

# Woddle Baby: Bringing Insight, Comfort, And Connection To Infant Care

Shruti Chopra, PhD <sup>1</sup>; Charul Narain, MPH<sup>1</sup>; Vandana Yadav, MS<sup>1</sup>; Stan Kachnowski, PhD, MPA <sup>1</sup>  
<sup>1</sup>Healthcare Innovation and Technology Lab (HITLAB)



## ABSTRACT

Woddle is an AI-enabled infant health monitoring platform that integrates medical-grade weight measurement with intelligent, caregiver- and clinician-friendly support tools. At its core, Woddle is a smart changing pad with a built-in scale accurate to ±5 grams, paired with a connected mobile application that seamlessly captures and analyzes infant data—including growth, feeding, and sleep patterns—to deliver real-time, reliable insights.

This heuristic evaluation, conducted by HITLAB, examined the design, functionality, and usability of the Woddle platform from the perspective of typical end users. Using Jakob Nielsen's 10 Usability Heuristics in combination with a cognitive walkthrough, the study assessed real-world tasks such as infant monitoring, data tracking, trend interpretation, and information sharing with healthcare providers.

Findings highlight both the platform's notable strengths and key opportunities for refinement. Overall, the evaluation underscores Woddle's strong potential as an integrated caregiving solution that blends thoughtful design with practical functionality. With its clear interface, intuitive workflows, and seamless data-sharing capabilities, Woddle is well-positioned to advance infant-care support for both parents and clinicians.

## OBJECTIVES

- Assess the user experience and learnability of the Woddle Baby App, Woddle device, and Woddle Clinical Portal through a task-oriented cognitive walkthrough.
- Identify usability issues within the Woddle platform, focusing on both the mobile application and device interface by assessing its compliance with established heuristic principles.
- Derive actionable insights to refine the Woddle platform, with the aim of enhancing user experience.

## STUDY METHODOLOGY

- Two independent researchers conducted evaluations of the Woddle platform to assess its usability.
- Two user personas (Parent and Provider) that reflect the target user demographics and behaviors were developed.
- The researchers evaluated and identified issues for usability and functionality using Jakob Nielsen's interaction design heuristics.
- Actionable insights and recommendations were then provided based on this assessment.

## RESULTS

### Woddle Baby App

Strengths	Recommendations
<p><b>Clean and Modern Layout</b></p> <p>A clear, well-organized interface allows users to easily find important features.</p>	<p><b>AI Chat Display:</b> Fix text overflow in Dara's chat bubbles for better readability.</p> <p><b>Clarity in input options:</b> Clarify "light," "medium," and "heavy" diaper output with examples.</p> <p><b>Addition of Insights on Baby Preferences:</b> Track and display trends in white noise, lullabies, or light colors to help parents identify baby's response.</p> <p><b>Feature for Customized Alerts:</b> Enable caregivers and providers to set personalized alerts (e.g., feeding times, sleep reminders).</p>
<p><b>Milestones Section</b></p> <p>Detailed information helping parents track and support their child's development.</p>	
<p><b>Secure Data Management &amp; Sharing</b></p> <p>Secure storage and sharing of information.</p>	
<p><b>Accurate &amp; Reliable Data Tracking</b></p> <p>Precision scale providing medical-grade measurements.</p>	
<p><b>AI Feature (Dara)</b></p> <p>An engaging AI feature providing parents with valuable developmental insights.</p>	
<p><b>Educational &amp; Empowering Experience</b></p> <p>Supporting proactive parenting and learning.</p>	

### Woddle Device

Strengths	Recommendations
<p><b>PRECISE SCALE</b> Enabling weighted feeding</p>	<p><b>Provide Trend Insights:</b> Show parents patterns in sound usage (white noise, lullaby, classical) and light color preferences to identify what soothes their baby most.</p> <p><b>Enable Preset Settings:</b> Let parents create and save favorite combinations of light and sound directly from the app or device for quick access.</p>
<p><b>CLEAN, MODERN DESIGN</b> Blends into the home and easy to clean and maintain</p>	
<p><b>INTEGRATED SYSTEM</b> Combines multiple caregiving functions</p>	
<p><b>USER-FRIENDLY EXPERIENCE</b> Intuitive, stress-free interaction for parents</p>	
<p><b>SIMPLE SETUP</b> Initial experience stress-free</p>	
<p><b>RESPONSIVE TOUCHSCREEN</b> Ensuring smooth and efficient use without delays</p>	

### Woddle Clinical Portal

Strengths	Recommendations
<p><b>CLEAR INFORMATION HIERARCHY</b></p> <p>Ability to visualize data in workflow: Charts, List, Calendar</p> <p>Enhances recognition and role segmentation</p>	<p><b>Guided Templates :</b> Use empty areas to offer quick-start options like "+ Add weight note" and "+ Add feeding summary."</p> <p><b>Customizable Export Options:</b> Enable providers to choose what to include in PDF/CSV exports (e.g., Assessments, Observations, Measurements, Logs).</p> <p><b>Manual Sync Button:</b> Add a simple "Retry Now" option to manually trigger data sync or notifications in the Woddle Baby App.</p>
<p><b>SYSTEM FEEDBACK &amp; STATUS VISIBILITY</b></p> <p>'Last data received: 7 hr ago' and 'Reconnect' indicators</p>	
<p><b>CLEAN, MODERN, LOW COGNITIVE LOAD UI</b></p> <p>Minimalist layout supports chart review</p> <p>Simple labeling and icons</p>	

