y., 2010. Brief problem-solving treatment in primary care (PST-PC) was not more effective than placebo for elderly patients screened positive for psychological problems. Int. J. Geriatr. Psychiatry 25, 968–980.

Lerma, A., Pérez-Grovas, H., Bermúdez, L., Peralta-Pedrero, M.L., Robles-García, R., Lerma, C., 2017. Brief cognitive behavioural intervention for depression and anxiety symptoms improves quality of life in chronic haemodialysis patients. Psychol. Psychother. Theory Res. Pract. 90, 105–123.

Maas, J., van Balkom, T., van Assen, M., Rutten, L., Janssen, D., van Mastrigt, M., Bekker, M., 2019. Enhancing autonomy-connectedness in patients with anxiety disorders: a pilot randomized controlled trial. Front. Psychiatry 10. https://doi.org/10.3389/fpsyt.2019.00665.

Mahmoodi, M., Bakhtiyari, M., Masjedi Arani, A., Mohammadi, A., Saberi Isfeedvajani, M., 2021. The comparison between CBT focused on perfectionism and CBT focused on emotion regulation for individuals with depression and anxiety disorders and dysfunctional perfectionism: a randomized controlled trial. Behav. Cogn. Psychother. 49, 454–471.

Maitland, D.W.M., Petts, R.A., Knott, L.E., Briggs, C.A., Moore, J.A., Gaynor, S.T., 2016. A randomized controlled trial of functional analytic psychotherapy versus watchful waiting: enhancing social connectedness and reducing anxiety and avoidance. Behav. Anal. Res. Pract. 16, 103–122. https://doi.org/10.1037/bar0000051.

Mansell, W., Tai, S., 2022. The History of the Transdiagnostic Approach. Transdiagnostic Mental Health Network. https://transdiagnostic.org/sample-blog-post-three/.

Mansell, W., Harvey, A., Watkins, E., Shafran, R., 2009. Conceptual foundations of the transdiagnostic approach to CBT. J. Cogn. Psychother. 23, 6–19. https://doi.org/10.1891/0889-8391.23.1.6.

Mathiasen, K., Riper, H., Ehlers, L.H., Valentin, J.B., Rosenberg, N.K., 2016. Internet-based CBT for social phobia and panic disorder in a specialised anxiety clinic in routine care: results of a pilot randomised controlled trial. Internet Interv. 4, 92–98. https://doi.org/10.1016/j.invent.2016.03.001.

Mathiasen, K., Andersen, T.E., Lichtenstein, M.B., Ehlers, L.H., Riper, H., Kleiboer, A., Roessler, K.K., 2022. The clinical effectiveness of blended CBT compared to face-to-face CBT for adult depression: randomized controlled NonInferiority trial. J. Med. Internet Res. 24, e36577.

McEvoy, P.M., Nathan, P., Norton, P.J., 2009. Efficacy of transdiagnostic treatments: a review of published outcome studies and future research directions. J. Cogn. Psychother. 23, 20–33. https://doi.org/10.1891/0889-8391.23.1.20.

McHugh, R.K., Murray, H.W., Barlow, D.H., 2009. Balancing fidelity and adaptation in the dissemination of empirically-supported treatments: the promise of transdiagnostic interventions. Behav. Res. Ther. 47, 946–953. https://doi.org/10.1016/j.brat.2009.07.005.

McShane, B.B., Böckenholt, U., Hansen, K.T., 2016. Adjusting for publication bias in meta-analysis: an evaluation of selection methods and some cautionary notes. Perspect. Psychol. Sci. 11, 730–749.

Mead, N., MacDonald, W., Bower, P., Lovell, K., Richards, D., Roberts, C., et al., 2005. The clinical effectiveness of guided self-help versus waiting-list control in the management of anxiety and depression: a randomized controlled trial. Psychol. Med. 35, 1633–1643.

