

ALL TALK, LITTLE PROOF: REVISITING THE DODO BIRD VERDICT IN 69 RCTS OF PSYCHOTHERAPY FOR PSYCHOSIS

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Background:

Psychotic disorders (schizophrenia-spectrum and related conditions) are early-onset, frequently recurrent illnesses associated with persistent functional impairment, elevated mortality, and substantial caregiver and societal costs. While antipsychotics reduce acute positive symptoms, many patients experience residual negative, affective, and cognitive symptoms, alongside impaired role functioning and quality of life. Accordingly, clinical guidelines recommend adjunct psychological therapies. A diverse portfolio exists—e.g., cognitive-behavioural therapy for psychosis (CBTp), family interventions/psychoeducation, social skills training, cognitive remediation, metacognitive and mindfulness / acceptance-based approaches, trauma-focused therapies, and supported employment—delivered individually or in groups, with face-to-face, blended, and increasingly fully digital formats.

However, the evidence base is fragmented across modalities, populations, and delivery modes; trials frequently vary in comparators and outcomes (symptoms, relapse, functioning, quality of life, service use), and risk of bias and small-study effects complicate interpretation. Uptake of scalable digital/blended delivery has outpaced consolidated appraisals of efficacy and acceptability, and the overall certainty of evidence informing clinicians, services, and commissioners remains unclear. A rigorous synthesis using standardised outcome hierarchies and GRADE is therefore needed to quantify benefits, harms, and confidence in effects across the full range of psychological therapies for adults with schizophrenia-spectrum disorders.

Aims & Hypotheses: To synthesise efficacy, acceptability, and functional outcomes—and appraise certainty (GRADE)—for all psychological therapies used with adults with schizophrenia-spectrum disorders, across delivery formats (individual, group, family; face-to-face, blended, digital).

Methods:

Design & Reporting.

Umbrella review (overview of systematic reviews of RCTs) with trial-level de-duplication and re-synthesis; protocol and analysis plan pre-specified; PRISMA 2020/PRIOR compliant.

Data Sources & Search.

MEDLINE, Embase, PsycINFO, CENTRAL, CINAHL, Web of Science, and the **Metapsy Psychosis** database were searched from inception to **December 2024** (English-language). Reference lists of eligible reviews and key guidelines were hand-searched; forward citation tracking conducted.

Search Strategy (example, PubMed).

A database-specific **systematic review filter** was applied, and syntax was adapted for each database (field tags, truncation, and phrase handling kept consistent across platforms).

Eligibility & Selection.

Adults (≥18 y) with DSM/ICD schizophrenia-spectrum disorders; interventions included CBT/CBTp, Cognitive Remediation, Social Skills Training, Psychoeducation, Family Psychoeducation, and Family Therapy in any format (individual, group, family; face-to-face, blended, digital). Comparators were TAU/routine or enhanced follow-up, or active psychological controls. Primary outcomes: change in **positive and negative** symptoms post-treatment (and longest follow-up where available). RCTs only; excluded adolescent samples and primary substance-induced/organic psychoses. Two reviewers independently screened and extracted; overlap across reviews quantified (corrected covered area), unique RCTs de-duplicated and re-extracted.

Data, Bias, and Synthesis.

Dual extraction of trial characteristics, interventions, comparators, instruments (e.g., PANSS/BPRS; SANS/BNSS), time-points, and attrition; comparator splitting for multi-arm trials; effective sample sizes for cluster RCTs; missing SDs imputed from CIs/p-values/correlations. Risk of bias: **Cochrane RoB 2**; review quality: **AMSTAR-2**. Effects computed as **Hedges' g** (change preferred; post-treatment if necessary; negative favours active). Random-effects (REML, **Hartung-Knapp**) with τ^2 , **I²**, **95%** prediction intervals; influence diagnostics and pre-specified outlier rules.

