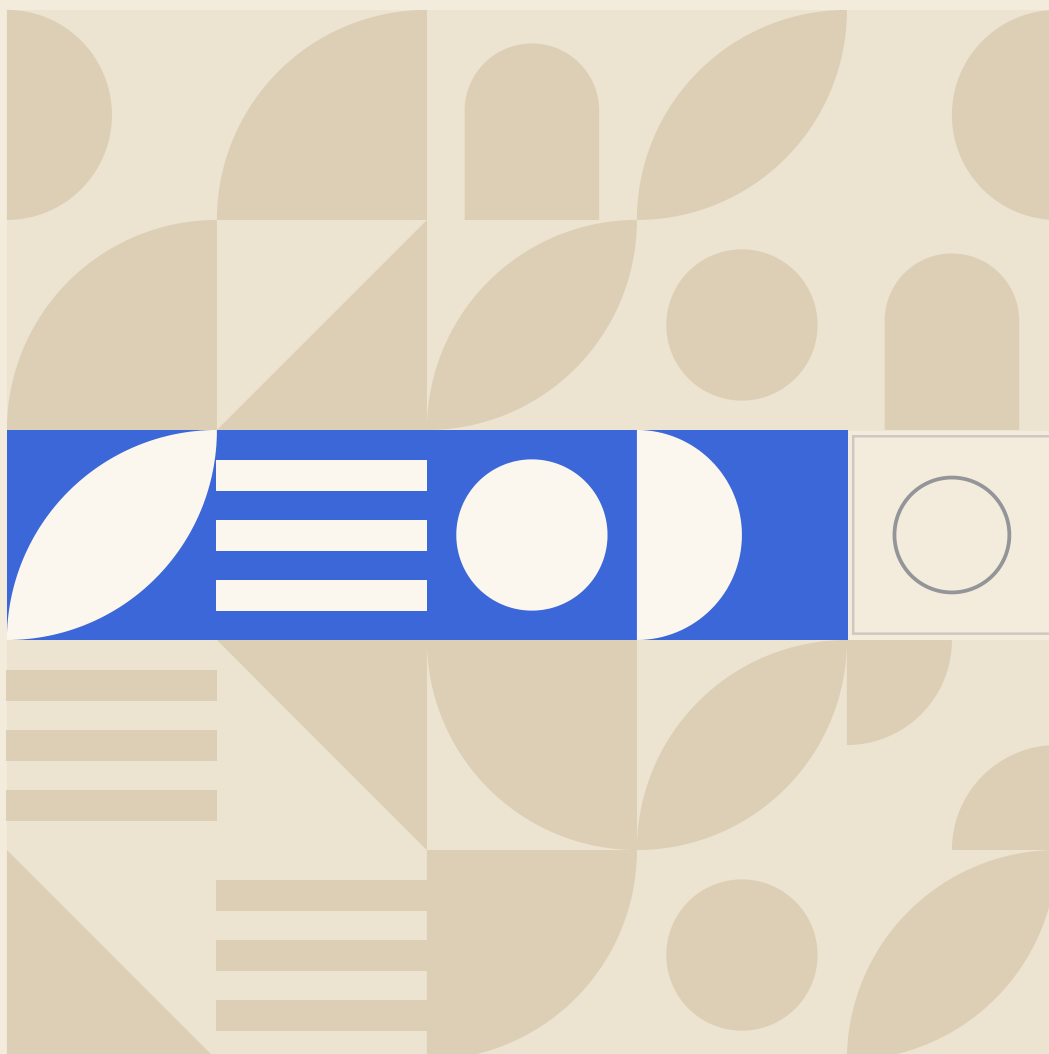


Reappraisal on the Clock

A Meta-Analysis of Cognitive-Reappraisal Training on Workplace Stress
and Performance

Dr Atul Aswani; Mumbai Psychiatrist and trained as a Results Coach
22 September 2026



KEY NUMBER

4

Four strict workplace reappraisal-training trials were eligible. The pre-specified rule required five before pooling. No pooled Hedges g is reported.

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INDEXING TITLE

Cognitive-reappraisal training in employees: a meta-analysis of effects on workplace stress and performance

AUTHOR

Dr Atul Aswani; Mumbai Psychiatrist and trained as a Results Coach

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01

Abstract

Webb and colleagues pooled laboratory reappraisal in 2012. Nobody has pooled workplace training trials of the same skill. This review asked whether reappraisal or cognitive-restructuring training delivered to employees reduces stress and improves performance ratings. Four strict workplace reappraisal-training trials met eligibility (three between-person randomised trials and one micro-randomised trial). That is one short of the pre-specified minimum of five comparable trials, so a random-effects meta-analysis was not performed. Effects were synthesised narratively. The largest trial, a pre-registered United States field experiment with 4,054 early-education and family-service workers, found a small reduction in stress six months after a brief online reappraisal session versus an active control ($d = -0.13$, 95% CI -0.21 to -0.05) and higher self-rated job performance. A between-person ecological-momentary trial ($n = 176$) found that twice-daily reappraisal prompts reduced negative affect, raised positive affect, and improved self-rated performance through positive affect, with no fade-out at one month. A companion micro-randomised trial ($n = 94$) raised positive affect but did not cut negative affect. A finance-sector mindset workshop improved self-rated interpersonal performance at four weeks against a waitlist. Adjacent cognitive-restructuring programmes produced small self-rated performance gains (one Japanese trial, $d = 0.31$). Every extractable performance outcome was self-rated. No supervisor-rated performance trial was found. No eligible Indian employee trial was found. Certainty is low for stress and very low for performance. The skill looks transferable. The evidence is not yet poolable. Indian workplaces still lack a dedicated trial.