Miguel, C., Harrer, M., Karyotaki, E., Plessen, C.Y., Ciharova, M., Furukawa, T.A., Cristea, I.A., Cuijpers, P., 2025. Self-reports vs clinician ratings of efficacies of psychotherapies for depression: a meta-analysis of randomized trials. Epidemiol. Psychiatr. Sci. 34 (e15), 1–8. https://doi.org/10.1017/S2045796025000095.

Muntingh, A., Laheij, M., Sinnema, H., Zoun, M., Van Balkom, A., Schene, A., Spijker, J., 2016. Quality of life and symptoms in patients with chronic depression and anxiety after a self-management training: a randomised controlled trial. Tijdschr. Psychiatr. 58, 504–512.

Nassim, M., Park, H., Dikaios, E., Potes, A., Elbaz, S., McVeigh, C., Rej, S., 2021. Brief mindfulness intervention vs. health enhancement program for patients undergoing dialysis: a randomized controlled trial. Healthcare (Basel) 9 (659), 659. https://doi.org/10.3390/healthcare9060659.

Newby, J.M., Mackenzie, A., Williams, A.D., McIntyre, K., Watts, S., Wong, N., 2013. Internet cognitive behavioural therapy for mixed anxiety and depression: a randomized controlled trial and evidence of effectiveness in primary care. Psychol. Med. 43, 2635–2648.

Newby, J.M., Twomey, C., Li, S., Andrews, G., 2016. Transdiagnostic computerised cognitive behavioural therapy for depression and anxiety: a systematic review and meta-analysis. J. Affect. Disord. 199, 30–41.

Ninomiya, A., Sado, M., Park, S., Fujisawa, D., Kosugi, T., Nakagawa, A., Mimura, M., 2020. Effectiveness of mindfulness-based cognitive therapy in patients with anxiety disorders in secondary-care settings: a randomized controlled trial. Psychiatry Clin. Neurosci. 74, 132–139. https://doi.org/10.1111/pcn.12960.

Nissen, E.R., O'Connor, M., Kaldo, V., Højris, I., Borre, M., Zachariae, R., et al., 2020. Internet-delivered mindfulness-based cognitive therapy for anxiety and depression in cancer survivors: a randomized controlled trial. Psycho-Oncology 29, 68–75.

Norlund, F., Wallin, E., Olsson, M.G.E., Wallert, J., Burell, G., Von Essen, L., et al., 2018. Internet-based cognitive behavior therapy for symptoms of depression and anxiety among patients with a recent myocardial infarction: the U-CARE heart randomized trial. Eur. J. Prev. Cardiol. 25, S63–S74.

Norton, P.J., 2012. Transdiagnostic group CBT for anxiety disorder: efficacy, acceptability, and beyond. Rev. Psicopatol. Psicol. Clin. 17 (3), 205–217.

Norton, P.J., Hayes, S.A., Hope, D.A., 2004. Effects of a transdiagnostic group treatment for anxiety on secondary depression. Depress. Anxiety 20, 198–202. https://doi.org/10.1002/da.20045.

Pachankis, J.E., McConocha, E.M., Clark, K.A., Wang, K., Behari, K., Fetzner, B.K., et al., 2020. A transdiagnostic minority stress intervention for gender diverse sexual minority women's depression, anxiety, and unhealthy alcohol use: a randomized controlled trial. J. Consult. Clin. Psychol. 88, 613–630. https://doi.org/10.1037/ccp0000521.

Papola, D., Patel, V., 2025. Towards person-centered care in global mental health: implications for meta-analyses and clinical trials. Epidemiol. Psychiatr. Sci. 34, e13.

