

Twitter data unveils issues nursing mothers face, informs proposed interventions

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Social media has become a platform for new mothers to openly share their experiences of the joys and challenges of parenthood. Researchers at Penn State and Dalhousie University have unraveled the sentiments in

nursing mothers' tweets to better understand the factors influencing breastfeeding behaviors. They hope the findings can inform policies and interventions to support and improve resources for nursing mothers, such as breastfeeding support, workplace accommodations and technological aids such as apps.

"We are getting the raw sentiment of nursing mothers without putting them in a controlled experiment environment where their views could become biased," said Richard Lomotey, assistant professor of information sciences and technology at Penn State Beaver. "We are getting the real frustrations and joys experienced by these lactating mothers, which can help us to really explore the questions on the ground and the interventions that can be proposed to assist in this regard."

In the study, the researchers collected more than 19,000 [breastfeeding](#)-related tweets. Using existing lexicon-based tools and new machine learning classifiers that they developed, they classified the data to predict the sentiment polarity—whether the text was positive or negative—of the behavior described in each tweet.

The negative issues tweeted about by nursing mothers run the gamut, from latching problems and low milk supply, to postpartum depression and lack of support, to criticism over public breastfeeding. Positive tweets highlighted perceived benefits of breastfeeding, such as mother-child bonding, nutritional value and access to breastfeeding resources.

In all, 29 negative themes and 21 positive themes were identified. While the majority of the factors affecting breastfeeding behaviors negatively have been reported in existing literature—such as latching problems and short maternity leave—the researchers' analysis uncovered some new factors that have not previously been studied, including the deliberate decision to not breastfeed and fear of biting.

"Breastfeeding is a very popular issue, but you don't see public health officials and policy makers discussing it publicly or public engagement on this topic," said Lomotey. "Yet, it's a very important issue from a health perspective. So that's one of the driving factors in this project, to explore these issues that are being swept under the carpet and certainly considered a public taboo in some regions."

The researchers then placed the themes they identified into four negative categories of health-related issues, social factors, [psychological factors](#) and situational factors; and four positive categories of perceived benefits, maternal self-efficacy, social support, and education and training support.

"We highlighted a lot of issues that impact breastfeeding women, and we're not going to be able to address them all," said Rita Orji, associate professor of computer science at Dalhousie University. "But we want to put this out there so that policymakers and leaders at workplaces and schools can begin to engage with these topics and begin to highlight the issues that exist that impact women, as well as possible solutions."

In their paper, the researchers also propose various interventions that address the negative factors to propose positive breastfeeding behaviors. For example, mothers facing [social factors](#) such as lack of lactation rooms at work could benefit from technological interventions for delivering public awareness and sensitization programs designed to increase employer's awareness on the need to create a breastfeeding-friendly workplace.

"Many mothers have conflicting interests of a baby and a career, and this is something that fundamentally needs to be addressed," said Orji. "We want to create a strong workforce that accommodates women and empowers them to succeed—especially while they're breastfeeding, which is a right and a natural phenomenon in a woman's life."

While this study focused solely on issues that breastfeeding [mothers](#) face, the researchers say that the methodology they applied could be used across a number of societal issues that people talk about on [social media](#).

More information: Oladapo Oyebode et al, "I Tried to Breastfeed but...": Exploring Factors Influencing Breastfeeding Behaviours Based on Tweets Using Machine Learning and Thematic Analysis, *IEEE Access* (2021). [DOI: 10.1109/ACCESS.2021.3073079](https://doi.org/10.1109/ACCESS.2021.3073079)

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