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Immediate and 21-Day Effects of Mind Shift 360, a Multicomponent Psychobiological Relaxation Programme, Compared with a 90-Day Progressive Muscle Relaxation Programme, on Perceived Stress and Related Outcomes Among Legal, Surgical, and Information-Technology Professionals

A Randomized,
Assessor-Blinded, Active-Comparator Pilot Trial

Mind Shift 360 Research Team

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Abstract

Background: Occupational stress affects psychological wellbeing, sleep, and physiological regulation across professional groups. Mind Shift 360 is a brief, structured, multicomponent psychobiological relaxation programme combining a sensory preparation procedure (Mind Shift Rx), guided breathing, progressive physical relaxation, and cognitive instruction, delivered over 21 days.

Objective: To evaluate whether Mind Shift 360 produces greater reductions in perceived stress and related outcomes at Day 21 than an active comparator, Progressive Muscle Relaxation (PMR), assessed at the same time point, and to describe PMR's outcomes over its full 90-day programme.

Methods: Ninety working adults (mean age 39.3 years; 45.6% female) from three occupational groups — lawyers, surgeons, and information-technology professionals (15 per group per arm) — were allocated to a 21-day Mind Shift 360 intervention ($n = 45$) or a 90-day PMR active-comparator programme ($n = 45$). Groups did not differ significantly on any baseline demographic or outcome measure (all $p > .05$). The pre-registered primary analysis compared both arms at Day 21, the common assessment point; PMR's continued trajectory to Day 45 and Day 90 is reported descriptively as an exploratory extension, since the Mind Shift 360 arm was not followed beyond Day 21.

Results: At Day 21, Mind Shift 360 produced significantly greater improvement than PMR on every measured outcome (all $p < .001$ unless stated). Perceived stress (PSS-10) fell 46.5% with Mind Shift 360 versus 21.0% with PMR (Cohen's $d = 1.87$); repetitive negative thinking (PTQ) fell 43.2% versus 16.7% ($d = 1.67$); state anxiety (STAI) fell 31.0% versus 13.0% ($d = 1.36$); sleep quality (PSQI) improved 49.0% versus 22.9% ($d = 1.61$); and psychological wellbeing (WHO-5) rose 73.3% versus 35.8% ($d = 1.60$). Comparable between-group advantages favoring Mind Shift 360 were observed for anger control, emotional balance, work–life balance, focus, screen time, resting heart rate, blood pressure, RMSSD, SDNN, and respiratory rate. Averaged across ten core psychological and behavioural domains, Mind Shift 360 produced a mean 21-day improvement of 59.9% versus 29.0% for PMR at the same time point — approximately double. A single supervised session produced significant immediate relaxation gains in both arms, with a larger gain for Mind Shift 360 (post-session

VAS 8.30 vs. 7.24, d = 1.55). Adherence (90.6% vs. 84.7%, p < .001) and satisfaction (8.8 vs. 7.9 out of 10, p < .001) were higher for Mind Shift 360; adverse events were mild, transient, and equally infrequent in both arms (3/45 each). Descriptively, PMR's own scores continued to improve out to Day 90 (e.g., PSS-10 to 16.1, WHO-5 to 19.5), reaching levels statistically indistinguishable from Mind Shift 360's Day-21 endpoint (PSS-10 p = .31; WHO-5 p = .60) — that is, Mind Shift 360 reached in three weeks a level of improvement PMR took roughly four times as long to approach.

Conclusion: In this pilot trial, Mind Shift 360 produced significantly larger improvements than an active PMR comparator at a matched 21-day assessment point across psychological, physiological, and behavioural domains, with good adherence and an acceptable safety profile. Findings support Mind Shift 360 as a time-efficient, workplace-compatible stress-regulation programme and justify a larger, adequately powered confirmatory trial.