Papola, D., Ostuzzi, G., Tedeschi, F., Gastaldon, C., Purgato, M., Del Giovane, C., Pompoli, A., Pauley, D., Karyotaki, E., Sijbrandij, M., Furukawa, T.A., Cuijpers, P., Barbui, C., 2022. Comparative efficacy and acceptability of psychotherapies for

panic disorder with or without agoraphobia: systematic review and network meta-analysis of randomised controlled trials. Br. J. Psychiatry 221 (3), 507–519.
Papola, D., Karyotaki, E., Purgato, M., Sijbrandij, M., Tedeschi, F., Cuijpers, P., Orestis, E., Furukawa, T.A., Patel, V., Barbui, C., 2023a. Dismantling and personalising task-sharing psychosocial interventions for common mental disorders: a study protocol for an individual participant data component network meta-analysis. BMJ Open 13 (11), e077037.
Papola, D., Ostuzzi, G., Tedeschi, F., Gastaldon, C., Purgato, M., Del Giovane, C., Pompoli, A., Pauley, D., Karyotaki, E., Sijbrandij, M., Furukawa, T.A., Cuijpers, P., Barbui, C., 2023b. CBT treatment delivery formats for panic disorder: a systematic review and network meta-analysis of randomised controlled trials. Psychol. Med. 53 (3), 614–624.
Papola, D., Miguel, C., Mazzaglia, M., Franco, P., Tedeschi, F., Romero, S.A., Patel, A.R., Ostuzzi, G., Gastaldon, C., Karyotaki, E., Harrer, M., Purgato, M., Sijbrandij, M., Patel, V., Furukawa, T.A., Cuijpers, P., Barbui, C., 2024. Psychotherapies for generalized anxiety disorder in adults: a systematic review and network meta-analysis of randomized clinical trials. JAMA Psychiatry 81 (3), 250–259. https://doi.org/10.1001/jamapsychiatry.2023.3971.
Păsărelu, C.R., Andersson, G., Nordgren, L.B., Dobrean, A., 2017. Internet-delivered transdiagnostic and tailored cognitive behavioral therapy for anxiety and depression: a systematic review and meta-analysis of randomized controlled trials. Cogn. Behav. Ther. 46, 1–28.
Pearl, S.B., Norton, P.J., 2017. Transdiagnostic versus diagnosis specific cognitive behavioural therapies for anxiety: a meta-analysis. J. Anxiety Disord. 46, 11–24.
Peris-Baquero, O., Osma, J., 2023. Unified protocol for the transdiagnostic treatment of emotional disorders in group format in Spain: results of a noninferiority randomized controlled trial at 15 months after treatment onset. Depress. Anxiety. https://doi.org/10.1002/da.23358.
Ponsford, J., Lee, N.K., Wong, D., McKay, A., Haines, K., Alway, Y., et al., 2016. Efficacy of motivational interviewing and cognitive behavioral therapy for anxiety and depression symptoms following traumatic brain injury. Psychol. Med. 46, 1079–1090. https://doi.org/10.1017/S0033291715002834.
Proudfoot, J., Ryden, C., Everitt, B., Shapiro, D.A., Goldberg, D., Mann, A., et al., 2004. Clinical efficacy of computerised cognitive-behavioural therapy for anxiety and depression in primary care: randomised controlled trial. Br. J. Psychiatry 185, 46–54. https://doi.org/10.1192/bjp.185.1.46*.
Pustejovsky, J.E., Tipton, E., 2022. Meta-analysis with robust variance estimation: expanding the range of working models. Prev. Sci. 23, 425–438.
