

# “Am I doing this wrong?” Breastfeeding mothers' use of an online forum

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## Abstract

As mothers seek out information around breastfeeding, many are turning to online message boards, listservs, or social media for advice. Babycenter.com, a parenting website with widespread use, hosts a Breastfeeding Support and Help community forum with over 140,000 users and more than one million conversation threads. The purpose of this study is to examine this online support forum to understand the information seeking and sharing practices of its users. We extracted a total of 258 original posts and 1,445 corresponding comments from Babycenter.com's breastfeeding forum posted over a 10-day period. Using content analysis, we coded the posts into 15 categories reflective of the types of information users were seeking. We then randomly selected 45 conversation threads across the most popular categories to further understand how users were sharing information. The most popular breastfeeding topics for which users sought out information included feeding challenges, supply issues, feeding schedule and duration, pumping, physical health, excretion issues, storing milk, nipple issues, and general breastfeeding questions. Participants elicited information from others using interviewing questions and built consensus around issues by agreeing with previous posts. They shared their knowledge and personal breastfeeding experiences and also provided encouragement to continue breastfeeding and overcome challenges. Online support forums are actively being used by breastfeeding mothers seeking information from others with similar experiences. This presents an important resource for breastfeeding mothers and may, therefore, be an important component of future breastfeeding interventions.

## KEYWORDS

breastfeeding confidence, breastfeeding duration, breastfeeding knowledge, breastfeeding promotion, breastfeeding support, qualitative methods

## 1 | INTRODUCTION

Breastfeeding has consistently been shown to be an exceptional preventive intervention for infants and mothers alike (Gartner et al.,

2005). A Lancet series dedicated specifically to breastfeeding outlines the widespread benefits of the “personalised medicine provided by human milk” (Victora et al., 2016), which include protection against morbidity and mortality, fewer dental malocclusions, higher

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intelligence, and probable reduction in obesity and diabetes for breastfed children compared with children who are breastfed for shorter periods, or not at all. For nursing women, breastfeeding reduces the risk of breast cancer, improves birth spacing, and might also reduce the risk of ovarian cancer and diabetes (Victora et al., 2016). The American Academy of Pediatrics recommends that infants be exclusively breastfed for the first 6 months of life, with continued breastfeeding alongside the introduction of complementary foods for at least 1 year (Gartner et al., 2005). Despite these recommendations, data from the Center for Disease Control and Prevention's 2018 Breastfeeding Report Card indicate that less than 50% of infants in the United States were exclusively breastfed through 3 months and about 25% were exclusively breastfed through 6 months (Centers for Disease Control and Prevention, 2018).

The low prevalence of breastfeeding has not always been a problem; up until the 19th century, breastfeeding was universal (Brady, 2012). Breastfeeding became less common in high-income countries in the 20th century with the introduction of breast milk substitutes (Rollins et al., 2016). These substitutes were perceived as “modern and prestigious (p. 491)” and breastfeeding as “poor and unsophisticated (p. 491),” and soon more educated, urban women in lower and middle-income countries were following the bottle feeding practices of women in high-income countries (Rollins et al., 2016). With the decline of breastfeeding, generations of knowledge around this health behaviour were also diminished. Now, as mothers seek out information around breastfeeding, many are turning to online message boards, listservs, or social media for advice (Jang, Dworkin, & Hessel, 2015; Plantin & Daneback, 2009; Porter & Ispa, 2013).

The online exchange of ideas and experiences allows mothers to connect with others sharing their same life transition through either active dialogue or passive reading (Madge & O'connor, 2006). With many women returning to work, soliciting advice from friends or family with small children may not be an easy option (Cowie, Hill, & Robinson, 2011). Online networks allow mothers to find others experiencing the same life transition, express the challenges they are experiencing and work through solutions together (Porter & Ispa, 2013). Online support groups can be likened to face-to-face support groups in that participants share experiential knowledge and can, in turn, be met with opinions and advice (Doyle, 2013). Furthermore, participation in electronic support groups provides access to information that is always available without the barriers of attending in-person support groups like travel time and childcare (Cowie et al., 2011).