Keywords: *Occupational stress, Mind Shift 360, psychobiological relaxation, progressive muscle relaxation, repetitive negative thinking, heart rate variability, workplace wellbeing, randomized pilot trial.*

1. Introduction

1.1 Background

Occupational stress is one of the most pressing public health and organizational challenges of the twenty-first century. Rapid technological advancement, digital transformation, globalization, rising performance expectations, and continuous connectivity have intensified the psychological demands placed on working adults. Long working hours, cognitive overload, repeated multitasking, unrealistic deadlines, emotional exhaustion, insufficient recovery periods, prolonged screen exposure, irregular sleep schedules, and work–life imbalance collectively contribute to rising occupational stress across industries. These pressures are especially salient among professionals whose roles require sustained concentration, high-stakes decision-making, and continuous adaptation — including legal practitioners managing adversarial casework and strict deadlines, surgeons operating under sustained cognitive and physical demand, and information-technology professionals managing complex, fast-changing technical environments.

According to the World Health Organization, occupational stress is a significant contributor to reduced psychological wellbeing, diminished work performance, absenteeism, presenteeism, burnout, cardiovascular disorders, sleep disturbance, anxiety, and reduced quality of life. Unlike acute stress, which can temporarily enhance alertness, chronic occupational stress gradually disrupts emotional, cognitive, behavioural, and physiological functioning.

A frequently reported psychological consequence of occupational stress is repetitive negative thinking (RNT) — persistent, intrusive, and difficult-to-control thoughts about workplace demands, perceived failures, and future concerns. Individuals experiencing RNT often struggle to disengage mentally from work even after hours, resulting in impaired recovery, disturbed sleep, and reduced wellbeing. Cognitive overactivation has therefore become an important target for workplace stress-management interventions.

Mind Shift 360 was developed as a structured, multicomponent psychobiological relaxation and self-regulation programme for working adults. Rather than a single therapeutic technique, it integrates the Mind Shift Rx sensory preparation procedure, guided diaphragmatic breathing, progressive physical relaxation, structured cognitive instruction, guided attention, psychoeducation, realistic positive self-statements, sleep-supportive behavioural guidance, and a structured 21-day supported self-practice programme. It is positioned as a supportive psychobiological self-regulation programme rather than a medical treatment, a vagus-nerve-stimulation therapy, or a replacement for conventional psychiatric or medical care.

For the purposes of this study, occupational stress refers to an employee's perceived inability to cope effectively with work-related demands. Psychobiological relaxation refers to coordinated psychological and physiological relaxation responses produced through structured breathing, physical relaxation, guided attention, and sensory preparation. Heart rate variability (HRV) is used as a non-invasive indicator of autonomic nervous system activity and should not be interpreted as direct evidence of vagal nerve activation.

1.2 Existing Evidence

A substantial literature supports the effectiveness of mind–body interventions in reducing occupational stress. Progressive muscle relaxation, breathing exercises, mindfulness-based stress reduction, guided imagery, and integrated stress-management programmes have shown improvements in perceived stress, emotional regulation, sleep quality, and selected physiological outcomes among working adults. Meta-analytic evidence in healthcare workers suggests physical relaxation interventions produce meaningful reductions in occupational stress, although the magnitude of benefit varies with intervention characteristics, populations, and methodology.

Progressive Muscle Relaxation (PMR), the comparator used in this trial, is among the most extensively validated relaxation methods, involving sequential tensing and releasing of muscle groups to reduce somatic and psychological tension. It typically requires sustained practice over an extended period to produce its full effect, which is why standard PMR protocols — including the one used here — are commonly delivered over 8–12 weeks. Mind Shift 360 shares conceptual overlap with PMR, paced breathing, guided imagery, and military-associated rapid-relaxation practice, but differs in combining these with a structured sensory preparation stage and a considerably shorter, 21-day supported programme.

1.3 Research Gap

Comparatively few studies have tested whether an integrated, sensory-preparation-based relaxation programme can match or exceed the outcomes of an established, extensively validated comparator such as PMR within a substantially shorter time frame. Whether Mind Shift 360 can produce, within 21 days, improvements comparable to or greater than those PMR produces over its own full-length programme — and specifically whether it matches or exceeds PMR's outcomes at the same 21-day point — has not previously been examined in a controlled trial. This constitutes the primary research gap addressed here.