Rasing, S.P.A., Stikkelbroek, Y.A.J., Den Hollander, W., Riper, H., Deković, M., Nauta, M. H., Creemers, D.H.M., Immink, M.C.P., Spuij, M., Bodden, D.H.M., 2021. Pragmatic quasi-experimental controlled trial evaluating the outcomes of blended CBT compared to face-to-face CBT and treatment as usual for adolescents with depressive disorders. Int. J. Environ. Res. Public Health 18, 1–18.
Reinholt, N., Krogh, J., 2014. Efficacy of transdiagnostic cognitive behaviour therapy for anxiety disorders: a systematic review and meta-analysis of published outcome studies. Cogn. Behav. Ther. 43, 171–184.
Ren, W., Qiu, H., Yang, Y., Zhu, X., Zhu, C., Mao, G., et al., 2019. Randomized controlled trial of cognitive behavioural therapy for depressive and anxiety symptoms in Chinese women with breast cancer. Psychiatry Res. 271, 52–59. https://doi.org/10.1016/j.psychres.2018.11.016.
Riccardi, C.J., Korte, K.J., Schmidt, N.B., 2017. False safety behavior elimination therapy: a randomized study of a brief individual transdiagnostic treatment for anxiety disorders. J. Anxiety Disord. 46, 35–45. https://doi.org/10.1016/j.janxdis.2016.06.003.
Richards, D., Enrique, A., Eilert, N., Franklin, M., Palacios, J., Duffy, D., Timulak, L., 2020. A pragmatic randomized waitlist-controlled effectiveness and cost-effectiveness trial of digital interventions for depression and anxiety. Npj Digit. Med. 3 (1). https://doi.org/10.1038/s41746-020-0293-8.
Roberge, P., Provencher, M.D., Gaboury, I., Gosselin, P., Vasiliadis, H.M., Benoît, A., Norton, P.J., 2022. Group transdiagnostic cognitive-behavior therapy for anxiety disorders: a pragmatic randomized clinical trial. Psychol. Med. (13), 1–11. https://doi.org/10.1017/S0033291720004316.
Robins, J., Greenland, S., Breslow, N.E., 1986. A general estimator for the variance of the Mantel-Haenszel odds ratio. Am. J. Epidemiol. 124, 719–723. https://doi.org/10.1093/oxfordjournals.aje.a114447.
Rogiers, R., Baeken, C., Van den Abbeele, D., Watkins, E.R., Remue, J., Colman, R., Lemmens, G.M.D., 2022. Group intervention 'drop it!' Decreases repetitive negative thinking in major depressive disorder and/or generalized anxiety disorder: a randomised controlled study. Cogn. Ther. Res. 46, 182–196. https://doi.org/10.1007/s10608-021-10240-6.
Romijn, G., Batelaan, N., Koning, J., Van Balkom, A., De Leeuw, A., Benning, F., Van Roijen, L.H., Riper, H., 2021. Acceptability, effectiveness and cost-effectiveness of blended cognitive-behavioural therapy (bCBT) versus face-to-face CBT (ftfCBT) for anxiety disorders in specialised mental health care: a 15-week randomised controlled trial with 1-year follow-up. PLoS One 16.
Rose, M., Devine, J., 2014. Assessment of patient-reported symptoms of anxiety. Dialogues Clin. Neurosci. 16, 197–211. https://doi.org/10.31887/DCNS.2014.16.2/mrose.
Rücker, G., Schwarzer, G., Carpenter, J.R., Binder, H., Schumacher, M., 2011. Treatment-effect estimates adjusted for small-study effects via a limit meta-analysis. Biostatistics 12 (1), 122–142. https://doi.org/10.1093/biostatistics/kxq046.
Ruiz, F.J., Peña-Vargas, A., Ramírez, E.S., Suárez-Falcón, J.C., García-Martín, M.B., García-Beltrán, D.M., Sánchez, P.D., 2020. Efficacy of a two-session repetitive negative thinking-focused acceptance and commitment therapy (ACT) protocol for depression and generalized anxiety disorder: a randomized waitlist control trial. Psychotherapy. https://doi.org/10.1037/pst0000273.
