Opportunities in Designing HCI Tools for Lactation Consulting Professionals

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Motivation

Long-term breastfeeding has been shown to exhibit several environmental benefits and health benefits for both the mother and baby. Despite the known advantages, several mothers choose not to maintain breastfeeding long-term. How long a mother breastfeeds is heavily influenced by lactation and latching, and so the mother's critical point of support is the lactation consultant (LC), who guides and provides instruction for creating a more positive breastfeeding experience.

Empowering lactation consultants with methods to deliver instruction and support remotely is essential for advancing telehealth and wide-scale adoption. For better at-home self-efficacy for mothers breastfeeding without support, we anticipate that continuous, automated monitoring and detection of breastfeeding issues could provide positive reinforcement, actionable feedback, and early interventions by escalating to a professional LC expert, leading to higher rates of continued breastfeeding.

Contribution

In a formative study, we performed qualitative interviews with open questions to LCs in the field with different levels of experience and different backgrounds. These interviews served as an initial probe that provided the authors contextual information about their work profile and study routines, verifying aspects of their experiences that worked and did not work for them in virtual settings. The main contributions are as follows:

(1) Interview with 6 lactation consultants from Brazil, with varying backgrounds and levels of experience. Each LC responded to 20 questions related to their consulting work and learning experiences in both virtual and in-person environments.
(2) Analysis of the main challenges the lactation consultant community faces when providing maternal care and their sentiments regarding working in virtual settings.
(3) Identification of areas in which the HCI community can contribute to LCs professionals having better experiences and higher adoption of virtual tools for a broader reach of lactation support worldwide.
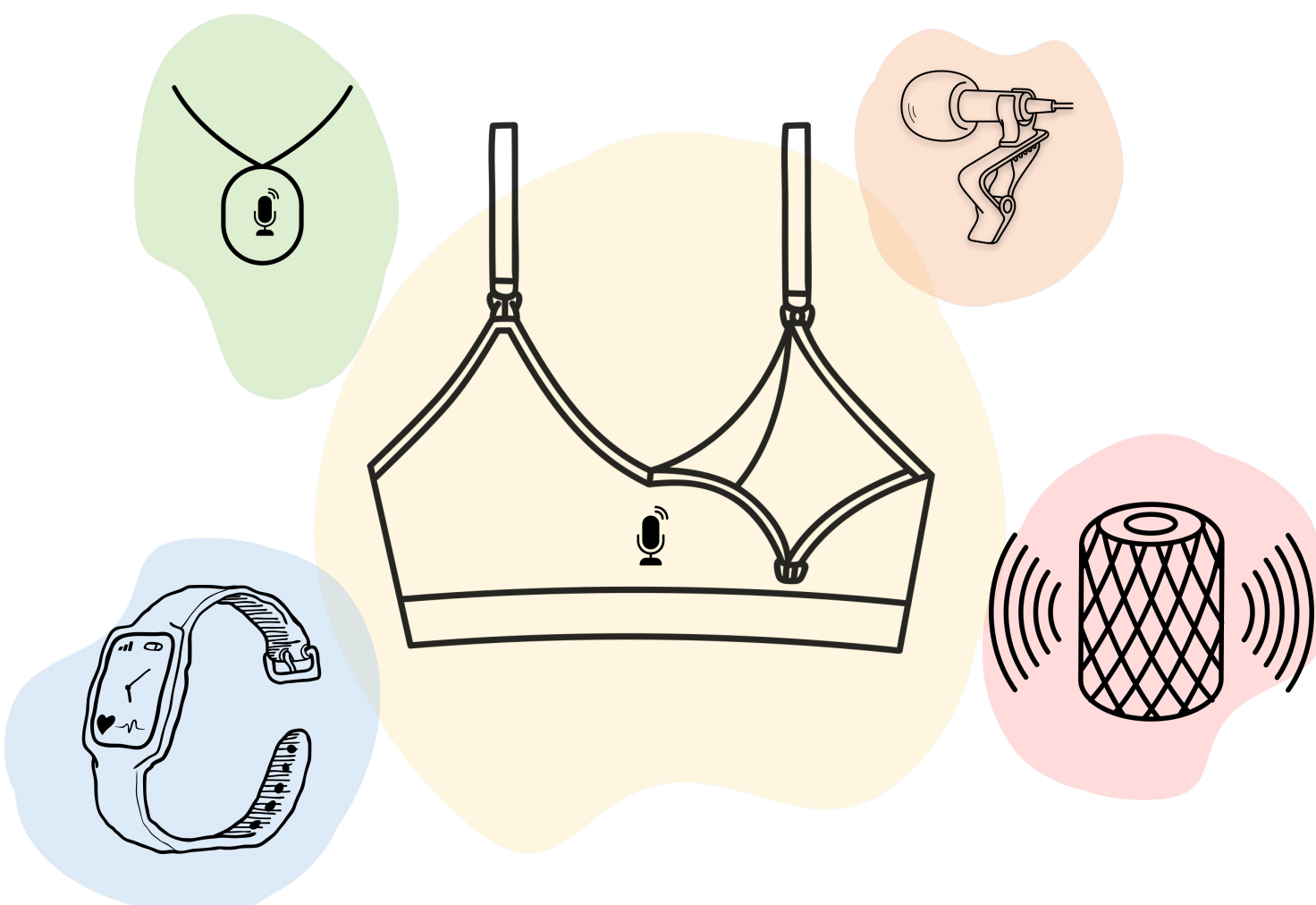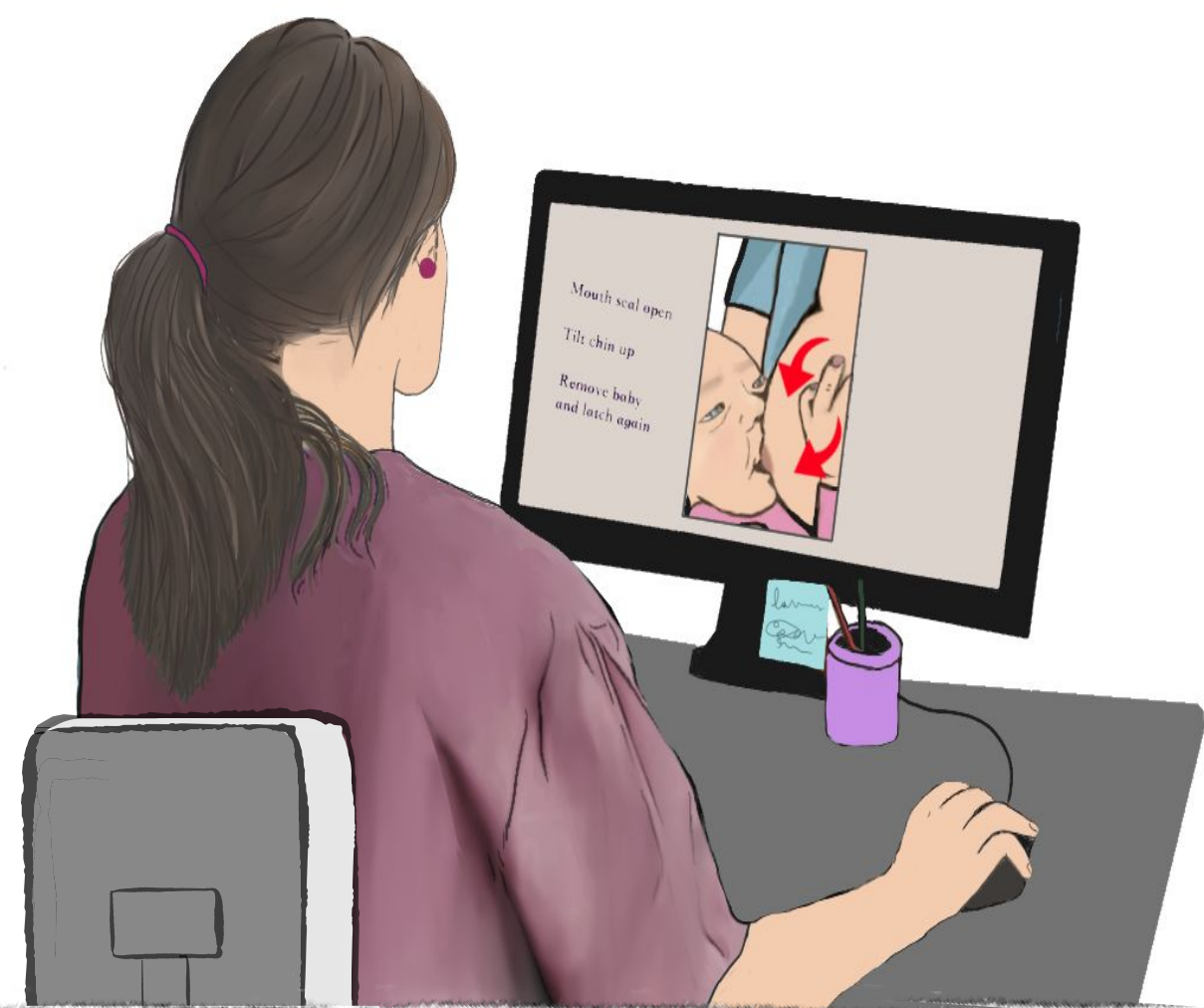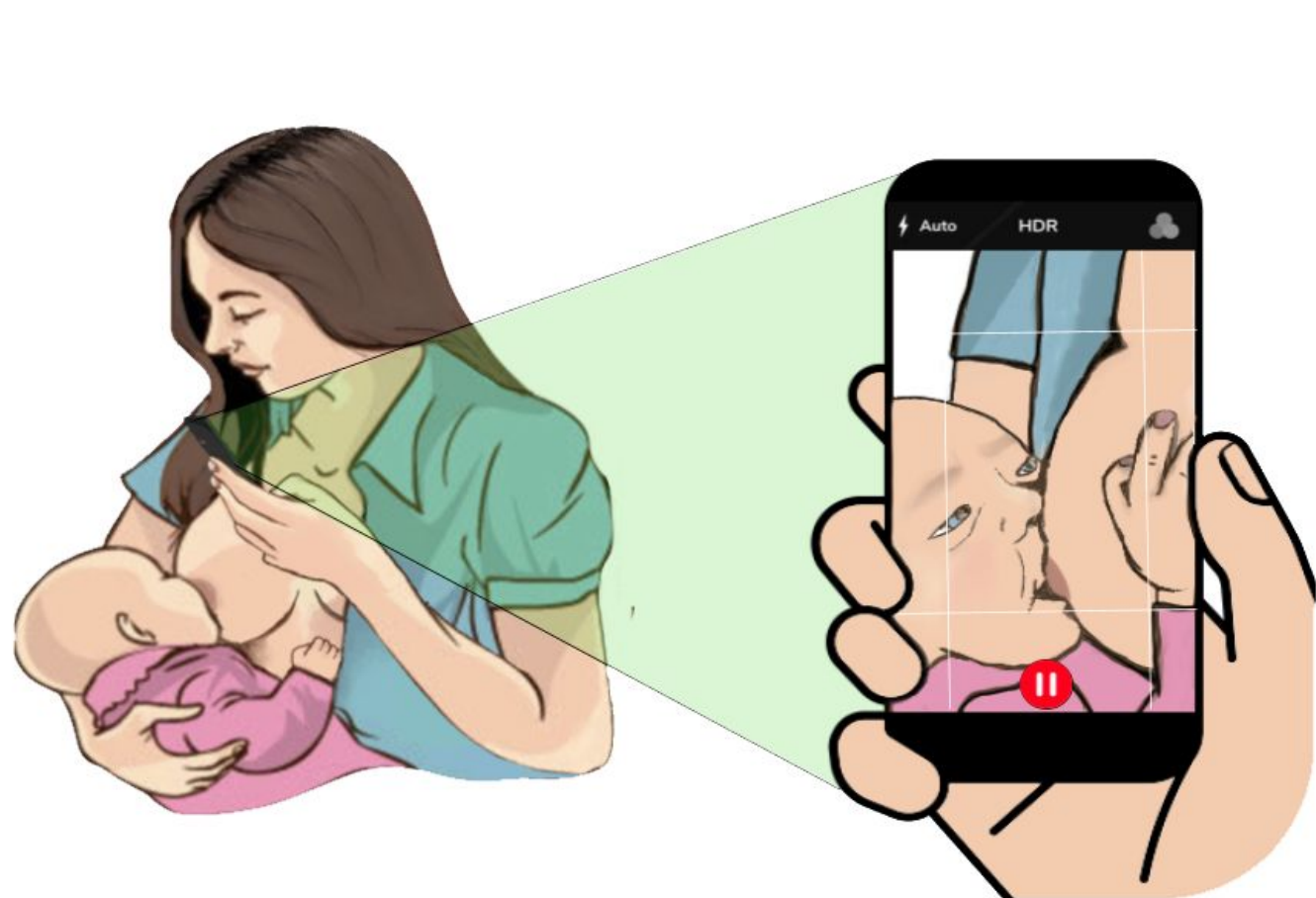