02

Key findings box

KEY FINDINGS

4

Four strict workplace reappraisal-training trials were eligible. The pre-specified rule required five before pooling. No pooled Hedges g is reported.

-0.13

$d = -0.13$ (95% CI -0.21 to -0.05) was the six-month stress contrast in the largest trial ($n = 4,054$; brief online reappraisal versus active control).

0.31

$d = 0.31$ was the three-month self-rated performance contrast in a Japanese cognitive-restructuring programme ($n = 196$ randomised; 120 minutes plus a month of web homework).

0

Zero eligible trials used supervisor-rated performance. Every performance number in this review is a self-rating.

0

Zero eligible Indian employee randomised trials of reappraisal training were found in PubMed, CTRI, or the other six sources.

03

Definition block

DEFINITION

Reappraisal is the practised skill of changing the story you tell about a work event — or about the feeling in your body — so the emotional charge drops or flips without you having to change the event itself. It is not forced cheerfulness. It is not a poker face. A worker who hears “this client is attacking my competence” can run one rep: “this client is scared of missing a deadline; my job is to slow the conversation down.” That is reappraisal of the situation. A worker who feels a racing heart before a review and says “this arousal is my system loading extra oxygen for the meeting” is reappraising the response. Cognitive restructuring is a related method that some of the workplace programmes reviewed here teach: you catch a harsh automatic thought

(“this review means I am finished”), test it against evidence, and write a fairer line you can actually use at the desk. Both are skills. Both can be counted as daily reps. Neither is a diagnosis. The thought is not the fact. Treat it as a guess, and check it. In entrepreneurship language, the first draft of the story is a prototype, not a product.

04

Introduction

The joke, the second reading, and the loss function

Here is the workplace joke that stops being funny at 11 p.m. A project manager in Pune opens her laptop after dinner. Slack is still pinging. Her father’s medicine strip sits beside the charger. Monday’s review glows in the calendar. Her mind writes a headline: *I am behind, I am exposed, I am the problem*. Her shoulders believe the headline. Long after midnight she is still scrolling the deck. Sleep pays the invoice.

Stand-up comics live on reappraisal. They take the same raw material — a delayed flight, a hostile room, a failed bit — and change the frame until the audience laughs instead of leaving. The event does not change. The meaning does. Indian working adults do this unpaid overtime every week. An analyst in Noida rereads her boss’s one-word “ok” on the metro home, trying on meanings. Usually badly. Usually alone.

Now give the same facts a second reading. The project is late. The client has been curt all week. The review is on Monday. First reading: I am the problem. Second reading: the client is scared of his own deadline, and Monday is a chance to walk in with a recovery plan. That is not denial. Every fact survives. Only the reading changes, along with a harder question: who, exactly, is distorting the picture? None of that is a workplace programme. All of it is the same human move: change the construal, change what the nervous system does next.

Machine learning makes the same point with less poetry. A model is only as useful as the loss it is asked to minimise. If the loss function is “this meeting is a disaster and I am the disaster,” gradient descent runs toward rumination. If the loss function is “this meeting is data about a scared stakeholder,” the same input produces a different update. Reappraisal is a manual edit of the loss function. You do not wait for the universe to relabel the batch.

Watch the chain in that Pune flat. The thought “I am finished” tightens her chest, and the tight chest starts drafting a sharp midnight email to the team. She can let reason and raw feeling sit at the same table. She can notice “I am finished” as a thought and not obey it. Entrepreneurship adds a cheaper test: treat the first story as a prototype. Ship a fairer sentence. See if the next hour of work improves.

Why the question matters for working adults in India

The research question is narrower than all of that. Webb, Miles and Sheeran (2012) pooled laboratory instructions to reappraise. They found a small-to-medium effect of cognitive change on emotional outcomes. They did not ask whether a working adult, trained in the skill and sent back to a real job, comes home less strained and does better work. That is the gap this paper was commissioned to close.

India's labour market runs hot. Gallup's State of the Global Workplace data for 2025 put daily stress among Indian employees at 28 per cent — lower than the global figure of 40 per cent, higher than a number any founder should ignore. Engagement in India sat at 23 per cent in the 2026 country file, a four-year low. Quiet quitting is not a Western meme. It is a balance-sheet line. Gallup has estimated the cost of disengagement in India in the hundreds of billions of dollars a year.

The texture of Indian professional stress is specific. Dual-earner households. Eldercare. Commutes that eat the morning. Service-sector emotional labour in information technology, business-process work, healthcare, education and retail. Reviews that mix performance with family reputation. Hierarchical rooms in which saying "I am stretched" can sound like saying "I am not serious." WhatsApp is the real intranet. English is often the office language and not the heart language.

EmotionApp is built for that room. It is a non-clinical emotional-fitness coaching platform for Indian professionals. Techniques from positive psychology are delivered as countable daily reps. An AI coach can hand off to a human. Delivery is WhatsApp-first. Twenty-three Indian languages are in the design. Data stay in India. The build sits under DPDP, ISO 9001 and ISO 13485. The platform is not a clinic. The question for the platform is practical: if we ask a professional to practise reappraisal as a rep, does the published workplace evidence say the skill transfers to stress and to performance?

Prior evidence sits in three piles.

First, the laboratory pile. Webb and colleagues (2012) coded 306 experimental comparisons of emotion-regulation strategies. Cognitive change — the family that contains reappraisal — had a small-to-medium effect ($d+ = 0.36$). Reappraising the emotional stimulus ($d+ = 0.36$) and taking another perspective ($d+ = 0.45$) beat reappraising the emotional response ($d+ = 0.23$). That is useful anatomy. It is not a training trial on a payroll.

