

Strengthening User Experience and Trust in Cardiac Monitoring with Kardi AI

Charul Narain, MPH¹; Varsha Srivastava, PhD¹; Vandana Yadav, MS¹; Stan Kachnowski, PhD, MPA¹
¹Healthcare Innovation and Technology Lab (HITLAB)



ABSTRACT

Traditional ECG and 24–48-hour Holter tests often miss intermittent arrhythmias due to short monitoring windows and bulky devices that limit patient adherence. Limited guidance on recording quality and troubleshooting further leads to incomplete data and added clinician workload.

Kardi AI offers a digital-first, AI-enabled solution for long-duration ECG monitoring through a medical-grade chest strap and intuitive mobile app. The platform provides continuous heart-rhythm data and real-time insights, supporting better recording quality and a more comfortable, patient-centered experience.

This HITLAB heuristic evaluation assessed the usability and overall experience of the Kardi AI system using Jakob Nielsen’s Ten Usability Heuristics. Findings show strong usability and functionality, with recommendations to enhance real-time feedback, recording guidance, and error prevention to further improve accuracy, trust, and sustained engagement.

OBJECTIVES

- To evaluate the usability and user experience of the Kardi AI platform. To assess the platform’s alignment with Usability Heuristics and identify strengths and opportunities for improvement.
- To recommend evidence-based enhancements that strengthen user confidence and data quality.

STUDY METHODOLOGY

- Framework:** Jakob Nielsen’s 10 Usability Heuristics
- Evaluation Approach:** Expert inspection and heuristic evaluation simulating end-to-end user tasks across the Kardi AI mobile app and ECG chest-strap device.
- Test Scenarios (Personas Evaluated):** A. Daily ECG user (54-year-old working professional). B. Caregiver–clinician hybrid user (38-year-old cardiologist monitoring a dependent user, interpreting results, and evaluating readiness for clinical decision-making).

RESULTS

Strengths Identified

- Clean, minimalist, medical-grade interface.
- Real-time ECG waveform display builds trust.
- Intuitive onboarding with seamless device pairing.
- Symptom tagging enhances clinical interpretation.
- Low cognitive load with clear screens & simple labeling.
- Clearly laid out output, easy to share with providers.
- Lightweight, comfortable & suitable for daily use.
- Adjustable strap fits diverse body types.
- Stable grip with secure fastening.
- Washable, easy-maintenance design.
- Reliable Bluetooth connectivity for uninterrupted streaming.

Recommendations

- Add visual or buzzer feedback for battery status and device connectivity.
- Display clear recording instructions before starting (e.g., sit still, breathe normally, ensure strap is snug).
- Allow users to set custom recording durations while preventing selections below the minimum threshold.
- Provide real-time prompts during recording (e.g., “Signal quality low—adjust strap”). Introduce gentle alerts for connectivity issues, low battery, and upcoming recordings.
- Add a notifications section with customizable reminders.
- Include clear labels or icons showing how to safely remove the tracker before cleaning.
- Add a personalized home-screen greeting to enhance user engagement.
- Use motivational progress messages to encourage consistent device usage.

THE KARDI AI PLATFORM

Kardi AI solves the gap in cardiac care by providing seamless, long-duration ECG monitoring with real-time, AI-driven insights.

