

---

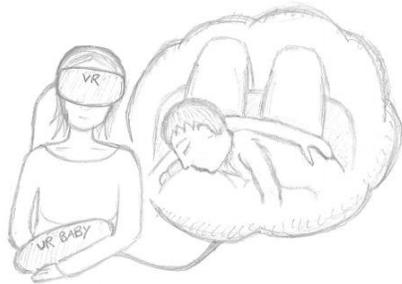
# Reflections on Technology to Support Breastfeeding

**Kathrin Gerling**  
KU Leuven  
e-Media Research Lab  
kathrin.gerling@kuleuven.be

**Kymeng Tang**  
KU Leuven  
e-Media Research Lab  
kymeng.tang@kuleuven.be

**Luc Geurts**  
KU Leuven  
e-Media Research Lab  
luc.geurts@kuleuven.be

**Wei Chen**  
Fudan University  
Electronic Engineering  
w\_chen@fudan.edu.cn



## ABSTRACT

Breastfeeding provides unique health benefits to mother and child, e.g., better protection against breast cancer for mothers, and improved immunity to childhood diseases among breastfed children [5]. However, it also is a challenging process, with breastfeeding success being determined by socioeconomic factors as well as knowledge, attitudes and perceived self-efficacy of parents [3]. A range of ICT solutions have been developed to support mothers in the postnatal period, including websites [4], apps [6], and games [2]. In our work, we aim to contribute to this space through the development of immersive playful systems; here, we provide two scenarios that allow us to explore opportunities and limitations of such systems from the perspective of the practical needs of expecting parents, and we present our research that explores the potential of playful interactive technology to introduce parents-to-be to the process of breastfeeding.

---

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the owner/author(s).

*CHI'19 Workshop on Motherhood and Technology, May 4-9, 2019, Glasgow, Scotland, UK.*

© 2019 Copyright is held by the author/owner(s).

## KEYWORDS

Breastfeeding; parenthood; games; virtual reality.

## BRIEF SCENARIOS

*Scenario A:* Sarah has been discharged from hospital with her newborn. She struggles to breastfeed, and when reaching out to the midwifery unit of her local hospital, she is told that she no longer has access to their care. Instead, she is referred to a local support group run by volunteers that meets once a week. She doesn't know how to make it through the next night of continuous, painful breastfeeding.

*Scenario B:* Christine and Alexander are expecting their first baby. At their antenatal classes, the teacher demonstrates the process of breastfeeding using an old doll and a ball. There is awkward silence among the attendees. On the way home, they admit to each other that they are unsure whether breastfeeding is for them.

## BIOGRAPHY OF THE AUTHORS

*Kathrin Gerling* is an Assistant Professor at KU Leuven, Belgium. Her work broadly falls into Human-Computer Interaction and Physical Computing. She is interested in accessibility of interactive systems, and how playful technology can be leveraged to support well-being.

*Kymeng Tang* is a PhD student at KU Leuven. He develops immersive playful systems to allow expecting parents and wider society to experience breastfeeding, and currently explores how to convey intimacy in a virtual reality environment.

*Luc Geurts* is a Professor at KU Leuven. He works on technologies for tangible and playful interactions, from his background in electrical engineering and signal processing. He is interested in applications in health care and education, and has also collaborated with several artists.

*Wei Chen* is a Professor at Fudan University, China. Her research areas are wireless sensor systems, patient health monitoring, ambient intelligent system design and digital signal processing for performance optimization with healthcare applications including neonatal monitoring.

## PREVIOUS WORK

We currently explore the idea of playful parenthood, trying to understand the role of technology when transitioning to the role of a parent, and how it can be leveraged to support expecting and new parents. In previous work, we have examined the opportunities and challenges for playful technology to support breastfeeding [1]; in an ongoing research project in collaboration with care4education (<https://www.care4education.be>) we develop virtual reality solutions to give expecting parents a glimpse at the experience of breastfeeding (see figures on first page).

## REFERENCES

- [1] K Gerling, K Hicks, L Buttrick, C Headleand, B Williams, J Hall, K Tang, L Geurts, W Chen. 2018. Potential and Limitations of Playful Technology to Support Infant Feeding. In Proceedings CHI PLAY '18 Extended Abstracts. ACM, New York, NY, USA, 431-437.
- [2] Grassley JS, Connor KC, Bond L. Game-based online antenatal breastfeeding education: A pilot. Applied nursing research: ANR 2017 Feb;33:93-95.
- [3] Meedya S, Fahy K, Kable A. Factors that positively influence breastfeeding duration to 6 months: A literature review. Women and Birth 2010 Dec;23(4):135-145.
- [4] Shaikh U, Scott BJ. Extent, accuracy, and credibility of breastfeeding information on the Internet. J Hum Lact 2005 May;21(2):175-183.
- [5] Victora CG, Bahl R, Barros AJD, França GVA, Horton S, Krasevec J, Murch S, Sankar MJ, Walker N, Rollins NC. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. The Lancet 2016 Jan;387(10017):475-490.
- [6] Zhao J, Freeman B, Li M. How Do Infant Feeding Apps in China Measure Up? A Content Quality Assessment. JMIR mHealth and uHealth 2017 Dec;5(12):e186.