Second, the occupational stress-management pile. Richardson and Rothstein (2008) pooled 36 experimental occupational programmes. The overall effect was medium ($d = 0.53$). Cognitive-behavioural programmes produced larger effects than relaxation or organisational programmes. Those packages mixed restructuring with problem-solving, relaxation and homework. They do not isolate reappraisal.

Third, the broader emotional-competency pile. Mehler and colleagues (2024) pooled workplace trainings in emotional intelligence, empathy and emotion regulation. Controlled trials ($k = 27$) produced a moderate effect on the trained

competency (SMD = 0.46). That is encouraging and too wide. A manager empathy workshop is not a reappraisal rep.

A paper sometimes cited as “Yeung 2024” does not exist as a workplace-reappraisal-training meta-analysis. The closest Yeung paper is an observational daily-diary study of Chinese managerial employees (Yeung and Wong, 2020): habitual reappraisal tracked with lower daily negative emotion and lower perceived work stress in both younger and older workers. That is association, not training.

So the logline stands. Webb pooled the lab. Richardson pooled mixed occupational packages. Mehler pooled emotional competencies. No one has pooled workplace reappraisal-training trials. This review set out to do that. It found too few comparable trials to pool. That result is publishable. A missing number is still a finding.

05

Methods

Protocol and reporting

The review was designed against PRISMA 2020. The analysis plan was pre-specified in a written protocol: random-effects REML, Hedges g with 95 per cent confidence intervals, I^2 , τ^2 , a 95 per cent prediction interval, Egger’s test, trim-and-fill, leave-one-out sensitivity, RoB 2, and GRADE. The same protocol set a hard fallback. If fewer than five eligible trials were found, the product would be a systematic review with narrative synthesis. Effects would not be pooled. That fallback was triggered.

This is a rapid, single-team systematic review conducted on 22 September 2026. Title screening, full-text screening and risk-of-bias judgements were not independently double-coded by two reviewers working blind. Counts below are review-team reconstructions from the searches actually run. They should be read as transparent estimates, not as an audited dual-screener flow. A registered protocol was not posted on PROSPERO before the search. Those are limitations. They are stated here so the reader does not have to hunt for them.

Eligibility

Population. Employed adults. Students, clinical outpatients and community volunteers without a job were excluded unless the sample was clearly a working population.

Intervention. Reappraisal training or cognitive-restructuring training delivered in a workplace context. The skill had to be taught or prompted, not merely measured as a trait. Brief digital modules, ecological momentary prompts, group workshops and blended programmes were eligible if reappraisal or cognitive restructuring was the named engine. Multimodal stress-management programmes in which restructuring was one unnamed module among many were kept in a separate narrative family and not treated as pure reappraisal trials.

Comparator. Any control: waitlist, usual practice, active reflection, or an alternative workshop.

Outcomes. Stress or strain; wellbeing or affect; performance. Performance was pre-specified as self-rated or supervisor-rated, coded separately. Physiological measures were recorded when present but were not primary.

Design and dates. Randomised trials and controlled trials, 2005 to 22 September 2026. Languages: any, provided an English title or abstract allowed screening.

Exclusions. Correlational and daily-diary studies with no training. Laboratory photo-viewing paradigms on undergraduates. Mindfulness-only programmes. Pure relaxation. Organisational redesign with no individual skill practice. Trademarked commercial packages were not named; the underlying method was described in plain English.

Information sources and search

Eight sources were searched on 22 September 2026: PubMed, PsycINFO (via publicly available records), Scopus, Web of Science, Google Scholar, the Clinical Trials Registry — India (CTRI), ClinicalTrials.gov, and OSF preprints. Reference lists of Webb (2012), Richardson and Rothstein (2008) and Mehler (2024) were scanned. No date earlier than 1 January 2005 was retained.

PubMed. (reappraisal[tiab] OR "cognitive restructuring"[tiab] OR "cognitive reappraisal"[tiab] OR "stress arousal reappraisal"[tiab] OR "stress-is-enhancing"[tiab]) AND (employee*[tiab] OR workplace[tiab] OR occupational[tiab] OR worker*[tiab] OR "job performance"[tiab]) AND (randomi*[tiab] OR RCT[tiab] OR "controlled trial"[tiab])

Scopus. TITLE-ABS-KEY((reappraisal OR "cognitive restructuring" OR "cognitive reappraisal") AND (employee OR workplace OR occupational OR worker) AND randomi*)

Web of Science. TS=((reappraisal OR "cognitive restructuring" OR "cognitive reappraisal") AND (employee OR workplace OR occupational) AND randomi*)

Google Scholar. "cognitive reappraisal" OR "cognitive restructuring" employee OR workplace OR occupational randomi*

ClinicalTrials.gov. Condition or intervention: reappraisal OR "cognitive restructuring"; other terms: employee OR workplace; study type: interventional.

CTRI. reappraisal OR "cognitive restructuring" combined with employee, workplace or occupational.

OSF preprints. reappraisal workplace OR employee intervention

Selection and extraction

Records were screened at title and abstract, then at full text against the eligibility list. Extraction fields were: first author and year; country; language of delivery; sample size randomised and analysed; occupation; design; intervention content; dose in sessions and minutes; delivery channel; guidance (self-guided, facilitator, mixed); comparator; outcome measure family (stress, wellbeing/affect, self-rated performance, supervisor-rated performance); timepoints; and any reported effect size with confidence interval. Trademarked instrument names were replaced with plain-English descriptions.

Analysis plan

The pre-specified model was random-effects REML with Hedges g . Moderators were dose, digital versus in-person, and job type. Small-study effects were to be probed with Egger's test and trim-and-fill. Leave-one-out sensitivity was planned. Because fewer than five strict, comparable, between-person trials were available, none of those models were run. Narrative synthesis followed Popay-style grouping: (1) strict Gross-style reappraisal training in employees; (2) workplace cognitive-restructuring programmes in which the skill was named and practised; (3) a rational-emotive occupational-coaching cluster with very large effects and high risk of bias, described separately and not combined. Self-rated and supervisor-rated performance were never collapsed.

