

NEXT-DAY MOOD IMPROVEMENT AFTER ASYNCHRONOUS TEXT-BASED COACHING ON A MOBILE MENTAL HEALTH PLATFORM IN SINGAPORE AND MALAYSIA

RETROSPECTIVE OBSERVATIONAL STUDY

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Abstract

Background. Peer-reviewed evidence on digital mental health platforms in Southeast Asia is sparse, and most evaluations use multi-week clinical scales rather than proximal mood. We examined whether ≥30 minutes of asynchronous coaching on a given day was associated with positive next-day mood change.

Methods. Retrospective observational analysis of deidentified data from the ThoughtFull mobile platform, April 2021–March 2025, covering corporate employees in Singapore and Malaysia. Eligible day-pairs had mood ratings on both days, ≥30 minutes of coach–user messaging on day 1, and negative day-1 mood. Mean mood change was tested with a one-sided one-sample *t*-test; Wilcoxon signed-rank was used for robustness. Per-user analysis was the inferential primary.

Results. Across 598 day-pairs from 278 users, mean mood change was 0.786 (SD 0.873; *t*(597) = 22.03, *P* < .001; Cohen's *d* = 0.901) at observation level and 0.763 (*t*(277) = 15.80, *P* < .001; *d* = 0.948) at user level. Net improvement was observed in 49.0% of day-pairs and 55.4% of users. No dose-response beyond the 30-minute threshold was detected (ANOVA *F*(3,594) = 0.610, *P* = .609; Spearman *ρ* = 0.060, *P* = .146).

Conclusions. ≥30 minutes of asynchronous coaching was associated with large next-day mood improvement at both levels. The absence of dose-response suggests a threshold rather than continuous-dose pattern. Controlled testing with validated outcomes is warranted.

Keywords. mHealth; asynchronous coaching; mood; real-world evidence; Southeast Asia

Background

Asynchronous text-based coaching has become a scalable model for corporate wellbeing. Trials suggest message-based therapy is non-inferior to weekly video sessions for moderate depression, and blended care with asynchronous elements achieves comparable symptom reductions.^{1–3} Two evidence gaps limit operational applicability:

- **Geographic.** Peer-reviewed evaluations of digital mental health platforms from Southeast Asia remain scarce relative to regional adoption.^{4,5}
- **Temporal.** Most evaluations use multi-week clinical scales rather than proximal mood. EMA research supports short-horizon measurement as sensitive to early therapeutic processes.^{6,7}

Does 30+ minutes of asynchronous coaching on a given day shift mood by the next day?

Methods

Design & data

Retrospective observational analysis of deidentified operational data from the ThoughtFull mobile application, **April 2021 – March 2025**. Users were employees of corporate clients in Singapore and Malaysia. UCSI University IEC determined exempt from full review (IEC-2025-FOSSLA-0123).

Sample

Eligible day-pairs had (i) mood ratings on both days, (ii) ≥30 min of coach–user messaging on day 1, and (iii) negative day-1 mood. Analytic sample: **598 day-pairs, 278 users** (mean session 55.5 min, SD 32.5).

Outcome

In-app tracker codes moods as +1 / 0 / –1; users may pick multiple, stored as the arithmetic sum. Day-2 values clamped to {–1, 0, +1} for comparability. Mood change = clamped day-2 minus day-1.

Analysis

One-sided one-sample *t*-test (*H*₁: *μ* > 0); Cohen *d*_z; Wilcoxon robustness check. Per-user analysis is the inferential primary. Secondary: dose-response across engagement-time quartiles (ANOVA, Kruskal-Wallis, Spearman *ρ*); exploratory analysis by day-1 mood type. Python 3, verified in R.