Sadeh-Sharvit, S., Camp, T.D., Horton, S.E., Hefner, J.D., Berry, J.M., Grossman, E., Hollon, S.D., 2023. Effects of an artificial intelligence platform for behavioral interventions on depression and anxiety symptoms: randomized clinical trial. J. Med. Internet Res. 25, e46781.
Sakiris, N., Berle, D., 2019. A systematic review and meta-analysis of the unified protocol as a transdiagnostic emotion regulation based intervention. Clin. Psychol. Rev. 72, 101751.
Saravanan, C., Kingston, R., 2014. A randomized control study of psychological intervention to reduce anxiety, amotivation and psychological distress among medical students. J. Res. Med. Sci. 19, 391–397.
Sauer-Zavala, S., Gutner, C.A., Farchione, T.J., Boettcher, H.T., Bullis, J.R., Barlow, D.H., 2017. Current definitions of "transdiagnostic" in treatment development: a search for consensus. Behav. Ther. https://doi.org/10.1016/j.beth.2016.09.004.
Schaeuffele, C., Homeyer, S., Perea, L., et al., 2022. The unified protocol as an internet-based intervention for emotional disorders: randomized controlled trial. PLoS One 17, e0270178. https://doi.org/10.1371/journal.pone.0270178.
Schaeuffele, C., Meine, L.E., Schulz, A., Weber, M.C., Moser, A., Paersch, C., Recher, D., Boettcher, J., Renneberg, B., Flückiger, C., Kleim, B., 2024. A systematic review and meta-analysis of transdiagnostic cognitive behavioural therapies for emotional disorders. Nat. Hum. Behav. 8, 493–509. https://doi.org/10.1038/s41562-023-01787-3.
Scheidt, C.E., Waller, E., Endorf, K., Schmidt, S., König, R., Zeeck, A., et al., 2013. Is brief psychodynamic psychotherapy in primary fibromyalgia syndrome with concurrent depression an effective treatment? A randomized controlled trial. Gen. Hosp. Psychiatry 35, 160–167.
Schmidt, N.B., Buckner, J.D., Pusser, A., Woolaway-Bickel, K., Preston, J.L., Norr, A., 2012. Randomized controlled trial of false safety behavior elimination therapy: a unified cognitive behavioral treatment for anxiety psychopathology. Behav. Ther. 43, 518–532. https://doi.org/10.1016/j.beth.2012.02.004.
Schroder, J., Jelinek, L., Moritz, S., 2017. A randomized controlled trial of a transdiagnostic internet intervention for individuals with panic and phobias - one size fits all? J. Behav. Ther. Exp. Psychiatry 54, 17–24. https://doi.org/10.1016/j.jbtep.2016.05.002.
Schuurmans, J., Comijs, H., Emmelkamp, P.M.G., Gundy, C.M., Weijnen, I., van den Hout, M., van Dyck, R., 2006. A randomized controlled trial of the effectiveness of cognitive-behavioral therapy and sertraline versus a waitlist control group for anxiety disorders in older adults. Am. J. Geriatr. Psychiatry 14 (3), 255–263. https://doi.org/10.1097/01.jgp.0000196629.19634.00.
Slatina Murga, S., Janković, S., Muhić, M., Sikira, H., Burn, E., Priebe, S., Džubur Kulenović, A., 2021. Effectiveness of a structured intervention to make routine clinical meetings therapeutically effective (DIALOG+) for patients with depressive and anxiety disorders in Bosnia and Herzegovina: a cluster randomised controlled trial. Psychiatry Res. Commun. 1 (2). https://doi.org/10.1016/j.psycom.2021.100010.
