Supplementary Material S2

Reporting Checklist

This checklist is an adapted reporting aid informed by CONSORT 2025 and, relevant to the two-period within-participant structure, the CONSORT extension for randomized crossover trials. It is not a claim of full CONSORT compliance and is adapted to an exploratory human-computer interaction experiment rather than a clinical intervention.

Domain	Reporting element	Manuscript location	Status / notes
Title and abstract	Study design identified and principal comparison described	Title; Abstract	Reported
Title and abstract	Abstract summarizes design, participants, conditions, outcomes, effect estimates, uncertainty, and main design limitation	Abstract	Reported
Open science	Prospective trial registration	Not in manuscript	No prospective registration was undertaken; study is reported as an exploratory HCI experiment
Open science	Protocol/statistical analysis plan accessibility	Not in manuscript	No public protocol/SAP repository specified
Open science	De-identified participant data and materials access	Data Availability Statement; Supplementary Materials	Data available from corresponding author on reasonable request; S1-S2 and two supplementary audio files provide supporting materials
Open science	Funding and conflicts of interest	Funding; Conflicts of Interest	Reported
Background	Scientific background and rationale	Introduction	Reported
Objectives	Research questions/objectives	Introduction, RQ1-RQ2	Reported

Patient/public involvement	Public or participant involvement in study design	Not applicable	No patient/public co-design reported
Design	Trial/experiment design and allocation ratio	Section 2.1	Fixed balanced 11 AB/11 BA allocation; assignment ordering pseudorandomized before participant assignment
Design	Within-participant/crossover structure identified	Sections 2.1 and 2.3	Reported
Design	Important design changes after commencement	Not reported	No design changes documented in available manuscript
Participants	Eligibility criteria	Section 2.2	Reported
Participants	Setting and recruitment locations	Section 2.2	Reported
Interventions/conditions	Baseline and auditory deadline-cue conditions sufficiently described	Sections 2.4.3-2.4.4; Figure 4	Reported, including ~1 Hz to ~2 Hz prerecorded ticking transition
Interventions/conditions	Question-bank assignment and non-equivalence disclosed	Sections 2.1 and 2.5	Reported explicitly
Interventions/conditions	Practice procedure	Section 2.6	Three practice trials; 20-s visual countdown; no auditory deadline cue
Outcomes	Behavioral outcomes and operational definitions	Section 2.7.1	Accuracy, submitted-response time, response expiration, lifeline use
Outcomes	Usability outcome	Section 2.7.2	Spanish SUS, standard scoring
Harms	Adverse-event/discomfort assessment and reporting	Sections 2.2, 2.6; Figure 1	Eligibility exclusions reported; no adverse event requiring termination

Sample size	How sample size was determined	Section 2.2	No formal a priori calculation; recruitment during Apr-May 2026
Randomization	Sequence generation	Section 2.3	Balanced 11 AB/11 BA list randomized with Excel RAND()
Randomization	Allocation implementation	Section 2.3	Numerical IDs linked before identities known; different researcher administered sessions
Blinding	Who was blinded and feasibility of blinding	Section 2.3	Cue presence could not be blinded; specific hypothesis/direction withheld
Statistical methods	Primary/main model specifications	Section 2.8	Trial-level GLMM/LMM; participant and item random intercepts; period and content category included
Statistical methods	Repeated-measures/crossover considerations	Sections 2.8 and 3.6	Period and sequence assessed; AB/BA counterbalancing reported
Statistical methods	Missing data and imputation	Section 2.8	No imputation for behavioral or usability outcomes
Statistical methods	Multiplicity	Section 2.8; Section 3.6	Exploratory Holm correction across three overall condition tests
Statistical methods	Sensitivity/robustness analyses	Sections 2.8 and 3.6	Submitted-response accuracy, original 15-s deadline, lifelines, sequence, thematic pair, random slopes
Participant flow	Numbers assessed, excluded, randomized/assigned, completed, analyzed	Figure 1; Section 3.1	Reported
Recruitment	Recruitment and data-collection dates	Section 2.2	April-May 2026
Baseline data	Participant characteristics and sequence allocation	Table 1	Reported

Numbers analyzed	Analysis sample and trial counts	Sections 3.1-3.2	22 participants; 440 trials; 399 submitted responses; 41 expirations
Outcomes/results	Condition estimates with confidence intervals	Table 3; Sections 3.3-3.5	OR/GMR with 95% CI reported
Outcomes/results	Content-category interaction	Table 3; Sections 3.3-3.5	Reported for all three behavioral outcomes
Crossover-specific	Results by period/sequence and possible order effects	Sections 3.3-3.6	Period in main models; sequence sensitivity reported
Crossover-specific	Washout/rest interval between periods	Section 2.6	Approximately 1-min rest
Crossover-specific	Carryover/familiarization considerations	Section 4.9	Residual awareness/familiarization acknowledged as possible limitation
Ancillary analyses	Exploratory SUS-performance associations	Section 3.7	Spearman correlations with Holm correction
Discussion	Interpretation consistent with results and design	Sections 4.1-4.9	Causal attribution explicitly constrained by bank-condition confounding
Limitations	Design, sample, timing, auditory characterization, fixed order, lifelines, generalizability	Section 4.9	Reported
Ethics	Ethics approval and informed consent	Section 2.9; end statements	UTI-VI-060-2025, 30 July 2025; written consent
Other information	Funding source and institutional support	Funding; Acknowledgments	IIDI-046-2026; laboratory facilities acknowledged

References for the reporting framework

Hopewell S, Chan A-W, Collins GS, et al. CONSORT 2025 statement: updated guideline for reporting randomised trials. BMJ. 2025;389:e081123. doi:10.1136/bmj-2024-081123.

Dwan K, Li T, Altman DG, Elbourne D. CONSORT 2010 statement: extension to randomised crossover trials. BMJ. 2019;366:l4378. doi:10.1136/bmj.l4378.