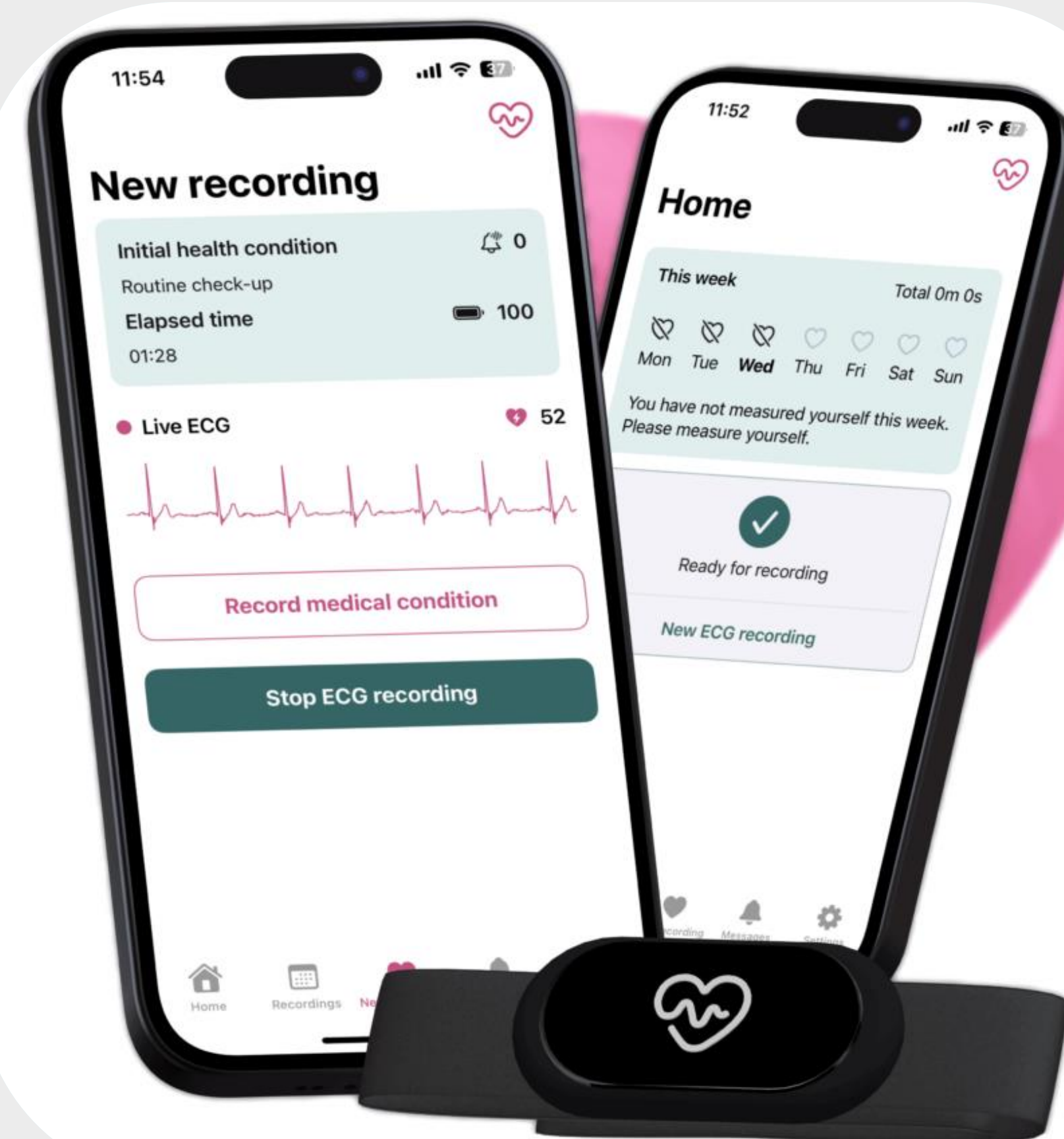
Kardi AI App

- Medical-grade ECG sensor for accurate long-duration monitoring. Real-time ECG waveform display for instant signal confirmation.
- AI-generated rhythm insights, alerts, and detailed reports.
- Symptom tagging to enhance clinical interpretation.
- Secure cloud storage with clinician-ready ECG histories.
- Clean, intuitive interface designed for low cognitive load.

Use Cases

- Preventative care for everyone aged 35 years or above.
- Existing patients for tracking trends and medication impact, as it provides long-term data and ECG evaluation.
- Post-surgery monitoring.
- Post-ischemic stroke patients
- Other cardiac-event patients
- Patients suffering from any other conditions where cardiac event can occur as a comorbidity.

- B2B and B2C product** – distributed through doctors, who have full access to evaluation and results.
- Currently used by 130 cardiologists and 30 hospitals in 4 states.**



Evaluation ratings for Usability Heuristics (out of 5)

4 / 5

Visibility of System Status:
Add buzzer/visual feedback, timers, and real-time updates.

4 / 5

Match Between System & Real World:
Simple, intuitive physical design aligns with real-world expectations except a few unclear terms like “moisten electrodes” in app.

4 / 5

User Control & Freedom:
Easy strap adjustment and app navigation. Lack of pre-warning about session length limits control.

5 / 5

Consistency & Standards:
Clean, consistent interface with professional medical aesthetic.

3 / 5

Error Prevention:
Errors identified after they occur (e.g., too-short recording). No alerts for lost connectivity or improper setup.

4 / 5

Recognition Rather Than Recall:
Minimal layout reduces cognitive load, but lack of visible reminders (like wash care) requires users to recall steps.

4 / 5

Flexibility & Efficiency of Use:
Easy pairing and setup process; adjustable strap fits diverse users.

5 / 5

Aesthetic & Minimalist Design:
Sleek, clutter-free UI with clear visual hierarchy.

3 / 5

Help Users Recognize, Diagnose, Recover from Errors: Feedback is communicated too late; error messaging unclear or insufficient.

4 / 5

Help & Documentation:
Inadequate instructions for washing and electrode guidance in the app.

CONCLUSION

HITLAB’s evaluation shows that Kardi AI delivers a robust, patient-centered solution for long-duration cardiac monitoring. By pairing a comfortable ECG strap with real-time AI analytics, the platform meaningfully enhances the likelihood of earlier rhythm-abnormality detection. Strengthening system feedback, user guidance, and personalization will further refine the experience and reinforce Kardi AI’s value in modern cardiac care. Overall, Kardi AI is well positioned to drive broader adoption of continuous, evidence-based cardiac monitoring.

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