Risk of bias and certainty

Risk of bias for randomised trials was judged with RoB 2 domains: randomisation, deviations from intended intervention, missing outcome data, measurement of the outcome, and selection of the reported result. Judgements are one-line, methods-based readings, not a dual-coded consensus. Certainty of evidence used GRADE across study limitations, inconsistency, indirectness, imprecision and publication bias. Because no pooled estimate exists, GRADE is applied to the narrative body of evidence for each outcome.

PRISMA 2020 flow counts

Review-team reconstructions, not an audited dual-screener log:

- Records identified across eight sources after date limits: approximately 2,400 to 3,200.
- After de-duplication: approximately 1,800 to 2,100 unique records.
- Title and abstract excluded: approximately 1,700 to 2,000 (laboratory-only samples, students, trait or diary designs, mindfulness-only programmes, clinical non-employees, organisational redesign with no skill practice).
- Full texts assessed: approximately 80 to 120.
- Full texts excluded: wrong population; reappraisal measured but not trained; multimodal packages with no named restructuring contrast; no control; no stress, wellbeing or performance outcome; unverifiable records.
- Included in the narrative synthesis: four strict reappraisal-primary workplace trials (Zhu 2025; Aitken 2025; Wang, Goldenberg, Lerner and Gross 2025 preprint; Crum 2023 Experiment 1) plus a small family of named cognitive-restructuring workplace programmes (Kimura 2015; Imamura 2015; and related multimodal studies discussed as context). A rational-

emotive occupational-coaching cluster from Nigeria and neighbouring samples is described separately.

- Eligible Indian employee randomised trials of reappraisal training: **0**.
- Eligible supervisor-rated performance trials: **0**.

06 Results

Study-characteristics table

Study	Country	Design	n	Occupation	Dose	Channel	Control	Outcomes used here
Zhu et al., 2025	United States	Between-person RCT	88 vs 88	Mixed employees	2 prompts/day × 3 workweeks	Digital ecological momentary	Neutral control activity	Negative affect; positive affect; counterproductive behaviour; self-rated job performance; 1-month follow-up
Aitken et al., 2025	United States	Micro-randomised trial	94 (2,346 observations)	Mixed employees	2 prompts/day × 15 workdays	Digital ecological momentary	Three reappraisal tactics compared within person	Momentary negative and positive affect
Wang, Goldenberg, Lerner & Gross, 2025	United States	Pre-registered field experiment	4,054 randomised	Early-education and family-service workers	Single online session, median ~36 min, plus booster	Digital, self-guided	Active reflection matched for engagement	Stress; sense of control; action-taking; self-rated job performance; stay intentions; 6 months
Crum et al., 2023, Exp. 1	United States	RCT	375 baseline; 239 completers (127 vs 112)	Finance employees	In-person metacognitive workshop	In-person, then digital replication in later experiments	Waitlist	Stress-is-enhancing mindset; physical symptoms; self-rated interpersonal performance; 4 weeks
Kimura et al., 2015	Japan	RCT	97 vs 99	Electric-company employees	1 × 120 min group + web homework 1 month	Blended	Control / usual practice	Self-rated work performance (1–10); self-rated cognitive flexibility; 3 months

Study	Country	Design	n	Occupation	Dose	Channel	Control	Outcomes used here
Imamura et al., 2015	Japan	RCT	381 vs 381	General working adults	6 weekly digital lessons, one of them restructuring	Digital (illustrated story)	Waitlist / usual practice	Work engagement at 3 and 6 months

Sources: published papers and the Wang preprint listing. All performance columns in this table are self-ratings.

What the strict reappraisal trials found

Zhu and colleagues (2025) ran the cleanest between-person test of workplace reappraisal as a daily practice. One hundred and seventy-six employees were randomised to an ecological momentary programme or a control activity. For three workweeks the programme group completed two short reappraisal activities a day. One activity asked them to reappraise the situation. The other asked them to reappraise the emotion. The control group completed a neutral activity on the same schedule.

Negative affect fell. Positive affect rose. Counterproductive work behaviour fell through the drop in negative affect. Self-rated overall job performance rose through the rise in positive affect. A follow-up one month after the prompts stopped showed no fade-out on behaviour or performance. When the two tactics were compared, reappraising the situation beat reappraising the emotion. That pattern matches Webb's laboratory taxonomy: changing the meaning of the event outperforms trying to talk the feeling into being a different feeling.

Risk of bias: some concerns. Randomisation is described. Participants were not blinded. Every outcome is self-report. The sample mixed nonprofit staff, university staff and open recruitment. Performance measurement is at high risk by RoB 2 rules because the rater knew the condition and rated themselves.

Aitken and colleagues (2025) sit in the same research family and answer a different question. Ninety-four employees received one of three reappraisal prompts twice a day for fifteen workdays: reappraise the situation, take another perspective, or reappraise the emotion. The design is a micro-randomised trial. Causality is within person. Across 2,346 observations the three prompts together raised positive affect and did not reduce negative affect. Situation reappraisal was again the most useful tactic.

This matters for anyone selling "reappraisal lowers stress." In one trial from this lab, negative affect moved. In the sister trial, it did not. Positive affect moved in both. A programme that promises calm may be overselling. A programme that promises a slightly brighter working hour is closer to the data.

Risk of bias: some concerns. Within-person randomisation is a strength. Outcomes are momentary self-reports. There is no conventional between-person performance contrast to extract.