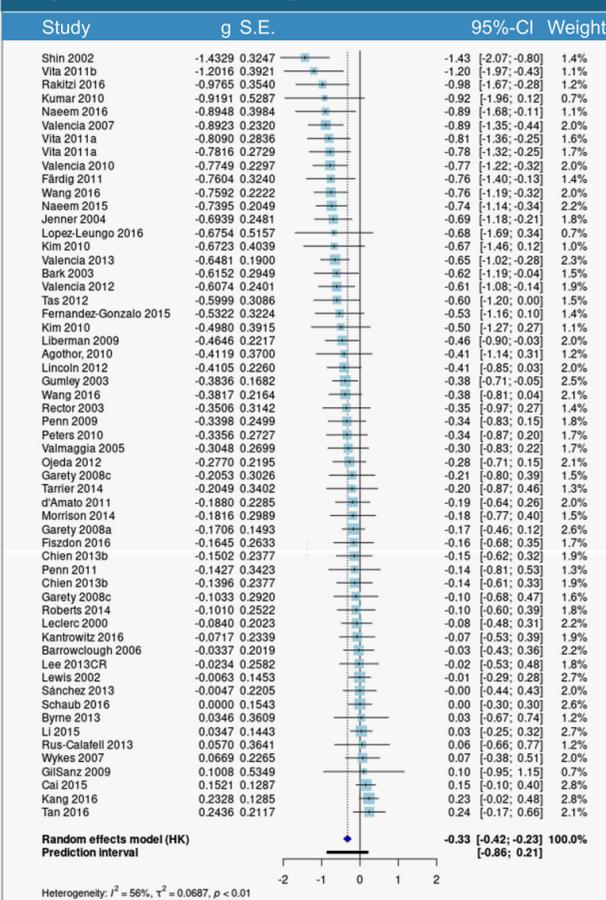
Small-study effects via **Egger's regression** (≥10 trials) with trim-and-fill sensitivity. **NNT** derived from SMDs using plausible control event rates (20–50%). Pre-specified subgroup: **psychotherapy + antipsychotics vs medication + routine** follow-up; additional moderators explored by meta-regression where feasible. Certainty graded with **GRADE**; sensitivity excluding high-risk trials and non-blinded outcomes. Analyses in **R** (metafor/meta).

Results:

Study yield and coverage. Twelve unique review records were screened; six met inclusion and contributed 69 unique RCTs (total n=5,865; per-trial n=14–422; median 67). Of these, k=57 trials/effects contributed data to the positive-symptom meta-analysis (per-trial n=14–256; mean 85; median 71).

Primary outcome (positive symptoms). Using Hedges' g (negative values favour psychological therapy), the pooled effect was $g = -0.33$ (95% CI -0.42 to -0.23 ; $p < 0.001$), indicating a small, statistically significant reduction in positive symptoms versus controls (Figure 1).

Figure: Forest plot summarizing pooled results for meta-analysis



Subgroup analysis

- Across modalities, psychological therapies yield small average reductions in positive symptoms; no significant between-modality differences ($p = 0.387$); point estimates are larger—but low certainty—in under-studied approaches (Figure 4).
- There was no evidence that control type moderated effects on positive symptoms (p for moderation = 0.975): psychological therapies showed small benefits versus case management/social work ($g = -0.30$, 95% CI -0.40 to -0.19), medication with routine check-ups ($g = -0.36$, -0.60 to -0.12), and befriending ($g = -0.46$, -0.83 to -0.09), while supportive counselling was directionally similar but imprecise ($g = -0.36$, -0.86 to 0.14 ; $p = 0.159$).

Conclusion:

- Across delivery modes and settings, psychological therapies yield small but clinically meaningful symptom reductions for psychosis and augment outcomes when combined with medication (i.e., additive rather than substitutive benefit).
- Certainty of evidence: Psychoeducation has the most consistent and reliable evidence (highest GRADE certainty in our review). For other modalities, confidence remains tentative (generally low–moderate GRADE) due to risks of bias, inconsistency, and imprecision.
- Comparators: Where tested, effects were not meaningfully moderated by the nature of usual-care controls, supporting robustness across case management, routine check-ups, befriending, or supportive counselling comparators.
- Beyond symptoms: Evidence for durability, functioning, quality of life, relapse, and service use is limited and mixed; long-term benefits remain uncertain.

The **Number Needed to Treat (NNT)** was ≈ 9.9 , i.e., ~ 10 patients would need to receive a psychological intervention for one additional patient to achieve a positive outcome

Between-study heterogeneity and prediction. Heterogeneity was $I^2 = 56.4\%$ (95% CI 41.4–67.6%), consistent with moderate inconsistency.

Sensitivity (influence / outliers). After removing prespecified outliers, the pooled effect was $g = -0.32$ (95% CI -0.40 to -0.24 ; $p < 0.001$) with reduced heterogeneity ($I^2 = 29\%$ [~ 0 –50%]), supporting robustness of the main finding.