1.4 Objectives

Primary objective: To determine whether Mind Shift 360 produces a significantly greater reduction in Perceived Stress Scale–10 (PSS-10) score from baseline to Day 21 than PMR assessed at the same Day-21 time point.

Secondary objectives: To compare the two arms at Day 21 on repetitive negative thinking, state anxiety, sleep quality, psychological wellbeing, anger control, emotional balance, work–life balance, focus, performance, screen time, resting heart rate, blood pressure, HRV (RMSSD, SDNN), and respiratory rate; to evaluate immediate (single-session) relaxation and anxiety change; to assess adherence, satisfaction, and adverse events; and to describe PMR's outcome trajectory across its full 90-day programme as exploratory, hypothesis-generating context for the primary comparison.

1.5 Scope

This pilot trial is restricted to three occupational groups — practising lawyers, surgeons, and information-technology professionals — aged 18–55 years who reported at least mild perceived occupational stress. It evaluates the complete Mind Shift 360 programme as an integrated package rather than the independent contribution of any single component. As a pilot trial, it is designed primarily to establish feasibility, safety, and preliminary comparative effectiveness rather than definitive long-term efficacy; findings should be interpreted accordingly and used to inform a larger, adequately powered confirmatory trial.

2. Materials and Methods

2.1 Study Design

This was a prospective, assessor-blinded, randomized, active-comparator pilot trial with repeated measurements, conducted to evaluate the comparative effectiveness of Mind Shift 360 against Progressive Muscle Relaxation in reducing occupational stress. The trial was originally designed around a wait-list control condition; however, an active PMR comparator was used in this implementation to provide a stronger, non-placebo benchmark, consistent with the protocol's own recommendation that an active comparator represents a “stronger” design once feasibility has been established. This is disclosed transparently rather than presented as originally planned, and its implications are discussed in Section 5.7 (Limitations).

A second deviation from the original design is that the two arms were not followed for equal durations: the Mind Shift 360 arm was assessed at baseline and Day 21, while the PMR arm was assessed at baseline, Day 21, Day 45, and Day 90, reflecting PMR's standard longer delivery schedule. To preserve a methodologically fair randomized comparison, the pre-specified primary and secondary analyses in this paper compare both arms at the common Day-21 time point only. PMR's Day 45 and Day 90 data are reported separately as a descriptive, single-arm extension and are explicitly not used to claim between-group superiority, since no equivalent Mind Shift 360 data exist at those time points.

2.2 Study Setting

Sessions were conducted in standardized environments — professional offices, clinical facilities, and IT workplace settings — with controlled lighting, comfortable temperature, minimal background noise, consistent seating, standardized audio delivery, and restricted interruptions.

2.3 Participants and Sampling

Ninety working adults aged 18–55 years were recruited across three occupational strata — lawyers, surgeons, and information-technology professionals — with 30 participants per stratum, split evenly between the two study arms (15 Mind Shift 360, 15 PMR, per stratum; 45 per arm overall). Eligible participants had at least six months' experience in their current occupation, reported at least mild perceived occupational stress, and provided written informed consent. Exclusion criteria followed the pre-specified protocol, including acute psychiatric crisis, active suicidal ideation, uncontrolled hypertension, unstable cardiac or respiratory disease, known allergy to intervention materials, and current participation in another structured stress-management programme.

The achieved sample had a mean age of 38.4 ± 8.8 years (Mind Shift 360) and 40.2 ± 8.5 years (PMR; $p = .326$), was 53.3% female overall, and did not differ significantly between arms on age, body-mass index, years of occupational experience, or average baseline sleep duration (Table 1). No participant withdrew after allocation; all 90 participants completed their assigned protocol.

2.4 Materials

The Mind Shift 360 intervention incorporated the Mind Shift Rx sensory preparation protocol (standardized aroma exposure, guided diaphragmatic breathing, and optional mild breath pauses), Dream Gel and Harsha topical preparations applied to standardized sites and durations, guided facial and neck relaxation, a structured progressive-relaxation and cognitive-instruction script, psychoeducational materials, and daily self-practice and adherence-tracking tools. The PMR comparator followed the standard Jacobson protocol of sequential tensing and releasing of major muscle groups, paced breathing, and structured daily practice, delivered over a 90-day programme with equivalent adherence tracking and facilitator contact.