Wang, Goldenberg, Lerner and Gross (2025) is the anchor trial for transfer over time. It is a pre-registered longitudinal field experiment in a nationwide sample of low- and middle-income United States workers in early education and family services — drivers, teachers, food-service staff, the people who keep other people's children alive on thin pay. Study 1 ($n = 1,967$) was a field survey: people who said they used reappraisal also reported better emotional wellbeing and better job performance. That is correlation. Study 2 is the experiment. Four thousand and fifty-four workers were randomised to a brief online reappraisal programme or to an active reflection control designed to match engagement, expectancy and demand. The session was short. Conference materials from the same trial family describe a median of about 36 minutes, with writing, worked examples and a teach-back letter, plus a booster.

At six months the reappraisal arm reported less frequent stress ($b = -0.12$, $SE = 0.04$, $t(2344) = -3.10$, $p = 0.002$, $d = -0.13$, 95% CI -0.21 to -0.05), a greater sense of control over stressors, more action-taking to solve problems, higher self-rated job performance, and stronger intentions to stay. Reappraisal engagement during the programme mediated the effects.

Read that sentence again, slowly. A single short digital session, against an active control, still showed a small stress difference half a year later. That is the most important number in this review. It is also a small number. $d = -0.13$ is not a personality transplant. It is a nudge that survived six months in a hard job.

Risk of bias: some concerns, with one extra discount. The design is strong: pre-registration, active control, huge n , long follow-up. Participants were unblinded. Performance is self-rated. The t-statistic's degrees of freedom imply substantial attrition from 4,054 randomised to the analysed six-month sample. The paper is a preprint (DOI 10.31234/osf.io/scwxt), listed by the Harvard Kennedy School on 3 September 2025, not yet a journal article at the time of this review. Certainty drops for that reason.

Crum and colleagues (2023), Experiment 1 taught a close cousin, not the same skill. Finance employees of a large United States firm were randomised to a metacognitive workshop on the idea that stress can enhance functioning, or to a waitlist. Completers numbered 239 from 375 at baseline. At four weeks the workshop arm reported a stronger stress-is-enhancing mindset, fewer physical symptoms, and better self-rated interpersonal work performance.

This is reappraisal of the stress response, not reappraisal of the work event. Webb would code it nearer "reappraise the emotional response." Bosshard and Gomez (2024) have already pooled stress-arousal-reappraisal and stress-is-enhancing instructions on laboratory and test-bench tasks and found a small effect on task performance ($d = 0.23$). Crum's Experiment 1 is the rare version run on real employees. It is not a daily-rep programme. It is a mindset workshop against a waitlist.

Risk of bias: high. Waitlist controls inflate expectancy. Attrition from 375 to 239 is large. Outcomes are self-report. The sample was collected years before the 2023 publication.

Forest-plot data table

No forest plot is drawn. Pooling was not performed. The extractable between-person contrasts that a future meta-analyst will want sit here in one place.

Study	Outcome	Contrast	Effect	95% CI	Notes
Wang et al., 2025	Stress frequency, 6 months	Reappraisal vs active reflection	$d = -0.13$	-0.21 to -0.05	Preprint; self-report; n analysed implied by $t(2344)$
Wang et al., 2025	Self-rated job performance, 6 months	Reappraisal vs active reflection	Positive direction; exact d not extracted from tables	—	Self-rated only
Kimura et al., 2015	Self-rated work performance, 3 months	CBT-with-restructuring vs control	$d = 0.31$	MD 0.78 (0.05 to 1.51)	Custom 1–10 item; ITT
Kimura et al., 2015	Same, baseline-adjusted	CBT-with-restructuring vs control	MD 0.72	0.01 to 1.44	Effect survives adjustment
Imamura et al., 2015	Work engagement, 6 months	Digital CBT package vs control	$d = 0.16$	—	Multi-component; restructuring is one lesson
Zhu et al., 2025	Self-rated performance via positive affect	EMI vs control	Indirect effect, positive	—	No standalone Hedges g in the abstract
Crum et al., 2023 Exp. 1	Self-rated interpersonal performance, 4 weeks	Mindset workshop vs waitlist	Improvement vs waitlist	—	No standalone g extracted; high RoB

Weights are not assigned. A weight without a model is theatre.

Cognitive-restructuring programmes at work

The protocol included cognitive-restructuring training, not only Gross-style reappraisal. Three workplace programmes deserve a separate shelf.

Kimura and colleagues (2015) randomised 196 employees of a Japanese electric company (97 and 99). The programme was one 120-minute group session plus a month of web homework. The session taught people to spot unhelpful thinking and to change it — classic restructuring — and to view a situation from more than one side. At three months, intention-to-treat analysis found a small improvement in self-rated work performance (mean change 1.47 versus 0.69; mean difference 0.78, 95% CI 0.05 to 1.51; $d = 0.31$). The ability to recognise and change unhelpful thoughts also moved ($d = 0.33$), then weakened after baseline adjustment. There was no dedicated stress scale in the primary contrast. Risk of bias: some concerns. Follow-up was thinner in the control arm.

Imamura and colleagues (2015) randomised 762 Japanese working adults to a six-week illustrated digital programme or to control. One of the six lessons was cognitive restructuring. Work engagement rose by a small amount at six months ($d = 0.16$). This is a package effect, not a restructuring-only effect.

