Social Media in Facilitating Technologies for Postpartum Wellness

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Abstract
We discuss the harnessing of social media activities and emotion in the development of HCI technologies that can promote healthful living and wellness in new mothers.

Author Keywords
childbirth, depression, emotion, PPD, social media, Twitter, wellness

Introduction
Birth of a child constitutes one of the most significant happenings in the lives of many women. New mothers undergo a number of changes during postpartum, that often include disruption of daily routines, and imminent adjustments in personal and professional lives. First time mothers may be particularly challenged with navigating the new, complex realm of caring for their newborn. Additionally, approximately 25% - 85% of postpartum women experience the “baby blues” for a few days, a temporary condition involving mild mood instability, anxiety, and depression. A portion of the new mothers, between 7% and 17% also experience more severe concerns, known as postpartum depression (PPD), a form of depression that typically begins in the first month after giving birth and is characterized by symptoms including sadness, guilt, exhaustion, and anxiety [3].
In this position paper, we discuss how we can leverage social media activity “footprints” of new mothers into designing technologies that can help them navigate this important period of their life, thereby promoting postpartum wellness.

**Motivation**
Why social media? Our key observation is that social media can act as a record and sensor of a person’s behaviors, thoughts, and emotions in response to the events in their life. Whether in the form of explicit commentary, patterns of posting, or in the subtleties of language used, social media posts bear the potential to offer cues as to how a person is affected by life events. With adequate technological support, these cues can potentially be utilized by individuals to reflect on their own past behavior, and to have the opportunity to make positive changes in their lives as the situation may demand, which may otherwise be challenging.

Within the context of new mothers, we are motivated by prior research wherein we examined the value of harnessing social media signals in characterizing changes in new mothers, along three dimensions: patterns of posting, linguistic style, and emotional expression [1]. These measures were used to illustrate and forecast (through the development of predictive machine learning models) the behavior of a cohort of new mothers who showed large postpartum changes, including increases in indicators of negative emotion and lowered posting volume [2].

**Design Implications in HCI**
Such ability to illustrate, model and predict extreme behavioral changes in new mothers using their social media data, shows promise in the design and deployment of next-generation postpartum wellness facilitating technologies. We envision software applications and services that can serve as early warning systems providing personalized alerts and information. Running in a personalized service or privately within a smartphone application, these tools may provide value over traditional methods used for keeping track of new mothers’ health and vitality. They can even assign a “risk score” to mothers based on predictions made about forthcoming extreme changes in their behavior and mood. In operation, if inferred likelihoods of forthcoming extreme changes surpass a threshold, mothers could be warned or engaged, and information might be provided about professional assistance and/or the value of social and emotional support from friends and family.

In essence, leveraging social media, we envision tools that can perhaps enable adjuvant diagnosis of postnatal disorders, complementary to survey based approaches (e.g., Edinburgh Postnatal Depression Scale [4]).

**References**