Small-study effects / publication bias. Egger's intercept = -2.476 (95% CI -3.534 to -1.417); $t = -4.585$; $p < 0.001$, indicating funnel asymmetry consistent with small-study effects/publication bias (Figure 2).

Risk of bias:

A large proportion of studies had major shortcomings in their study design (Figure 3).



Figure 2: Funnel plot indicating extent of publication bias in meta-analysis

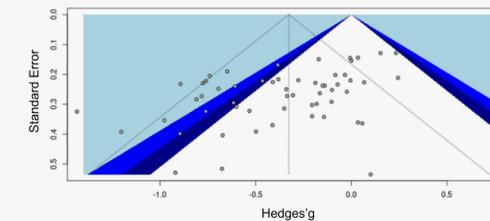


Figure 3: Risk of bias in studies included in meta-analysis

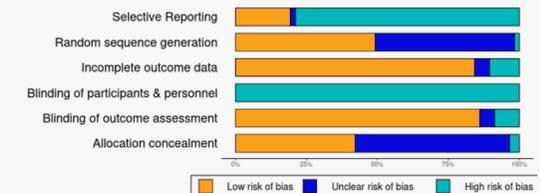
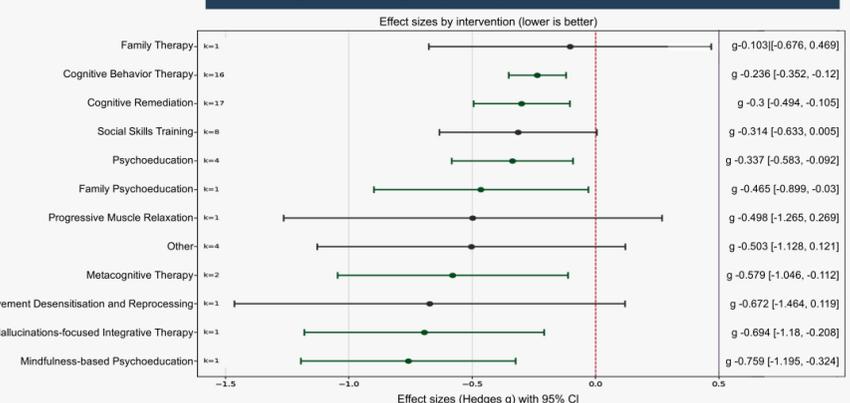


Figure 4: Subgroup analysis for type of interventions



Intervention	I ²	Publication bias (Egger)	Risk of bias	Indirectness	Imprecision	Inconsistency	GRADE certainty
Cognitive Remediation	60.40%	Bias suspected ($t = -3.04$, $p = 0.006$)	21 studies high risk; many with some concerns	None	Serious (CI includes effects < MID=0.2)	Serious (substantial I ²)	Very low
CBT for Psychosis (CBTp)	13%	No evidence ($t = -1.26$, $p = 0.22$)	19/28 high risk; remaining some concerns	None	Serious (upper CI < MID=0.2)	Some (PI crosses 0)	Very low
Social Skills Training	21%	No evidence ($t = -0.96$, $p = 0.37$)	All at high risk or some concerns	None stated	Not serious (CI > MID=0.2)	Serious (PI crosses 0; effects vary)	Very low
Psychoeducation	5%	No evidence ($t = -0.36$, $p = 0.73$)	50% with high risk/some concerns	None	Not serious (CI > MID=0.2)	Not serious (low I ² ; PI excludes 0)	Moderate

Recommendations:

- Equity & implementation: Scalable formats (e.g., digital, brief, or task-shared delivery) are promising but require attention to training, supervision, fidelity, and engagement to avoid a quality gap—particularly in under-resourced settings.
- Clinical implications: Offer psychological therapies as part of routine, holistic care alongside pharmacotherapy. Where resources are constrained, psychoeducation can be a pragmatic first-line option; selection should be guided by patient goals, preferences, and feasibility.
- Research priorities: Large, pragmatic, and head-to-head trials with ≥12-month follow-up are needed to confirm durability, functional gains, and cost-effectiveness; adopt core outcome sets, assess mechanisms and heterogeneity of treatment effects, and embed implementation and economic evaluations to inform policy and practice.