Figure 1 - Our need-finding study identified the need to incorporate and adapt existing devices and technologies to improve the care of lactation consultants in remote breastfeeding consultations and asynchronous feedback. The usage of video labeling by the lactation consultant can benefit parents when receiving feedback and directions for proper breastfeeding. Also, improving sound acquisition from the baby while breastfeeding in remote consultations can help the lactation consultant solve cases faster and more accurately in the virtual environment.

Key Findings

The findings from our need-finding study with 6 LC's sheds light on ways to address some of the challenges faced by the LC community when providing remote lactation support. In Table 1 is shown the main comments made by the participants. Based on the answers, we found the following conclusions:

→ LC's sentiment around remote consultations is varied
→ Virtual settings can be difficult due to dulled senses
→ Physical manipulation is missing in virtual settings
→ Remote lactation consulting is useful for mothers' independent learning
→ Annotations on videos are a way to provide feedback to the mother
→ Use of tools by the LC varies based on level of experience

Table 1: Common findings from participants' results

Agree (n)	Participant ID						Common Issues and Sentiments Expressed
	P1	P2	P3	P4	P5	P6	
6	✓	✓	✓	✓	✓	✓	LC is not only about breastfeeding, but mainly supporting the mother
6	✓	✓	✓	✓	✓	✓	Observe nutritive suckling is essential for seeing effective breastfeeding
4	✓			✓		✓	✓	Baby sounds is an important component for solving problems in breastfeeding
4	✓	✓	✓	✓			It's difficult to identify signs of milk extraction when learning breastfeeding
4	✓			✓	✓	✓	Issues with analyzing baby's mouth in RCs
3		✓	✓	✓			Likes providing Remote Consultations (RCs)
3	✓	✓	✓				Noticed benefits to the mother from RCs
3	✓	✓	✓				Uses video annotation as a guidance for mothers
3	✓	✓	✓				Relies on mother mentioning the baby's sounds in RCs
3		✓	✓	✓			Changed communication and instruction techniques for RCs
3	✓		✓	✓			Used RCs before the pandemic and aims to continue using
3				✓	✓	✓	Touching the baby is essential for a consultation
2		✓		✓			Observe diapers is essential for seeing effective breastfeeding
1		✓					Uses written step-by-step guide for mothers check when needed

Opportunities in HCI

Through our formative need-finding, we identified general themes around remote and virtual lactation consultation. Based on the interviews, a number of potential technologies were identified around wearable sensing, annotation tools, and digital repository for virtual education. We believe that the HCI community can provide tools for lactation consultants to promote broader support on breastfeeding and parental encouragement for prolonged exposure of breast milk for the baby. Here are a few topics of interest by our group:

→ Wearable microphone for helping LCs hear better
→ Dashboard for LCs to have better presence of their patients
→ Annotation and video review tools for remote sessions
→ Virtual open library of difficult and rare cases for lactation education