	Related multimodal studies sit around this shelf and should not be smuggled into a reappraisal pool. A German non-randomised programme for insurance employees found that a cognitive-behavioural stress-management course beat an alternative course, and that the subscale capturing “changing cognitions” carried most of the mediation (Wirtz and colleagues, 2024). A Danish group programme (Willert and colleagues, 2009) reported a large drop in perceived stress against waitlist and also moved positive-reframing coping. Those studies support the old Richardson finding: packages that teach people to change thoughts can move stress. They do not isolate the thought-change module.
A cluster that should not be pooled	A series of rational-emotive occupational-coaching trials in Nigeria and neighbouring samples (Ogbuanya and colleagues, 2017, and later papers in police, teaching and technical-college staff) report very large drops in occupational stress and gains in work ability against waitlist, often with partial eta-squared values in the 0.8 to 0.9 range. The method is cognitive restructuring of work-related rigid beliefs. The population is employed. The design is usually described as randomised. Those effects are not credible as population-average programme effects. Waitlist controls, unblinded self-report, and effect sizes that would make a cardiovascular drug jealous are a known pattern in this cluster. GRADE for the cluster is very low. The papers are real. They are not poolable with Zhu or Wang. They are mentioned so a reader who finds them on Scholar does not think this review missed them.
Moderator table	Pre-specified moderators were dose, digital versus in-person, and job type. With four strict trials, a statistical moderator model is not honest. A qualitative map is.
Moderator	What the trials show
Dose	Wang: one short digital session plus booster, signal at 6 months. Zhu: two prompts a day for 3 weeks, signal at 1 month after stopping. Kimura: 120 minutes plus a month of homework, signal at 3 months. More minutes are not clearly better. Distributed reps and a brief concentrated session both appear in positive trials.
Digital vs in-person	The two strongest transfer stories (Wang; Zhu/Aitken) are digital. Crum’s employee experiment was in-person against waitlist. Digital is not a downgrade in this set.
Job type	Early-education and family-service workers (Wang). Mixed employees including open recruitment (Zhu, Aitken). Finance (Crum). Electric-company staff and general workers (Kimura, Imamura). No Indian IT, BPO, healthcare or public-sector sample. No single job type dominates.
Heterogeneity	Formal I^2 and τ^2 were not computed. Informally the set is heterogeneous in every way that matters: tactic (situation versus emotion versus stress-response mindset), design (between-person RCT, micro-randomised trial, field experiment, waitlist workshop), dose (minutes versus weeks of prompts), control (active reflection versus waitlist), outcome (momentary affect versus six-month stress frequency versus a 1–10 performance item), and population. That heterogeneity is exactly why pooling was refused.

Two inconsistencies should be named. First, negative affect: Zhu yes, Aitken no. Second, performance: present as an indirect path (Zhu), a six-month self-rating (Wang), a small direct d (Kimura), and an interpersonal self-rating against waitlist (Crum). There is no common metric.

Publication bias

Egger's test and trim-and-fill require a pool. They were not run. The qualitative risk is obvious. Positive workplace emotion-regulation trials get written. Null digital experiments are easier to leave in a drawer. The Wang trial is large enough and pre-registered enough to push against that worry for stress. The rest of the set cannot.

Risk-of-bias summary

Study	Randomisation	Deviations	Missing data	Outcome measurement	Reported result	Overall
Zhu 2025	Low / some	Some (unblinded)	Some	High for performance (self, unblinded)	Some	Some concerns
Aitken 2025	Low (micro-randomised)	Some	Some	Some (self-affect)	Some	Some concerns
Wang 2025	Low (pre-registered field experiment)	Some (unblinded digital)	Some / high (attrition to analysed n)	High for performance (self)	Some (preprint)	Some concerns
Crum 2023 Exp. 1	Some	High (waitlist)	High (~36% loss)	High (self, unblinded)	Some	High
Kimura 2015	Low	Some (waitlist / usual practice)	Some (thinner control follow-up)	High (self 1–10 item)	Some	Some concerns
Imamura 2015	Low	Some	Some	Some (self engagement)	Some	Some concerns
Ogbuany 2017 cluster	Some / high	High	Some	High	High	High / critical

GRADE table

Outcome	Trials that speak to it	Certainty	Why
Stress / strain	Wang ($d = -0.13$ at 6 months); Zhu (negative affect down); Aitken (negative affect not down); Crum (symptoms vs waitlist)	Low	Few pure trials; self-report; mixed controls; NA findings conflict; one preprint
Wellbeing / positive affect	Zhu; Aitken; Wang (control, action-taking, stay intentions)	Low to moderate	More consistent lift in positive affect and related workplace attitudes than in negative affect
Self-rated performance	Zhu (indirect); Wang (6-month self-rating); Kimura ($d = 0.31$); Crum (interpersonal self-rating)	Very low	No common metric; all self-rated; two waitlist or usual-practice controls; one preprint
Supervisor-rated performance	None	No evidence	Certainty cannot be rated
Transfer to Indian employees	None	Very low / no evidence	Zero eligible Indian trials

07

Discussion

PULL QUOTE

Zero Indian employee randomised trials of this skill. That is the gap, not a footnote.

What the number means

There is no pooled number. That is the first result. Anyone who quotes a single g for “workplace reappraisal training” from this paper is misquoting it.

What can be said without theatre is this. When employees are taught or prompted to change the meaning of a work event, or of the stress response itself, several independent teams have watched stress or negative affect move in the helpful direction, and several have watched self-rated performance move with it. The largest, longest, best-controlled contrast we have is small: $d = -0.13$ on stress at six months against an active control. Small and durable is more useful to a programme designer than large and unpublished.

Situation reappraisal — changing the story about the event — looks more useful than emotion reappraisal — trying to relabel the feeling. That finding repeats from Webb’s laboratory taxonomy into Zhu and Aitken’s workdays. If a coaching platform can only teach one sentence stem, teach the situation stem.

Positive affect is a quieter hero than stress. Zhu’s performance path ran through positive affect, not through the drop in negative affect. Aitken raised positive affect without lowering negative affect. If you only measure “how

stressed are you,” you will miss half the story. A worker can still be stressed and also more able to work.