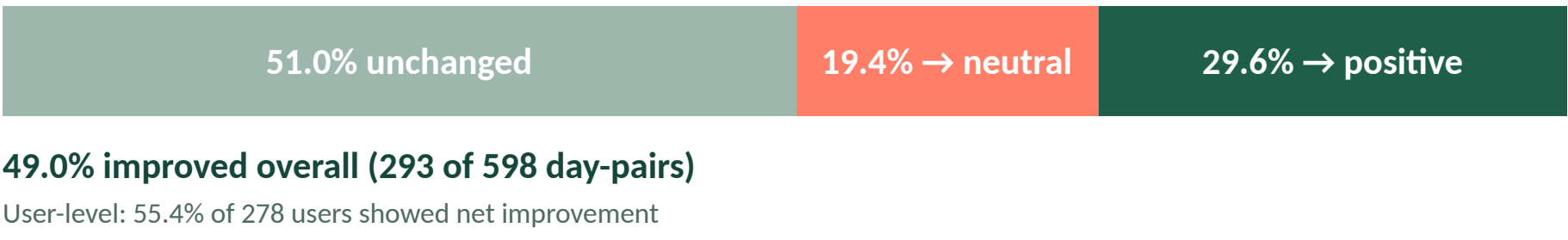
Primary Results

Table 1. Within-subject analyses of next-day mood change

Analysis	N	Mean (SD)	95% CI	<i>t</i> (df)	<i>P</i>	Cohen's <i>d</i>
Observation-level	598	0.786 (0.873)	0.716, 0.856	22.03 (597)	<.001	0.901
User-level (primary)	278	0.763 (0.806)	0.669, 0.858	15.80 (277)	<.001	0.948

All tests one-sided (*H*₁: *μ* > 0). Non-parametric robustness check (Wilcoxon signed-rank): observation-level *W* = 43,071 (*P* < .001); user-level *W* = 11,935 (*P* < .001).

Outcome distribution (n = 598 day-pairs)



Dose-Response

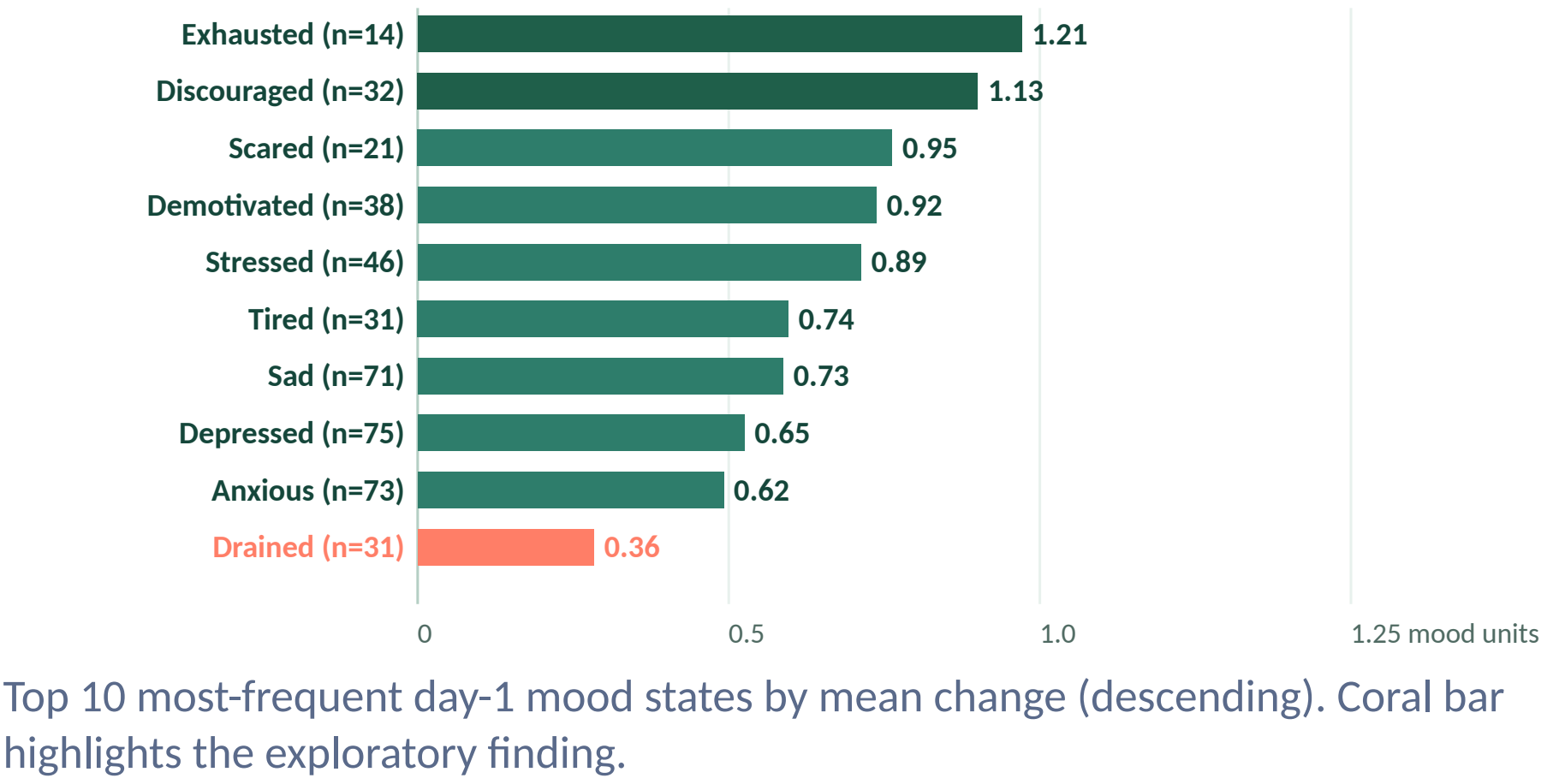
Mean mood change across engagement-time quartiles ranged from 0.718 to 0.847. **No test detected an association** between session duration and mood change beyond the 30-minute threshold:

ANOVA	<i>F</i> (3,594) = 0.610, <i>P</i> = .609
Kruskal-Wallis	<i>H</i> (3) = 1.516, <i>P</i> = .678
Spearman <i>ρ</i>	0.060, <i>P</i> = .146

Interpretation. The 30-minute criterion functions as a qualifying *threshold* rather than a continuous dose.

By Baseline Mood

Exploratory. Omnibus Kruskal-Wallis across 19 mood types (*n* ≥ 10) not significant: *H*(18) = 24.91, *P* = .127. Descriptively, users presenting as "drained" showed the lowest improvement.



Top 10 most-frequent day-1 mood states by mean change (descending). Coral bar highlights the exploratory finding.

Discussion

In this 4-year real-world Southeast Asia dataset, ≥30 minutes of asynchronous coaching engagement was associated with **large next-day mood improvement** at both observation level (*d*_z = 0.901) and user level (*d*_z = 0.948). The effect was robust to non-parametric testing and stable across the 4-year window.

Comparison with prior work

Findings extend evidence for asynchronous text-based interventions to a real-world SEA corporate context, complementing longitudinal results from two-way messaging therapy¹ and non-inferiority of message-based to weekly video psychotherapy.² They build on the ThoughtFull RCT in this population⁸ with operational data and EMA-aligned proximal outcomes.^{6,7}

The **absence of dose-response beyond 30 minutes** suggests a threshold rather than continuous-dose pattern, consistent with evidence that brief structured digital interactions can drive mood change.¹⁰

Limitations

- **Observational design.** Self-selection, regression to the mean, and concurrent life events cannot be excluded as alternative explanations.
- **Single-item outcome.** Mood measured by one ternary self-report; not a validated clinical scale.
- **Threshold heuristic.** The 30-minute cut was an internal product heuristic; relation to specific therapeutic mechanisms is unestablished.
- **Subgroup analysis exploratory.** The "drained" finding warrants confirmatory testing.
- **Generalisability.** Limited to engaged platform users in Singapore and Malaysia.

Conclusions

Asynchronous coaching engagement of **≥30 minutes was associated with large next-day mood improvement** in this SEA corporate mHealth sample.

The threshold pattern and exploratory subgroup observation warrant controlled testing with validated outcome measures.

Implication for practice. A simple engagement threshold may be a useful operational quality marker for digital coaching programs — one that does not require continuous dose escalation to yield short-horizon mood benefit.

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