## Woddle Platform

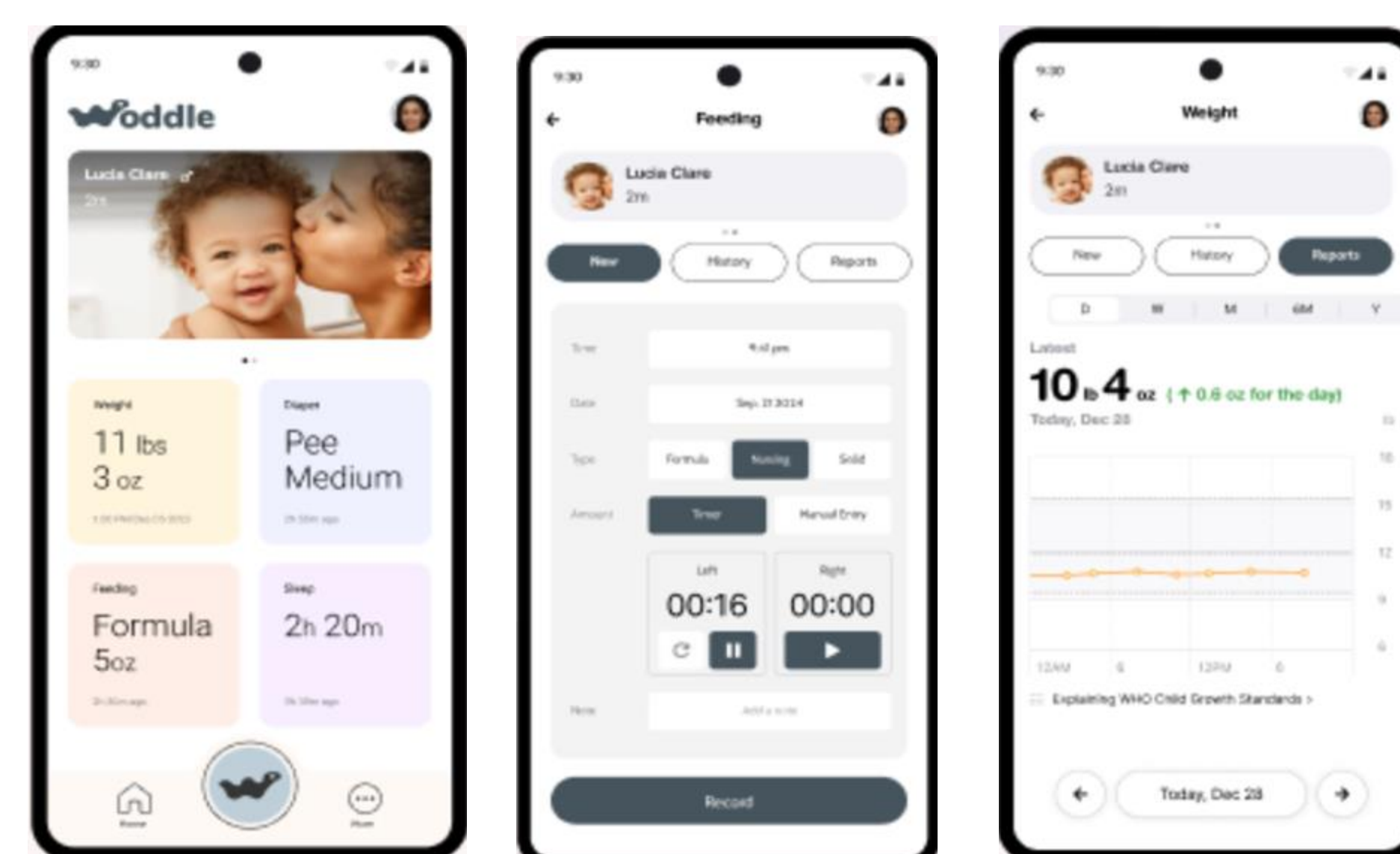
### Why Woddle is Useful?

- In the US, approximately 3.6 million infants are born each year, and growth monitoring (weight tracking), is among the most critical indicators of early health and development.
- Caregivers often lack access to reliable, clinically-accurate tools for tracking these subtle but significant changes apart from pediatric visits.
- This gap leads to a delay in early intervention, contributing to parental anxiety and increasing the risk of preventable complications.
- Woddle provides safer, consistent, and value-driven care for infants and families, while enhancing communication and continuity between the home and clinical settings.

**The Woddle Platform:** Smarter tracking. Calmer parenting.

From diaper changes to developmental milestones, Woddle makes early parenting more peaceful, confident and connected.

## Woddle Mobile Application



## Woddle Device



## Heuristics

Visibility of system status	★★★★★
Match between system and the real world	★★★★★
User control and freedom	★★★★★
Consistency and standards	★★★★★
Error prevention	★★★★★
Recognition rather than recall	★★★★★
Flexibility and minimalist design	★★★★★
Electribility efficiency of use	★★★★★
Help and documentation	★★★★★

## Ratings

## CONCLUSIONS

The heuristic evaluation highlights Woddle as a strong, family-centered digital health platform which seamlessly combines precise infant monitoring with AI-supported guidance. Its ability to deliver reliable, real-time data not only enhances communication between parents and providers but also supports more proactive and informed care. The recommended strengthening areas will further refine its usability and clinical value. Overall, Woddle is well-positioned to become a trusted companion in modern pediatric care and early childhood development.

## ACKNOWLEDGEMENTS

Authors would like to acknowledge the HITLAB research team for study support and implementation, and the platform developers for their work and technical support throughout the study.