Every performance number is a self-rating. That is not a detail. People who have just been taught a shiny mental skill will often rate themselves as better workers. Supervisors might not agree. Customers might not agree. Output logs might not agree. Until someone runs a trial with a boss’s rating, a peer rating, or an operational metric, “reappraisal improves performance” is a claim about self-appraisal of performance. The irony writes itself.

Limitations of the evidence

The set is small. The set is American and Japanese. The set is self-report. One anchor trial is still a preprint. Waitlist controls still pollute the older employee experiments. Attrition is real. Dose cannot be modelled. Job type cannot be modelled. Publication bias cannot be tested. This review itself was not double-screened and was not pre-registered. Those are not humble footnotes. They are the reason the certainty column says Low and Very Low.

A second limitation is conceptual leakage. Stress-is-enhancing mindset, situation reappraisal, emotion reappraisal, and cognitive restructuring of rigid work beliefs are related and not the same. Lumping them is how a sloppy meta-analysis gets born. This review kept them on separate shelves.

A third limitation is the India-shaped hole. Indian professionals are not missing from the world’s stress statistics. They are missing from this evidence base.

WHAT THIS MEANS

What this means for an Indian workplace programme

A 150-word box, in plain English:

Do not sell reappraisal as a cure. Sell it as a rep. The best available workplace trial says one short digital session can still show at six months: a small stress benefit and a better self-rating of the job. Daily prompts for three weeks can lift mood and, with it, the way people rate their own work. A claims officer in Nagpur gets a curt note from her manager. A WhatsApp prompt arrives in Marathi: “What else could this note mean?” Not “How should I feel?” Teach that situation stem first. She types one fairer line and goes back to the file. Add a body-rep first if you like, one physiological sigh, but do not call it the thought-rep. Do not print a pooled *g* on a sales slide. Run the missing Indian trial. Until then, treat United States early-education workers and Japanese electric-company staff as cousins, not copies.

Research gaps, naming the India gap

The India gap is not a rhetorical flourish. CTRI was searched. PubMed was searched. Scholar was searched. No eligible randomised trial of reappraisal or cognitive-restructuring training in Indian employees, with stress or performance as an outcome, survived screening. Indian workplace mental-health trials exist — meditation, breath practices, character-strengths coaching for rural health workers, digital mindfulness. They are not this skill.

That gap is operationally expensive. India has the workforce, the WhatsApp channel, the language requirement, and the dual-earner load that make a short digital reappraisal programme worth testing. It does not have the trial. A platform that already delivers countable reps in twenty-three languages is in a position to close the gap rather than cite other countries' effect sizes as if they were local law.

Other gaps sit beside it.

1. Supervisor-rated and operational performance. Someone has to ask the manager, or pull the ticket queue, or count the error rate.
2. Active-control replication of Wang outside the United States, with a pre-registered primary stress measure and a pre-registered primary performance measure.
3. Head-to-head tactics: situation reappraisal versus perspective-taking versus stress-response reappraisal versus acceptance, same dose, same job family.
4. Dose-finding. One 36-minute session versus fourteen days of two-minute prompts versus a weekly group for six weeks.
5. Language and culture of construal. A reappraisal that works in Californian early-education work may land as tone-deaf in a Chennai delivery team or a Lucknow public hospital. The skill is human. The sentences are local.
6. Harm and irony. Feinberg, Ford and Flynn (2020) showed in organisational experiments that reappraising guilt and shame can lift wellbeing and also loosen the brakes on counterproductive behaviour. A programme that only measures "I feel better" can miss "I cut a corner." Measure both.

How this sits against the three prior piles

Against Webb (2012): the laboratory effect of cognitive change is small-to-medium and tactic-sensitive. The workplace training literature is thinner, smaller in effect when the control is active, and still tactic-sensitive in the same direction. Transfer looks real. Magnitude looks modest.

Against Richardson and Rothstein (2008): mixed cognitive-behavioural occupational packages still look stronger than a stripped reappraisal module. That is not a failure of reappraisal. It is a reminder that a thought-rep is one tool. Sleep, workload, a decent manager and a fair shift pattern are not thought-reps.

Against Mehler (2024): emotional-competency training at work has a moderate controlled-trial effect on the competency itself. Reappraisal is one competency. This review asked a harder question — does training that competency change stress and job ratings? The honest answer is "sometimes, a little, on self-report, in a handful of countries."

08

FAQ

Q1 Does reappraisal training cut workplace stress?

One large United States field experiment found a small six-month reduction versus an active control ($d = -0.13$). A three-week prompt trial cut negative affect; its sister trial did not. A pooled number would be dishonest. Treat the skill as promising, not proven.

Q2 Does it raise performance ratings?

Self-ratings sometimes move. A Japanese programme found $d = 0.31$ on a 1–10 self-rating at three months. The large United States experiment found higher self-rated performance at six months. No supervisor-rated trial exists. Zero.

Q3 How many minutes does it take?

The range is wide. About 36 minutes plus a booster in the largest trial. Two short prompts a day for three weeks in the ecological-momentary trials. One 120-minute group plus a month of homework in Japan. Short and distributed both appear in positive studies.

Q4 Does it work for Indian professionals?

Unknown. Eligible Indian employee randomised trials of this skill: zero. Breath, meditation and strengths-coaching trials exist in India. They are not reappraisal-training trials. Do not import a United States d as local fact.

Q5 Is one kind of reappraisal better than another?

Two workplace prompt trials found that reappraising the situation beat reappraising the emotion. Laboratory work from 2012 said the same. If you teach one stem, teach “what else could this event mean?”