Four key studies have examined breastfeeding support via the internet. Gribble (2001) surveyed members of a listserv for women wishing to breastfeed their adopted children. Findings indicated that the listserv helped women overcome geographical isolation and lack of appropriate information and served as a source of social support. Cowie et al. (2011) examined the Australian Breastfeeding Association Forum to describe ways in which parents and volunteer peer moderators used the online discussion board for breastfeeding support. Although mothers used the forum for emotional support, the majority of topics discussed were related to general parenting and household

### Key messages

- Despite the vast amount of health information online, women are using the internet to solicit and provide information on breastfeeding from each other.
- Although social support plays a role in the way information is shared, most women on an online support group were seeking logistical information as to how to successfully breastfeed.
- Others responded to questions about breastfeeding by sharing their own knowledge and experience and creating an interviewing dialogue.
- With the increased use of smartphones, online social networking is becoming an important resource for breastfeeding mothers and may, therefore, be strategically integrated into future breastfeeding interventions to increase rates of breastfeeding.

management. West et al. (2011) examined the utility of blogs to promote breastfeeding. Their findings demonstrated that when compared with personal blogs, industry-affiliated blogs (e.g., blogs affiliated with companies that sell maternity clothes) appeared to provide more support as determined by the greater presence of behaviour change constructs (e.g., behavioural cues, praise). Another study recruited breastfeeding mothers of preterm infants to participate in a social media (Facebook) support group (Niela-Vilén, Axelin, Melender, & Salanterä, 2015). Mothers experienced paradoxical support at the hospital, such that discharge was often promoted at the expense of breastfeeding and pumping was overly emphasised. Breastfeeding at home felt less manageable, and the ability to breastfeed made mothers feel empowered when they were successful and disappointed when they were not. These studies demonstrate the wide range of internet use to support breastfeeding.

Although the internet was mostly available at a stationary computer in the early 2000s, smartphone ownership has become nearly ubiquitous, enabling women to access support forums although simultaneously breastfeeding. At least 7% of mobile health apps target women's health and pregnancy (Intercontinental Medical Statistics Institute for Healthcare Informatics, 2015). The aim of the present study was to examine the ways in which mothers use a popular online discussion board for information seeking and sharing around breastfeeding. Specifically, we sought to identify the types of questions posted to the forum, the frequency of topics discussed, and the ways users responded.

## 2 | METHODS

The discussion board used for this study was the Breastfeeding Support and Help community forum on Babycenter.com, located at

[https://community.babycenter.com/groups/a25215/breastfeeding\\_support\\_and\\_help](https://community.babycenter.com/groups/a25215/breastfeeding_support_and_help). In studies seeking to understand trusted sources for paediatric health sources, Babycenter.com has been regarded as a popular internet resource (Bernhardt & Felter, 2004; Criss et al., 2015). The website was started in 1996, sold to Johnson & Johnson in 2001, and now has an international presence across 14 countries with locally tailored information (Johnson, 2004; Johnson, 2015). Babycenter.com is one of the most visited sites for information regarding child rearing with 3.97 million monthly unique visitors (as of June 2019) compared with similar websites including whattoexpect.com, thebump.com, and parents.com with 1.5 million, 1.9 million, and 2.2 million monthly unique visitors, respectively (Alexa, 2019). Approximately 45% of the users reside in the United States. The website is organised with information and resources about pregnancy and children by developmental stage. It also includes advertisements that link to different retail stores. One of its major components is community forums where users can join groups related to their interests such as "Trying to Conceive" and "Baby Names." Babycenter.com's Breastfeeding Support and Help community forum is currently the most popular baby community group with over 140,000 users and more than a million conversation threads. On these forums, users post questions and comments to solicit advice and input from other users.

For ease of understanding our specific procedures, we have defined key terms related to forum participation: (a) The "original post" is the original inquiry posted by a user on the forum that includes a short title followed by the actual question/issue; (b) "corresponding comments" include all commentary that follows the original post, such as responses from other users or the user of the original post; and (c) a "conversation thread" includes both the original post and all corresponding comments.

## 2.1 | Sample

We extracted a total of 258 original posts and their 1,445 corresponding comments from Babycenter.com's breastfeeding support forum posted over a 10-day period in August 2017. Informed consent was not sought because this is a public forum and has been deemed neither possible nor necessary (Sugiura, Wiles, & Pope, 2017). We saved each conversation thread as an individual transcript and created a spreadsheet with the original post's title along with the number of corresponding comments for each conversation thread. Of the 258 original posts, only six were excluded due to not being breastfeeding related. After the lead author familiarised herself with the forum and understood the fast pace at which users post and respond, we determined that 10 days of data provided a sufficiently representative sample of the types of posts and comments typically made on this forum.

## 2.2 | Data analysis

We used the conventional approach to content analysis to analyse the original posts and their corresponding comments. In accordance with

this approach, categories emerge directly from the text data as it is analysed rather than from the use of preconceived categories (Hsieh & Shannon, 2005). Analyses were conducted in two phases: one to classify original posts (information seeking) and the other to classify corresponding comments (information sharing).

