Supplementary information of https://doi.org/10.1631/jzus.B2500701

Methods

Full database search strategies (PRISMA-S compliant)

This supplementary file provides the complete, reproducible search strategies for three databases. Reporting follows PRISMA-S recommendations (Rethlefsen et al., 2021), including the database/interface, limits, and the fully executed query strings.

Table A1 Overview of databases, interfaces, dates, limits, and results

Database (Interface)	Coverage	Last searched (YYYY-MM-DD)	Limits/filters	Results (*n*)	Export format
PubMed (NCBI)	Inception–present	2025-10-04	English; 2000–present; adult	63	.nbib
APA PsycArticles (Ovid)	Inception–present	2025-10-05	Original Article; 2000–present	12	.ris
Web of Science Core Collection	Inception–present	2025-10-04	English; Article; Clinical trial; 2000–present	259	.txt/.ciw

Note: Provide exact dates and record counts as retrieved on the day of execution. All full strategies (with field tags, Boolean operators, proximity operators, and truncation) are reproduced below.

Methods A1 (a). PubMed (NCBI)—executed on [2025-10-04]

Searcher: [Huimin Huang]

Filters: Language=English; Publication date=2000–present; Age=Adult.

Full strategy as executed:

((“Therapeutic Alliance” [Mesh] OR “therapeutic alliance” [tiab] OR “working alliance” [tiab] OR “helping alliance” [tiab] OR WAI [tiab] OR “Working Alliance Inventory” [tiab] OR HAQ [tiab])
AND
(“Telemedicine” [Mesh] OR “Internet” [Mesh] OR “Videoconferencing” [Mesh] OR “Mobile Applications” [Mesh] OR telehealth [tiab] OR telemedicine [tiab] OR telepsychiatr* [tiab] OR telepsycholog* [tiab] OR online [tiab] OR internet* [tiab] OR web-based [tiab] OR e-health [tiab] OR eHealth [tiab] OR video [tiab] OR videoconferenc* [tiab] OR telephone [tiab] OR phone [tiab] OR email [tiab] OR mobile [tiab] OR smartphone [tiab] OR app[tiab] OR iCBT [tiab] OR “internet-delivered” [tiab] OR blended [tiab] OR hybrid [tiab] OR “face-to-face” [tiab] OR “in-person” [tiab])
AND
(“Depressive Disorder” [Mesh] OR “Anxiety Disorders” [Mesh] OR depress* [tiab] OR anxi* [tiab] OR “common mental disorder*” [tiab] OR “emotional disorder*” [tiab]))
NOT
(“Schizophrenia Spectrum and Other Psychotic Disorders” [Mesh] OR “Bipolar Disorder” [Mesh] OR schizo* [tiab] OR psychosis [tiab] OR psychotic [tiab] OR bipolar [tiab] OR mania [tiab] OR manic [tiab])

Methods A1 (b). APA PsycArticles (Ovid)—executed on [2025-10-05]

Searcher: [Huimin Huang] *Interface: Ovid*

Limits: yr=2000–present and Original Article

Full strategy as executed:

((therapeutic alliance or working alliance or helping alliance or WAI or “Working Alliance Inventory” or HAQ or (alliance adj3 (therap* or psychotherap*))).ti,ab.)
and

((online or internet* or “web-based” or e-health or eHealth or telehealth or telemedicine or telepsychiatr* or telepsycholog* or video or videoconferenc* or telephone or phone or email or mobile or smartphone or app or iCBT or internet-delivered or blended or hybrid or face-to-face or in-person).ti,ab.)
and
((depress* or anxi* or “common mental disorder*” or “emotional disorder*”).ti,ab.)
not
((schizo* or psychosis or psychotic or bipolar or mania or manic).ti,ab.)

Methods A1 (c). Web of Science Core Collection—executed on [2025-10-04]

Searcher: [Huimin Huang] Platform: Clarivate Web of Science
Filters: Timespan=2000–present; Document Type=Article and clinical trail; Language=English; Research Areas=Psychiatry, Psychology Clinical, Telemedicine.

Full strategy as executed:

TS=((“therapeutic alliance” OR “working alliance” OR “helping alliance” OR WAI OR “Working Alliance Inventory” OR HAQ)
AND
(online OR internet* OR web-based OR e-health OR eHealth OR telehealth OR telemedicine OR telepsychiatr* OR telepsycholog* OR video OR videoconferenc* OR telephone OR phone OR email OR mobile OR smartphone OR app OR iCBT OR “internet-delivered” OR blended OR hybrid OR “face-to-face” OR “in-person”)
AND
(depress* OR anxi* OR “common mental disorder*” OR “emotional disorder*”))
NOT
(schizo* OR psychosis OR psychotic OR bipolar OR mania OR manic))

Table S1 Methodological characteristics, alliance dimensions, and reported moderators in cross-media psychological treatments (online, blended, and face-to-face) for adult depression and anxiety