09

References

- Aitken, J. A., Zhu, Z., Baines, J. I., Kim, J., Kaplan, S. A., Dalal, R. S., Hassani, J., & Gibson, J. L. (2025). Emotion regulation at work: A micro-randomized trial comparing three cognitive reappraisal interventions. *Occupational Health Science*, 9(4), 991–1021. <https://doi.org/10.1007/s41542-025-00232-3>
- Bosshard, M., & Gomez, P. (2024). Effectiveness of stress arousal reappraisal and stress-is-enhancing mindset interventions on task performance outcomes: A meta-analysis of randomized controlled trials. *Scientific Reports*, 14, 7923. <https://doi.org/10.1038/s41598-024-58408-w>
- Crum, A. J., Santoro, E., Handley-Miner, I., Smith, E. N., Evans, K., Moraveji, N., Achor, S., & Salovey, P. (2023). Evaluation of the “rethink stress” mindset intervention: A metacognitive approach to changing mindsets. *Journal of Experimental Psychology: General*, 152(9), 2603–2622. <https://doi.org/10.1037/xge0001396>
- Feinberg, M., Ford, B. Q., & Flynn, F. J. (2020). Rethinking reappraisal: The double-edged sword of regulating negative emotions in the workplace. *Organizational Behavior and Human Decision Processes*, 161, 193–208. <https://doi.org/10.1016/j.obhdp.2020.03.005>
- Gallup. (2026). *State of the Global Workplace: India country-level data* (data collected 2025). <https://www.gallup.com/workplace/705650/state-global-workplace-india-country-level-data.aspx>
- Imamura, K., Kawakami, N., Furukawa, T. A., Matsuyama, Y., Shimazu, A., Umanodan, R., Kawakami, S., & Kasai, K. (2015). Effects of an internet-based cognitive behavioral therapy intervention on improving work engagement and other work-related outcomes. *Journal of Occupational and Environmental Medicine*, 57(5), 578–584. <https://doi.org/10.1097/JOM.0000000000000411>
- Kimura, R., Mori, M., Tajima, M., Somemura, H., Sasaki, N., Yamamoto, M., Nakamura, S., Okanoya, J., Ito, Y., Otsubo, T., & Tanaka, K. (2015). Effect of a brief training program based on cognitive behavioral therapy in improving work performance: A randomized controlled trial. *Journal of Occupational Health*, 57(2), 169–178. <https://doi.org/10.1539/joh.14-0208-OA>
- Mehler, M., Balint, E., Gralla, M., et al. (2024). Training emotional competencies at the workplace: A systematic review and metaanalysis. *BMC Psychology*, 12, 718. <https://doi.org/10.1186/s40359-024-02198-3>
- Ogbuanya, T. C., Eseadi, C., Orji, C. T., Ohanu, I. B., Bakare, J., & Ede, M. O. (2017). Effects of rational emotive behavior coaching on occupational stress and work ability among electronics workshop instructors in Nigeria. *Medicine*, 96(19), e6891. <https://doi.org/10.1097/MD.00000000000006891>
- Richardson, K. M., & Rothstein, H. R. (2008). Effects of occupational stress management intervention programs: A meta-analysis. *Journal of Occupational Health Psychology*, 13(1), 69–93. <https://doi.org/10.1037/1076-8998.13.1.69>
- Wang, K., Goldenberg, A., Lerner, J. S., & Gross, J. J. (2025). Enhancing workplace well-being through reappraisal in a nationwide field experiment. PsyArXiv / OSF preprint. <https://doi.org/10.31234/osf.io/scwxt>
Harvard Kennedy School listing: <https://www.hks.harvard.edu/publications/enhancing-workplace-well-being-through-reappraisal-nationwide-field-experiment>
- Webb, T. L., Miles, E., & Sheeran, P. (2012). Dealing with feeling: A meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. *Psychological Bulletin*, 138(4), 775–808. <https://doi.org/10.1037/a0027600>
- Willert, M. V., Thulstrup, A. M., Hertz, J., & Bonde, J. P. (2009). Changes in stress and coping from a randomized controlled trial of a three-month stress management intervention. *Scandinavian Journal of Work, Environment & Health*, 35(2), 145–152. <https://doi.org/10.5271/sjweh.1313>

Wirtz, P. H., et al. (2024). Beneficial effects of a cognitive-behavioral occupational stress management group training: The mediating role of changing cognitions. *Frontiers in Psychology*, 14, 1232172. <https://doi.org/10.3389/fpsyg.2023.1232172>

Yeung, D. Y., & Wong, S. (2020). Effects of cognitive reappraisal and expressive suppression on daily work-related outcomes: Comparison between younger and older Chinese workers. *International Journal of Psychology*, 55(6), 983–994. <https://doi.org/10.1002/ijop.12661>

Zhu, Z., Aitken, J. A., Kim, J., Baines, J. I., Kaplan, S. A., Dalal, R. S., & Hassani, J. (2025). Cognitive reappraisal emotion regulation interventions in the workplace and their impact on job performance: An ecological momentary intervention approach. *Journal of Occupational and Organizational Psychology*, 98(2), e70020. <https://doi.org/10.1111/joop.70020>

About the author

ABOUT THE AUTHOR

Dr Atul Aswani; Mumbai Psychiatrist and trained as a Results Coach

Atul Aswani is a Mumbai Psychiatrist and trained as a Results Coach in Mumbai. He builds EmotionApp, a non-clinical emotional-fitness platform for Indian professionals: countable daily reps, an AI coach with human hand-off, WhatsApp-first delivery, twenty-three Indian languages, India-resident data. He writes evidence reviews so a working adult can tell a skill from a slogan.

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NOTE

EmotionApp is a non-clinical emotional-fitness coaching platform. This paper describes practices, techniques and coaching. It is not therapy, treatment, diagnosis or medical advice.

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