

## What Do Breastfeeding Mothers Want to Wear?: Understanding the Issues and Needs of Breastfeeding Mothers to Create a Marketable Design

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**Background of Breastfeeding.** The protective effects of breastfeeding are primarily focused on supporting maternal and neonatal health, preventing diseases and complications, and reducing healthcare costs for families (Asadi, Aslani, Nayebinia, & Fathnezhad-Kazemi, 2020). The U.S. government and Center for Disease Control (CDC) recommend that all sectors of society support mothers' breastfeeding (CDC, 2012). In 2019, there were 3,745,540 babies born in the United States (Hamilton, Martin, Osterman, 2020). In 2020, the birth rate experienced a 0.09% increase from the previous year. Among infants born in 2019, four out of five (84.1%) started out breastfeeding. Over half (58.3%) were exclusively breastfeeding at six months, and 35.3% of the infants were breastfeeding at 12 months (CDC, 2020). With this large percentage of breastfeeding mothers in the United States, options for breastfeeding apparel should also be expected to increase. In alignment with the CDC's goal of supporting nursing mothers, apparel product development and textile science fields should take on the responsibility to improve the postpartum apparel-wearing experiences of consumers during the breastfeeding period to improve mothers' quality of life.

**Purpose and Significance.** The purpose of this study was to investigate the issues that breastfeeding mothers face, as well as investigate the needs and perspectives from breastfeeding mothers, to assist in future design. The findings of the study provide a practical guide for scholars and designers to develop a customer need-based nursing bra and absorbent breast pad.

**Methods.** An online survey was developed to gather respondents' perspectives about the design elements and the construction of the nursing bra. Women who are over 18 years old and had breastfeeding experience were recruited by Qualtrics, a professional organization that uses prequalified respondents to achieve response rates sufficient to ensure validity. The online survey included closed- and open-ended questions. Respondents' demographic characteristics were collected, including their age, ethnicity, location, and length of breastfeeding. The data were analyzed through a mixed-methods approach. The quantitative data were analyzed using STATA statistical software. The qualitative data were analyzed by via identification of categories and themes using the constant comparison method using MAXQDA software.

**Survey Results.** The survey was sent out to 1,032 pre-qualified female participants with previous breastfeeding experience residing within various parts of the United States. Ages of the participants ranged from 18-50 years of age. Participants varied in ethnicity with the largest percentage of respondents indicating White/European American ethnicity (67%) followed by African American/Black (9%), Asian (8%), Hispanic/Latino (7%), and other ethnicities (1%). Responses indicated a period of 3-6 months as the most popular choice for length of time spent breastfeeding, with a total population percentage response of 21%. Closely following that was the 9-12 month range, holding 20% of the population responses. The majority of participants indicated

that they had 1-2 children (73%) and ages of children ranged anywhere from 1 month-20 years of age. Of the 1,031 participants, 85% noted they had previous experience with purchasing or wearing nursing bras, and 70% of 875 participants purchased 1-5 nursing bras while breastfeeding.

Participants were asked to indicate their experiences with common breastfeeding issues, such as yeast infections, leaking milk, and changes in bra size during breastfeeding. There were 19% of the 876 participants who reported previous experience with a yeast infection. Of the 161 participants who conveyed the amount of times they had experienced yeast infections during breastfeeding, 86% experienced a total of 1-5 infections. However, the highest number of yeast infections experienced during breastfeeding by a participant was 34 times. Another common issue associated with breastfeeding is the leaking of milk, and 90% of 875 women in the study reported having experienced this issue. Additionally, 88% of the 875 women stated that they had used a nursing pad to prevent milk from leaking. Typical responses from 774 of the women regarding how often the nursing pad was used or changed ranged from twice a day (36%) to once every few hours (35%). Disposable non-fabric nursing pads were used by 60% of the 774 participants, while 38% used washable cotton nursing pads. Over half of the participants reported change in bra band size, while 74% of 1,030 participants reported a change in bra cup size, anywhere from 1-4 full cup sizes.

While function is the primary focus of nursing bras, aesthetics are also important and impact the purchasing behavior of consumers. When asked if they cared about the overall aesthetic of a nursing bra, 59% of 875 participants responded *yes*, indicating the need for a further assessment of these preferences. The participants were also asked to report their personal preferences regarding the following characteristics of nursing bras: color, print, style/fit, purchasing factors, cup style, cup opening, wires, and fabrics. The main theme from the responses on color preference is that the nursing mothers preferred to wear neutral colors, rationalizing the choice as neutrals not only go well with any clothing, but also because the leakage and stains are less apparent with the neutral color bras. Over half of the participants liked wearing solid colors rather than prints. Regarding the bra constructions, one third of participants preferred no inserted cups, and over half of participants liked a top cup opening and no metal wires. Wearing organic cotton was a preference among 44% of 876 participants. There were 50% of 863 participants who considered comfort the primary purchasing factor when they shopped for nursing bras. When we asked what they liked about some of the nursing bras they tried in the past, the majority of participants stated that comfort and easy access were their top considerations.

**Conclusion and Future Study.** This study provides rich data for bra designers and researchers to better understand the breastfeeding issues and customers' preferences. Even though the breastfeeding mothers only wear a nursing bra for a few months to a year, there are high expectations from the nursing mothers to have a nursing bra that is comfortable, functional, and aesthetically pleasing. Future research will center on developing a marketable nursing bra and absorbent breast pad to meet the needs of nursing mothers and help to prevent common issues associated with breastfeeding.

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Page 2 of 3

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