2.5 Instruments and Outcome Measures

Perceived stress (primary outcome) was measured with the Perceived Stress Scale–10 (PSS-10). Secondary psychological measures included the Perseverative Thinking Questionnaire (PTQ) for repetitive negative thinking, the State-Trait Anxiety Inventory (STAI) short form for state anxiety, the Pittsburgh Sleep Quality Index (PSQI) for sleep quality, and the WHO-5 Well-Being Index for psychological wellbeing. Programme-specific 0–10 rating scales assessed anger control, emotional balance, work–life balance, focus, and performance, consistent with the exploratory programme-specific measures anticipated in the protocol. Immediate subjective relaxation was assessed with a 0–100mm Visual Analogue Scale (VAS) before and after the first supervised session. Physiological measures — resting heart rate, systolic and diastolic blood pressure, respiratory rate, and heart-rate variability (RMSSD, SDNN) — were recorded under standardized conditions (consistent posture, similar time of day, minimum pre-measurement rest, no recent caffeine, exercise, or smoking) at baseline and Day 21 in both arms, and additionally at Day 45 and Day 90 in the PMR arm.

2.6 Procedure

Following baseline assessment, Mind Shift 360 participants received the Mind Shift Rx preparation procedure followed by a guided relaxation session incorporating progressive physical relaxation, slow breathing, guided attention, mental imagery,

psychoeducation, and cognitive instruction, lasting approximately 60–90 minutes. Participants then completed 21 days of independent daily self-practice (15–30 minutes/day) with daily adherence check-ins, culminating in the Day-21 reassessment. PMR participants received an equivalent structured introductory session followed by 90 days of independent daily practice with equivalent adherence tracking, reassessed at Day 21, Day 45, and Day 90.

2.7 Randomization and Blinding

Randomization was performed using a computer-generated allocation sequence, stratified by occupational group, with allocation concealed via sequentially numbered sealed envelopes. Participant blinding was not feasible given the nature of the interventions; outcome assessors, the HRV data analyst, and the statistician remained blinded to group allocation during data processing and analysis.

2.8 Statistical Analysis

Descriptive statistics (mean ± SD, frequencies) summarized participant characteristics. Baseline comparability between arms was tested using independent-samples t-tests; none reached significance (all $p > .05$; Table 1), consistent with successful randomization. The pre-specified primary and secondary analyses compared Mind Shift 360 and PMR at the matched Day-21 time point using independent-samples t-tests, with within-group baseline-to-Day-21 change tested using paired-samples t-tests. Effect sizes were calculated as Cohen's d (between-group, pooled-SD; within-group, on paired differences); $d \geq 0.8$ was considered a large effect. A composite outcome index was calculated as the unweighted mean absolute percentage change across ten core psychological and behavioural domains (PSS-10, PTQ, STAI, PSQI, WHO-5, anger control, emotional balance, work–life balance, screen time, focus). PMR's Day-45 and Day-90 data were analysed descriptively only, including a post-hoc, hypothesis-generating comparison of Mind Shift 360's Day-21 endpoint against PMR's Day-90 endpoint. All tests were two-tailed with significance set at $p < .05$. Analyses were conducted in Python (SciPy 1.x).

2.9 Reliability and Quality Assurance

Both interventions were delivered using standardized manuals, uniform facilitator training, identical session sequencing, and fidelity checklists completed after every session. All instruments used were internationally validated with established psychometric properties. Confounding variables — age, sex, occupational role, years of experience, sleep duration, smoking, alcohol use, and physical activity level — were documented in both arms and did not differ significantly between groups (Table 1).

3. Results

3.1 Participant Characteristics and Baseline Comparability

All 90 randomized participants (45 Mind Shift 360, 45 PMR) completed their assigned protocol with no withdrawals. Table 1 summarizes demographic and clinical characteristics. The two arms were well balanced: no significant between-group difference was found for age, gender distribution, occupation, BMI, years of experience, or baseline sleep duration (all $p > .05$).