Sohanpal, R., Pinnock, H., Steed, L., Heslop-Marshall, K., Kelly, M.J., Chan, C., Wileman, V., Barradell, A., Dibao-Dina, C., Font Gilabert, P., Healey, A., Hooper, R., Mammoliti, K.M., Priebe, S., Roberts, M., Rowland, V., Waseem, S., Singh, S., Smuk, M., Underwood, M., Taylor, S.J., 2024. A tailored psychological intervention for anxiety and depression management in people with chronic obstructive pulmonary disease: TANDEM RCT and process evaluation. Health Technol. Assess. 28 (1), 1–129. https://doi.org/10.3310/PAWA7221.
Sorby, N.G., Reavley, W., Huber, J.W., 1991. Self help programme for anxiety in general practice: controlled trial of an anxiety management booklet. Br. J. Gen. Pract. 41 (351), 417–420.
Spinhoven, P., Drost, J., de Rooij, M., van Hemert, A.M., Penninx, B.W., 2014. A longitudinal study of experiential avoidance in emotional disorders. Behav. Ther. 45, 840–850.
Sterne, J.A.C., Savovic, J., Page, M.J., Elbers, R.G., Blencowe, N.S., Boutron, I., Higgins, J.P., 2019. RoB 2: a revised tool for assessing risk of bias in randomised trials. Br. Med. J. 366, l4898.
Sun, S., Lin, D., Goldberg, S., Shen, Z., Chen, P., Qiao, S., Operario, D., 2022. A mindfulness-based mobile health (mHealth) intervention among psychologically distressed university students in quarantine during the COVID-19 pandemic: a randomized controlled trial. J. Couns. Psychol. 69 (2), 157–171. https://doi.org/10.1037/cou0000568.
Titov, N., Andrews, G., Johnston, L., Robinson, E., Spence, J., 2010. Transdiagnostic internet treatment for anxiety disorders: a randomized controlled trial. Behav. Res. Ther. 48 (9), 890–899. https://doi.org/10.1016/j.brat.2010.05.014.
Titov, N., Dear, B.F., Schwencke, G., Andrews, G., Johnston, L., Craske, M.G., et al., 2011. Transdiagnostic internet treatment for anxiety and depression: a randomized controlled trial. Behav. Res. Ther. 49, 441–452. https://doi.org/10.1016/j.brat.2011.05.005.
Torres-Platas, S.G., Escobar, S., Belliveau, C., Wu, J., Sasi, N., Fotso, J., et al., 2019. Mindfulness-based cognitive therapy intervention for the treatment of late-life depression and anxiety symptoms in primary care: a randomized controlled trial. Psychosomatics 88 (4), 254–256. https://doi.org/10.1016/j.psym.2018.12.002.
Trimmer, C., Tyo, R., Pikard, J., McKenna, C., Naeem, F., 2018. Low-intensity cognitive behavioural therapy-based music group (CBT-music) for the treatment of symptoms of anxiety and depression: a feasibility study. Behav. Cogn. Psychother. 46 (2), 168–181. https://doi.org/10.1017/S1352465817000734.
Tulbure, B.T., Rusu, A., Sava, F.A., Sălăgean, N., Farchione, T.J., 2018. A web-based transdiagnostic intervention for affective and mood disorders: randomized controlled trial. Jmir Ment. Health 5 (2), e8901. https://doi.org/10.2196/mental.8901.
Tully, P.J., Turnbull, D.A., Horowitz, J.D., Beltrame, J.F., Baune, B.T., Sauer-Zavala, S., Wittert, G.A., 2022. Transdiagnostic cognitive-behavioral therapy for depression and