Study ID	Authors (year)/study location	Sample size/mean age (years)	Diagnosis	Study design	Theoretical orientation	Dimensions (Bond/Task/Goal differences)	Reported moderators
1	Stiles-Shields et al. (2014)/USA	325/47.7	MDD	Secondary data analysis of RCT	CBT	Task diff=0.1, 0.2; Bond diff=0.1, 0.4; Goal diff=0.6, 0.4. No significant differences between groups	Female clients reported significantly higher WAI-C and subscale scores (P=0.001–0.040; Cohen's d=0.13–0.25)
2	Swartz et al. (2023)/USA	77/IPT-IP (33.76); CBT-IP (33.29); IPT-TH (29.65); CBT-TH (28.82)	MDD	Randomized, parallel-group study	CBT/brief IPT	NG	IPT-TH group showed greater increase in therapist-rated WAI over time vs. CBT (B=0.47, SE=0.16, t=2.88, P=0.006, d=0.97). Patient and therapist WAI scores significantly correlated (r=0.418, P<0.001)
3	Mathiasen et al. (2022)/Denmark	76/FTF (35.16); BLD (34.78)	MDD	2-arm randomized controlled noninferiority trial	CBT	NG	Significant interaction effects: part-time employed (β=−5.83, P=0.03) and unemployed (β=−7.59, P=0.004) both favoring BLD. Sick leave increased slope (β=3.96, P=0.02). Preferring blended care decreased slope (β=−3.25, P=0.04)
4	Berger et al. (2018)/Germany	98/43.1	Unipolar affective disorder	2-arm pragmatic randomized-controlled trial	CBT-based	Cohen's d: Week 6 (Task=0.20, Goal=0.04, Bond=0.47, not significant); Week 12 (Task=0.49, Goal=0.20, Bond=0.47, not significant)	Program usage significantly associated with outcome: number of online sessions (r=−0.34, P<0.05); time spent in program (r=−0.33, P<0.05)
5	Branquinho et al. (2024)/Portugal	34/BLD=30.9 (2.30); PO-Async=33.3 (5.38)	Postpartum depression (MDD)	2-arm open-label pilot RCT	CBT	NG	NG
6	Romijn et al. (2021)/The Netherlands	114/36.3 (10.6)	Anxiety disorder	Parallel-group randomized controlled trial	CBT	NG	NG
7	Axelsson and Hedman-Lagerlöf (2025)/Sweden	204/PO-Async=39 (12); FTF=39 (13)	Health anxiety (somatic symptom disorder/illness anxiety disorder)	Secondary study of an RCT	CBT	NG (6-item composite score only; dimensional decomposition not reported for between-group comparison)	Early WAI and credibility/expectancy predictive of subsequent symptom reduction in PO-Async; later ratings more reflective of prior symptom change.

Study ID	Authors (year)/study location	Sample size/mean age (years)	Diagnosis	Study design	Theoretical orientation	Dimensions (Bond/Task/Goal differences)	Reported moderators
8	Askjer and Mathiasen (2021)/Denmark	76/FTF=35.16 (14.14); BLD=34.78 (13.98)	MDD	Secondary analysis of an RCT	CBT	Goal dimension consistently scored higher than Task and Bond across all subgroups. Therapists rated Bond higher than patients; patients rated Goal comparatively high; therapists rated Task comparatively low	NG
9	Bouchard et al. (2020)/Canada	71/PO-VC=34.90 (10.45); FTF=36.90 (11.60)	Panic disorder and agoraphobia (PDA)	2-arm intent-to-treat non-inferiority trial	CBT	No significant Condition or Time×Condition effects on any WAI dimension. Session 5: Task t=−0.19 (P=0.85); Bond t=−1.43 (P=0.16); Goal t=−0.69 (P=0.50); CALPAS t=0.48 (P=0.63)	Time×Gender interaction significant for PAS (F(2134)=5.1, P<0.01, η^2p= 0.07); males benefited more from CBT than females

Notes/abbreviations

Values in parentheses are reported as presented in the original studies; where a mean age is followed by a second value in parentheses within the same group, the parenthetical value indicates standard deviation. MDD: major depressive disorder; PDA: panic disorder and agoraphobia; CBT: cognitive behavioral therapy; IPT: interpersonal psychotherapy; IPT-IP: in-person interpersonal psychotherapy; CBT-IP: in-person cognitive behavioral therapy; IPT-TH: telehealth interpersonal psychotherapy; CBT-TH: telehealth cognitive behavioral therapy; BLD: blended; PO-VC: pure online videoconference; PO-Async: pure online asynchronous; FTF: face-to-face; RCT: randomized controlled trial; WAI: Working Alliance Inventory; WAI-C: WAI Client version; WAI-SR: Working Alliance Inventory–Short Revised; WAI-SR-C: Working Alliance Inventory–Short Revised Client version; WAI-SR-T: Working Alliance Inventory–Short Revised Therapist version; CALPAS: California Psychotherapy Alliance Scales; PAS: Panic and Agoraphobia Scale; B and β: regression coefficients as reported in the original studies; SE: standard error; r: Pearson's correlation coefficient; Cohen's d: standardized mean difference; η^2p: partial eta squared; NG: not given.

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