### 2.2.1 | Information sharing (original posts)

The first phase of the analyses considered the original posts, or users' information seeking questions. After reading all posts, one investigator (CL) developed a codebook to categorise the content of these posts (e.g., latching issues, pumping, nursing supplements). Three independent coders (CL, DE, & LA) subsequently coded original posts in pair teams. The minimum for reproducibility was set at 80% agreement. After reaching only 63% agreement in an initial round of coding, the codebook was revised by adding and clarifying existing categories. Posts were recoded, 83% agreement was reached, and remaining disagreements were settled through discussions to achieve consensus. The finalised codebook had a total of 15 categories.

### 2.2.2 | Information seeking (corresponding comments)

The second phase of the analyses considered the corresponding comments to the original posts, or the information sharing responses. In order to select which conversation threads to code, we first organised the 15 aforementioned categories by popularity based on the number of conversation threads in each category. To maximise the richness of our data, we decided to extract information from the categories with the most dialogue or a minimum of 10 conversation threads only. Of the 15 categories, nine categories met this criterion. From those nine categories, we decided to select five conversation threads per category to code: the top three most commented conversations and then two additional conversations randomly selected using a random number generator. Only conversation threads with a minimum of three corresponding comments were included in the random selection process. This process resulted in a sample of 45 separate conversation threads with an average of 11 comments per thread. Overall, this combination of selecting both popular and random conversations allowed us to analyse rich, representative data. We also decided to code a relatively high number of conversation threads so that we would reach data saturation or the point at which no (or very few) new themes emerge. Previous literature indicates that saturation in qualitative studies can be reached by analysing ~3 focus group transcripts and ~12 individual interview transcripts (Guest, Bunce, & Johnson, 2006; Guest, Namey, & McKenna, 2017).

The information sharing codebook was developed by CL and LA based on an initial analysis of 15% of the conversations. Two raters subsequently coded each transcript independently, and we calculated reproducibility. Again, the minimum for reproducibility was set at 80%. We achieved 85% agreement across the 45 transcripts and settled remaining disagreements through discussion to achieve consensus. We then uploaded transcripts and codes to Dedoose (Dedoose

Version 8.0.35, 2018), a web application used for analysing qualitative and mixed methods research data. We used Dedoose to examine the frequency of each individual code as well as the number of transcripts that included that code. We also analysed code co-occurrence. This allowed us to better understand how users were responding and develop overarching themes.

### 3 | RESULTS

#### 3.1 | Information seeking

See Table 1 for a summary of breastfeeding information seeking categories, including frequencies and mean number of original posts and corresponding comments in each category. Illustrative quotes may be found in the text below, with grammatical and spelling errors left exactly as they appeared on the message boards. Babycenter.com spells out popular acronyms in parentheses; if this was not done, we did the same using brackets. In this article, we report only on categories represented by at least 10 conversation threads, which as mentioned earlier resulted in nine categories.

##### 3.1.1 | Original posts related to nursing

###### Feeding challenges

Users' original posts were most often related to feeding challenges. The most common questions were related to babies' preference for the bottle versus the breast. Some stated that their baby was outright refusing to nurse, and they were concerned about it affecting the continuance of breastfeeding:

What's up with this? My girl will be 6 months real soon and we BF [breastfeed]. she's in daycare during the week and gets bottles of BM and we have started introducing veggies this last week. (Shes been doing cereal on weekends for awhile) since Friday she has

been refusing my breast during the day but has no problems at night. Is this normal? Is there a reason for it? I'm just confused. I don't like to give her bottles when we're together but the last 3 days it seems to be the only thing she wants

Others had the opposite experience, with their baby preferring the breast; their concerns centred around having to leave their babies with others and their babies refusing to eat. Some other feeding concerns included issues such as continuous spit up, sleepy eaters, and having a powerful milk letdown.

###### Supply issues

Original posts related to supply issues were the next most frequently posted. Women were asking about what to do on both ends of the spectrum: oversupply and undersupply. For example, one user asked,

Is anyone having issues with baby getting too much breast milk? My little girl spits up anytime we lay her flat (reflux we believe) even after burping and having her upright for 30 or more minutes. She also gets gas pains and that from being so full. Pediatrician told us to limit intake less more frequently. I've tried pumping to compare how much she's getting per time frame but it's difficult to tell with her suction compared to the pump. I have plenty of milk and if I let her feed longer then 15-20 mins she spits/vomits it all up. You can over feed while breast feeding! Any advice and help is appreciated. Little one is 10 days old and is already pass her birth weight.

The majority of mothers were concerned that they were not producing enough milk or were experiencing a sudden drop in their supply. Others were concerned that their oversupply made nursing uncomfortable for both their baby and themselves.