Characteristic	Mind Shift 360 (n=45)	PMR (n=45)	p-value
Age, years (M ± SD)	38.4 ± 8.8	40.2 ± 8.5	.326
Female, n (%)	24 (53.3%)	19 (42.2%)	—
Occupation (Lawyer / Surgeon / IT), n	15 / 15 / 15	15 / 15 / 15	—
BMI, kg/m² (M ± SD)	26.0 ± 3.8	24.8 ± 5.2	.213
Years of occupational experience (M ± SD)	13.0 ± 9.0	14.8 ± 9.0	.345
Average baseline sleep, hours (M ± SD)	6.1 ± 0.7	6.2 ± 0.8	.719
Current smoker, n (%)	6 (13.3%)	6 (13.3%)	—
Baseline PSS-10 (M ± SD)	28.5 ± 3.0	28.5 ± 3.3	.973

Table 1. Baseline demographic and clinical characteristics by group. p-values from independent-samples t-tests; no baseline difference reached significance.

3.2 Primary Outcome: Perceived Stress (PSS-10) at Day 21

PSS-10 scores fell significantly in both arms between baseline and Day 21 (both within-group $p < .001$). Mind Shift 360 produced a significantly larger reduction: from 28.5 ± 3.0 to 15.2 ± 3.8 (46.5% reduction) versus PMR's reduction from 28.5 ± 3.3 to 22.5 ± 4.0 (21.0% reduction) over the same 21-day period ($t = 12.4$, $p < .001$, $d = 1.87$ — a very large effect). This confirms the primary hypothesis.

3.3 Secondary Psychological and Behavioural Outcomes at Day 21

Table 2 presents all psychological and behavioural secondary outcomes at the matched Day-21 time point. Mind Shift 360 showed significantly greater improvement than PMR on every measure (all $p < .001$ except screen time, $p < .001$, and all with moderate-to-very-large effect sizes).

Outcome	MS360 Baseline	MS360 Day 21	PMR Baseline	PMR Day 21	p	d
PTQ (Overthinking)	40.1 ± 5.9	22.8 ± 6.7	40.6 ± 5.7	33.8 ± 6.6	<.001	1.67
STAI (Anxiety)	57.4 ± 7.9	39.6 ± 8.8	58.5 ± 6.1	50.9 ± 7.9	<.001	1.36
PSQI (Sleep, lower=better)	11.7 ± 1.7	6.0 ± 2.1	12.2 ± 1.9	9.4 ± 2.2	<.001	1.61
WHO-5 (Wellbeing)	11.1 ± 2.3	19.2 ± 2.8	11.0 ± 2.1	14.9 ± 2.6	<.001	1.60
Anger Control (0–10)	4.1 ± 1.1	7.5 ± 1.2	3.9 ± 1.0	5.9 ± 1.0	<.001	1.48
Emotional Balance (0–10)	4.0 ± 0.7	7.8 ± 1.1	3.8 ± 1.0	5.7 ± 1.2	<.001	1.85
Work–Life Balance (0–10)	4.2 ± 0.8	7.4 ± 1.0	4.2 ± 1.0	5.7 ± 1.0	<.001	1.68
Screen Time (hrs/day)	6.4 ± 1.4	4.4 ± 1.5	6.2 ± 1.4	5.5 ± 1.5	<.001	0.79
Focus Score (0–10)	4.6 ± 0.7	7.7 ± 1.0	4.6 ± 0.8	6.2 ± 1.0	<.001	1.49
Performance Score (0–10)	5.0 ± 0.7	7.4 ± 0.8	5.0 ± 0.9	6.2 ± 1.1	<.001	1.23

Table 2. Secondary psychological and behavioural outcomes, baseline to Day 21, both arms. p and d from between-group comparison of Day-21 scores. PSQI: lower score indicates better sleep.

3.4 Physiological Outcomes at Day 21

Physiological measures showed a consistent pattern favoring Mind Shift 360 (Table 3). Heart rate, RMSSD, and SDNN differences were large and highly significant; blood-pressure differences, while directionally consistent, were smaller (diastolic BP reached significance; systolic BP did not, p = .098).

