



## A Braided Approach to the Development of Textile Print Designs for NICU Mothers' Kangaroo Care Garments

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**Introduction:** The birth of a baby is an exciting time for families and an emotional and physically challenging time for new mothers. This is particularly true for a community of mothers' whose infants need medical intervention in a Neonatal Intensive Care Unit (NICU) after birth. Within the field of textile and apparel, few researchers have examined this unique lived experience and the role that apparel plays in the physiological and psychological health of both mother and infant. Recently, the Cobb and Clarke-Sather (2020), developed a SnuggleTime garment system for kangaroo care in the NICU. Based on the results from this study, the researchers aimed to further explore one element of the garment design which was identified as an area for improvement: the textile print design. Therefore, the design challenge of this research project was to create a series of textile prints to be tested and implemented into the kangaroo care garment. Furthermore, this research aimed to contribute to a growing body of design research with the approach of raising awareness about community experiences and to expand the body of work utilizing the braided approach model to further integrate this framework into design scholarship.

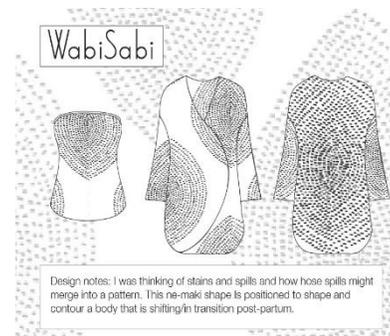
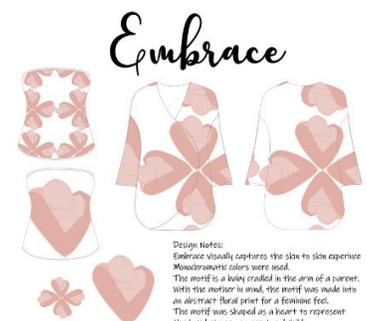
The main objective of this research project was to develop textile print designs which would be implemented into a kangaroo care garment. We took note of the recent research conducted by Hwang and McCoy (2019) who developed a functional maternity gown through a user centered design approach to gain insight to physiological and psychological needs of mothers during and after giving birth. Hwang and McCoy (2019) noted women articulated that more memorable colors and prints of hospital gowns would contribute positively to their birthing experience and increase the desire to wear the hospital gown postpartum. Based on this finding, the researchers conducted a contextual review aimed to discover what colors and prints would contribute to a more positive experience for NICU Moms. The researchers researched the impact color can have on a wearer, the visual ability and simulation of infants at birth, and considered the functionality and marketability of motifs within our textile prints.

The second objective of this project was inspired by designers who recently exhibited work at ITAA. Lapolla and Chen's (2020) dress design entitled "Growing a Baby Bump", raised awareness of the shifting identities that expectant mothers experience as a community. Design elements were used as visual representation of the community experience. For example, the dimensional leaf pattern in their design represented the thriving transformation of women's body. Their design work, along with the work of Reddy-Best (2015, 2018), focused on the visual representation of experience. According to Sohn and Bye (2015), pregnant women wanted their clothing to emphasize and celebrate their pregnant bellies. Therefore, designing a textile print to visually represent the NICU experience became the second goal of this research study.

To meet these research objectives, researchers utilized the braided approach model (Totorice, Davelaar, & Cobb, 2016) to develop a series of textile print designs. The braided model approach helps designers in collaboration turn their tacit knowledge into explicit knowledge through a process of information gathering, sharing, and reflecting. This model creates structure for collaborative practice. The braided approach is a six-step model which includes: (1) researchers sharing individual interests and histories, (2) conducting individual contextual reviews, (3) creating a shared contextual review, (4) practice, (5) conducting a collective reflection, and (6) the creation of an artifact(s).

**Method/Exploration:** During the current research project, the researchers employed the braided approach model. Conducted through a virtual environment, researchers attended virtual meetings, made use of online shared drives, and digital design/organizational tools such as padlet. Over the course of several months, the researchers met biweekly to work through the braided approach model. Each researcher had their own folder on a shared drive for research notes and reflections. These were shared during meetings to create the shared contextual review. We independently used this information gathered and shared in steps 1-3 of the model to create a series of textile prints. Each researcher/designer's goal was to create 5 textile prints based on the shared contextual review. We had two weeks for this design practice and then met to share and reflect on their designs and their design process.

**Results/Implications:** The use of the braided approach model resulted in the creation of 10 textile prints to be analyzed and implemented in a NICU kangaroo care garment. During our presentation, we will present all 10 textile print designs. A few examples of our textile print designs include “Embrace”, “The Breast Floral”, “Wabi Sabi”, and “Flora Fawn”. “Embrace” is a textile print design that visually captures the skin-to-skin experience. The motif is a heart shaped symbol that reflects a baby being cradled in a mother's arm. The print would be engineered and digitally printed for the construction of the kangaroo care garment. “The Breast Floral” is a print that emulates the female breast anatomy. The central motif is a flower, composed of a deconstructed raspberry plant that represents milk ducts (roots), lobules (fruits), the areola (outline of blossom), and nipple (inside of the blossom). This design is meant to be feminine and address the shared experience of milk production amongst mothers. “Wabi Sabi” and “Flora Fawn” offer high contrast black and white prints, stimulating brain growth and development in newborns. “Wabi Sabi” is composed of a reversible print, encouraging longevity of use. “Flora Fawn” looks at ways print (ne-maki inspired shibori dots) can serve as both fashion



and as function, when spills, drips and stains are the norm for the user. These 10 textile prints will be used in future user centered design research in hopes to provide NICU mothers with a kangaroo care garment that addresses their physiological and psychological needs.

**Significance:** This research collaboration provides a foundation for a continued line of research in garment design for NICU settings. The research produced a total of 10 digital textile prints, added to the body of work creating visualizations of shared experiences, and further solidified the use of the braided approach model in design research. The impact this research has is both practical in the creation of tangible outcomes, but also is theoretical in helping to further develop a new collaborative design framework.

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