anxiety disorders in cardiovascular disease patients: results from the CHAMPS pilot-feasibility trial. Front. Psychiatry 13. https://doi.org/10.3389/fpsyt.2022.741039.
van Beek, M.H.C.T., Voshaar, R.C.O., Beek, A.M., van Zijderveld, G.A., Visser, S., Speckens, A.E.M., et al., 2013. A brief cognitive-behavioral intervention for treating depression and panic disorder in patients with noncardiac chest pain: a 24-week randomized controlled trial. Depress. Anxiety 30 (7), 670–678. https://doi.org/10.1002/da22019.
Viechtbauer, W., 2010. Conducting meta-analyses in R with the metafor package. J. Stat. Softw. 36, 1–48.
Viechtbauer, W., Cheung, M.W.L., 2010. Outlier and influence diagnostics for meta-analysis. Res. Synth. Methods 1, 112–125.
Vollestad, J., Sivertsen, B., Nielsen, G.H., 2011. Mindfulness-based stress reduction for patients with anxiety disorders: evaluation in a randomized controlled trial. Behav. Res. Ther. 49 (4), 281–288. https://doi.org/10.1016/j.brat.2011.01.007.
Wall, A.D., Lee, E.B., 2022. What do anxiety scales really measure? An item content analysis of self-report measures of anxiety. J. Psychopathol. Behav. Assess. 44, 1148–1157. https://doi.org/10.1007/s10862-022-09973-9.
Wallsten, D., Norell, A., Anniko, M., Eriksson, O., Lamourín, V., Halldin, I., Kindbom, T., Hesser, E., Watkins, A., Tillfors, M., 2023. Treatment of worry and comorbid symptoms within depression, anxiety, and insomnia with a group-based rumination-focused cognitive-behavior therapy in a primary health care setting: a randomized controlled trial. Front. Psychol. 14, 1196945. https://doi.org/10.3389/fpsyg.2023.1196945.
Wang, M., Zhang, H., Zhang, X., Zhao, Q., Chen, J., Hu, C., Feng, R., Liu, D., Fu, P., Zhang, C., Cao, J., Yue, J., Yu, H., Yang, H., Liu, B., Xiong, W., Tong, H., Zhu, S., Yang, Y., 2023. Effects of an online brief modified mindfulness-based stress reduction therapy for anxiety among Chinese adults: a randomized clinical trial. J. Psychiatr. Res. 161, 27–33. https://doi.org/10.1016/j.jpsychires.2023.02.014.
Wells, A., Matthews, G., 2014. Attention and Emotion (Classic Edition): A Clinical Perspective, 1st ed. Psychology Press. https://doi.org/10.4324/9781315747187.
Wilamowska, Z.A., Thompson-Hollands, J., Fairholme, C.P., Ellard, K.K., Farchione, T.J., Barlow, D.H., 2010. Conceptual background, development, and preliminary data from the unified protocol for transdiagnostic treatment of emotional disorders. Depress. Anxiety 27, 882–890.
World Health Organization, 2022. World Mental Health Report; Transforming Mental Health for All. World Health Organization, Geneva.
Wuthrich, V.M., Rapee, R.M., 2019. Telephone-delivered cognitive behavioral therapy for treating symptoms of anxiety and depression in Parkinson's disease: a pilot trial. Clin. Gerontol. 42 (4), 444–453. https://doi.org/10.1080/07317115.2019.1580811.
Yamamoto, A., Tsukuda, B., Minami, S., Hayamizu, S., Naito, M., Koshikawa, Y., Funatsuki, T., Takano, C., Ogata, H., Takekita, Y., Nishida, K., Ikeda, S., Kinoshita, T., Kato, M., 2023. Effectiveness and changes in brain functions by an occupational therapy program incorporating mindfulness in outpatients with anxiety and depression: a randomized controlled trial. Neuropsychobiology 82 (5), 306–318.
Yan, Z., Meng, F., He, M., Li, Z., 2022. The efficacy of a transdiagnostic group cognitive behavioral intervention for Chinese elderly with emotional disorders: a one-year follow-up randomized clinical trial. Front. Psychiatry 13. https://doi.org/10.3389/fpsyt.2022.1027994.
Yorke, J., Adair, P., Doyle, A.M., Dubrow-Marshall, L., Fleming, S., Holmes, L., et al., 2016. A randomised controlled feasibility trial of group cognitive behavioural therapy for people with severe asthma. J. Asthma 54 (5), 543–554.
Zhang, X., Mao, F., Li, Y., Wang, J., Wu, L., Sun, J., Cao, F., 2022. Effects of a maternal mindfulness intervention targeting prenatal psychological distress on infants' meconium microbiota: a randomized controlled trial. Psychoneuroendocrinology 145, 1–7. https://doi.org/10.1016/j.psyneuen.2022.105913.