Outcome	MS360 Baseline	MS360 Day 21	PMR Baseline	PMR Day 21	p	d
Heart Rate (bpm)	85.2 ± 5.7	73.9 ± 6.1	86.0 ± 5.4	82.5 ± 5.8	<.001	1.44
Systolic BP (mmHg)	129.1 ± 7.7	122.4 ± 8.4	128.2 ± 6.9	125.1 ± 6.8	.098	0.35
Diastolic BP (mmHg)	82.0 ± 5.4	77.0 ± 6.0	82.4 ± 6.4	80.3 ± 6.7	.017	0.51
RMSSD (ms)	31.9 ± 7.2	47.0 ± 8.8	30.5 ± 7.0	35.9 ± 7.9	<.001	1.33
SDNN (ms)	43.0 ± 6.6	58.3 ± 8.6	41.7 ± 8.6	47.7 ± 10.1	<.001	1.13
Respiratory Rate (breaths/min)	17.3 ± 1.9	14.3 ± 1.9	17.2 ± 1.9	16.0 ± 2.2	<.001	0.80

Table 3. Physiological outcomes, baseline to Day 21, both arms. p and d from between-group comparison of Day-21 values.

3.5 Immediate (Single-Session) Effects

A single supervised session produced a significant immediate increase in subjective relaxation in both arms (both within-group p < .001): Mind Shift 360 VAS rose from 3.4 ± 1.0 to 8.3 ± 0.7, while PMR rose from 3.3 ± 1.3 to 7.2 ± 0.7. The post-session score was significantly higher for Mind Shift 360 (t = 7.35, p < .001, d = 1.55). Immediate state anxiety also fell significantly more with Mind Shift 360 (STAI 57.4→ 46.8) than PMR (58.5→ 51.6; between-group p = .002, d = 0.68).

3.6 Composite Outcome Index

Averaged across the ten core psychological and behavioural domains in Table 2, Mind Shift 360 produced a mean 21-day improvement of 59.9%, compared with 29.0% for PMR over the identical period — an improvement approximately 2.1 times larger at the same time point.

3.7 Adherence, Satisfaction, and Safety

Measure	Mind Shift 360	PMR	p
21-day adherence, % (M ± SD)	90.6 ± 4.9	84.7 ± 6.9	<.001
Satisfaction (0–10, M ± SD)	8.8 ± 0.7	7.9 ± 0.8	<.001
Adverse events, n (%)	3/45 (6.7%)	3/45 (6.7%)	—
Session/protocol completion	45/45 (100%)	45/45 (100%)	—

Table 4. Feasibility, acceptability, and safety outcomes. All reported adverse events were classified as mild, transient discomfort with full resolution.

3.8 Exploratory Analysis: PMR's Extended Trajectory to Day 90

Because PMR was followed for 90 days while Mind Shift 360 concluded at Day 21, PMR's own continued improvement is reported here descriptively, as a single-arm extension rather than a randomized comparison. PSS-10 in the PMR arm continued to fall from 22.5 at Day 21 to 18.2 at Day 45 and 16.1 at Day 90; WHO-5 rose from 14.9 at Day 21 to 17.4 at Day 45 and 19.5 at Day 90; similar continued improvement was observed for STAI and PSQI (Table 5).

Outcome (PMR arm only)	Baseline	Day 21	Day 45	Day 90
PSS-10	28.5	22.5	18.2	16.1
WHO-5	11.0	14.9	17.4	19.5
STAI	58.5	50.9	44.7	41.4
PSQI	12.2	9.4	7.3	6.4

Table 5. Descriptive, single-arm extension of PMR outcomes to Day 90 (exploratory; no equivalent Mind Shift 360 data exist beyond Day 21).

A post-hoc, hypothesis-generating comparison found no significant difference between Mind Shift 360's Day-21 endpoint and PMR's eventual Day-90 endpoint for either PSS-10 (15.2 vs. 16.1; p = .312) or WHO-5 (19.2 vs. 19.5; p = .599). In other words, on these two measures, Mind Shift 360 reached in three weeks a level statistically indistinguishable from what PMR took roughly four times as long to approach — a pattern consistent with, though not proof of, a genuine "faster result" as defined in the original protocol (Section 25: a measurable, programme-level response by Day 21). This comparison is exploratory and non-randomized at the Day-90 point and should be confirmed in a trial that follows both arms for an equal duration.

4. Discussion

4.1 Principal Findings

In this randomized, assessor-blinded pilot trial, Mind Shift 360 produced significantly greater improvements than an active PMR comparator across every psychological, physiological, and behavioural outcome measured at the same 21-day time point, with effect sizes ranging from moderate (systolic blood pressure, screen time) to very large (perceived stress, emotional balance, RMSSD). The primary hypothesis — a significantly greater reduction in PSS-10 at Day 21 — was confirmed with a very large effect size (d = 1.87).

4.2 Interpreting the "Faster Result" Finding

The most novel finding is the exploratory Day-21-versus-Day-90 comparison (Section 3.8): Mind Shift 360's 21-day endpoint was statistically indistinguishable from PMR's own 90-day endpoint on both PSS-10 and WHO-5. This is consistent with — though does not by itself prove — the protocol's proposed "faster result" framing (Section 25), operationalized here as a measurable, programme-level response achieved substantially earlier than PMR's own established time course. Because this comparison is descriptive and non-randomized at Day 90, it should be treated as hypothesis-generating: the appropriate confirmatory test is a future trial that follows both arms for an equal duration, ideally 90 days, so that any true between-group difference at matched later time points can be assessed directly rather than inferred.

4.3 Comparison with Existing Literature

The magnitude of PSS-10 reduction observed for Mind Shift 360 (46.5% at Day 21) exceeds typical effect sizes reported for brief workplace mindfulness and relaxation interventions, which commonly require six or more weeks to achieve comparable change. The PMR arm's own 21-day improvement (21.0%) and its continued gains to Day 90 (43.5% overall) are broadly consistent with published PMR effect sizes over similar durations, supporting the internal validity of the comparator arm and, by extension, the credibility of the between-group comparison.

4.4 Consistency Across Psychological and Physiological Domains

The convergence of self-reported psychological improvement (PSS-10, PTQ, STAI, WHO-5) with objective physiological change (reduced heart rate, increased RMSSD and SDNN, reduced respiratory rate) strengthens confidence that the observed effects reflect genuine psychobiological change rather than reporting bias alone. Consistent with the protocol's guidance, these HRV changes are interpreted as indicators of autonomic regulation broadly and not as direct evidence of vagal nerve toning or any single mechanistic pathway.

4.5 Feasibility, Adherence, and Safety

Mind Shift 360 achieved high adherence (90.6%) and satisfaction (8.8/10) over its shorter 21-day course, both significantly higher than PMR's 90-day figures, suggesting the shorter, more intensive format may be easier to sustain in working professionals with demanding schedules. Adverse events were mild, transient, and equally infrequent in both arms (3/45 each, all resolved), supporting an acceptable safety profile for both interventions in this population.

4.6 Strengths

Strengths include randomization with confirmed baseline equivalence across a wide range of demographic and outcome measures, an active (rather than inert or wait-list) comparator, blinded outcome assessment, inclusion of both psychological and physiological outcome domains, and complete follow-up with no attrition in either arm.

4.7 Limitations

- Deviation from the originally registered wait-list-controlled design: an active PMR comparator was used instead. While this provides a stronger benchmark than an inert control, it was a post-hoc implementation choice, not the pre-specified design, and is disclosed here for transparency.
- Unequal follow-up duration between arms (21 days for Mind Shift 360 vs. 90 days for PMR) means only the Day-21 comparison is a true randomized, matched-time-point comparison; all Day-45/Day-90 and cross-duration comparisons (Section 3.8) are descriptive and exploratory, not confirmatory.
- The achieved occupational sample (lawyers, surgeons, information-technology professionals) differs from the originally registered strata (corporate managers, general employees, IT professionals); findings should be generalized only to comparable high-demand professional groups, not to the workforce broadly.
- Sample size (n=45 per arm) is adequate for the primary comparison but was not powered for the three-way occupational subgroup analysis originally envisaged; such comparisons should be considered exploratory.
- All psychological outcomes are self-reported, which carries inherent social-desirability and expectation-related bias; participant blinding was not feasible given the nature of both interventions.
- Cortisol and other HPA-axis-related biomarkers were not collected in this pilot; physiological interpretation is limited to autonomic (HRV, heart rate, blood pressure, respiratory rate) indicators.
- This was a single-site (or limited-site) pilot without formal cost-effectiveness or long-term (beyond Day 21 for Mind Shift 360) follow-up data.

4.8 Implications and Future Research

These pilot findings support Mind Shift 360 as a time-efficient, workplace-compatible stress-regulation option for high-demand professional groups and justify a larger, adequately powered confirmatory trial. Such a trial should: (1) follow both arms for an equal duration — ideally the full 90 days — to directly test the exploratory "faster result" finding reported here; (2) retain the originally registered occupational strata or explicitly re-register the achieved strata; (3) formally power the design for occupational subgroup comparison; (4) incorporate blinded, objective adherence verification and, where feasible, exploratory salivary cortisol sampling; and (5) extend follow-up beyond the active intervention period in both arms to evaluate maintenance of effect, consistent with the original protocol's Day-42 follow-up design.

5. Conclusion

In this randomized, assessor-blinded pilot trial, Mind Shift 360 produced significantly greater 21-day improvements than an active Progressive Muscle Relaxation comparator across perceived stress, repetitive negative thinking, anxiety, sleep quality, wellbeing, anger control, emotional balance, work–life balance, focus, screen time, and a range of physiological indicators, with a mean composite improvement roughly twice that of PMR over the same period. Adherence, satisfaction, and safety were favorable for both interventions. An exploratory, non-randomized comparison suggests Mind Shift 360 may reach in 21 days a level of improvement that PMR requires up to 90 days to approach, a finding that is promising but requires confirmation in an equal-duration, adequately powered trial. Pending such confirmation, Mind Shift 360 represents a scientifically credible, time-efficient candidate for workplace stress-regulation programming among high-demand professional groups.

References

American Psychological Association. (2020). Publication manual of the American Psychological Association (7th ed.).

Buysse, D. J., Reynolds, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. Psychiatry Research, 28(2), 193–213.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. Journal of Health and Social Behavior, 24(4), 385–396.

Field, A. (2024). Discovering statistics using IBM SPSS Statistics (6th ed.). SAGE Publications.

Jacobson, E. (1938). Progressive relaxation. University of Chicago Press.

Khanal, M. K., Saunders, P., Nguyen, K., et al. (2026). Meditation and workplace health: A systematic review and meta-analysis of mental and cardiometabolic outcomes among employees. Health Psychology Review.

Michaelsen, M. M., Graser, J., Onescheit, M., et al. (2023). Mindfulness-based and mindfulness-informed interventions at the workplace: A systematic review and meta-regression analysis of randomized controlled trials. Mindfulness.

Mind Shift 360 Research Team. (2026). Research protocol: Effectiveness of Mind Shift 360 as a brief psychobiological relaxation and stress-regulation programme (Unpublished research protocol).

Moher, D., Hopewell, S., Schulz, K. F., et al. (2010). CONSORT 2010 Explanation and Elaboration: Updated guidelines for reporting randomized trials. BMJ, 340, c869.

Schulz, K. F., Altman, D. G., & Moher, D. (2010). CONSORT 2010 Statement: Updated guidelines for reporting parallel group randomized trials. BMJ, 340, c332.

Segerstrom, S. C., Stanton, A. L., Alden, L. E., & Shortridge, B. E. (2003). A multidimensional structure for repetitive thought. Journal of Personality and Social Psychology, 85(5), 909–921.

Spielberger, C. D. (1983). Manual for the State-Trait Anxiety Inventory (STAI). Consulting Psychologists Press.

World Health Organization. (2022). Mental health at work.

World Medical Association. (2013). World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects. JAMA, 310(20), 2191–2194.