**TABLE 1** Information seeking practices of breastfeeding mothers on an online discussion forum

Theme	Frequency	Mean comments per thread	SD	Examples of conversation title <sup>a</sup>
Original posts related to nursing				
Feeding challenges	43	5.2	5.3	Baby refusing the breast
Supply issues	30	5.6	12.2	Oversupply?
Feeding schedule and duration	27	7.6	14.8	How often
Excretion issues	13	2.5	2.7	Breastfed baby poop advice needed!!!
General breast feeding	28	6.1	4.5	Helping kids understand?
Original posts about expressed milk				
Pumping	24	3.9	3.4	Pumping help???
Storing milk	13	2.5	2.7	Storing breast milk
Original posts about nursing effects on mother				
Physical health	18	5	7.3	Chronic plugged ducts
Nipple	13	6.5	12.4	Teeth scraping my areola—OUCH!

<sup>a</sup>Title posts are direct quotes and are therefore unaltered.

### Feeding schedule and duration

Mothers expressed concerns specific to feeding schedule and duration. They asked questions about cluster feeding, how long nursing sessions should last, how long to go between nursing session, how often to nurse at nighttime, and whether to wake up their sleeping child to nurse. For example:

My son is 6 months old and EBF (*extended breastfeeding, exclusively breastfeeding*) he just started BLW (*baby-led weaning*) a week ago so he isn't eating a lot mainly just playing around. He is still breastfeeding about every two hours and most nights will actually only go about 3 hours at a time before waking up to eat. Should I be pushing him to take bigger gaps between feedings? We would really like to have more sleep at night and I'm wondering if this would help?

### Excretion

Several mothers had questions about what normal excretion looked like for breastfed babies, even posting pictures of their child's dirty diapers. The colour of the faeces was the most concerning issue for mothers:

My baby is 6 days old and is breastfed. His bowel movements all contain this green algae looking stuff. I read online this could be caused by him only receiving foremilk and he should nurse longer. He is already nursing for 40/45 min on one side and 20/25 min on the other side each time. Is this really the cause of the green stuff? If so, what can I do to ensure he is receiving hindmilk as well? --Post included picture of soiled diaper

### General breastfeeding questions

General breastfeeding questions were placed in a category all their own if they did not fit in the other categories. Examples included how to supplement with formula, which bottles were best for breastfeeding, when to introduce a pacifier, which nursing bras work best and even how to explain breastfeeding to their older children:

Maybe a bit off topic for the board (sorry if it is) but I'm 30 weeks right now with my third. I had my first conversation with my girls tonight about breastfeeding. They are 5 and 6. My oldest I never tried because I was 20 and just scared. I listened to everyone say oh formula is fine! My second I was more open and tried but ended up stopping due to personal reasons. This time I'm determined to do this. Anyway, my 5 year old didn't seem to care. She just went back to playing. My oldest however was a little freaked out. She said "ew mom that's weird." She's never been exposed to it so I can't say I blame her reaction. She was not even two when I had her sister

so she wouldn't remember it. All she knows is what she's seen. Babies=bottles. I plan to pump some and let her feed because I know it's important to her but is there anyway I can get her more comfortable with the idea? She won't be around for most feedings since she's at school most of the day but I don't want her to be uncomfortable at home.

## 3.1.2 | Original posts about expressed milk

### Pumping

The questions about pumping were mostly focused on the logistics of pumping: how to pump, when to pump, where to pump, which pumps to use, how to clean a pump and so forth:

Hey ladies I need help I am going to back next week totally unexpected and really not ready. I have no stash stocked up I have just been feeding my LO (*little one*) on demand and he's going to be 7 weeks tomorrow. I am going to obviously start pumping after our morning sessions from here on out hoping that will be enough for DH (*dear husband*) while I'm gone. But my question is I am going to be working over night from 7 pm to 7 am so how many times do I pump because when I'm home he will eat probably 3 times in between that time but he hasn't been nursing a whole lot in the middle of the night because he's been sleeping through. How many times should I pump during a 12 hr shift??? Pleas help and thank you. And will this ruin my supply if he needs to cluster feed???

### Milk storage

Questions around storing milk centred on how long expressed milk can stay at room temperature, in the refrigerator, or in the freezer. For example:

So I read breast milk is good 3-5 days in the fridge and sometimes I read up to 8 days. Which one is correct and does breast milk smell bad when its no good? Also, if I had breast milk in the fridge 3 days or so, and it's still good, is it to late to freeze it, or can i? TIA [thanks in advance].

There were also a few concerns around travelling with expressed milk.

## 3.1.3 | Original posts about nursing effects on mother

### Physical health

Almost all of the questions regarding physical health were about lumps in the breasts. Women were concerned that lumps could be swollen lymph nodes or clogged milk ducts:

I nurse 2-3 hrs during the day, wake up to pump in the night after no more than 4 hours because my LO (*little one*) sleeps 6-7 hrs, and yet I get plugged ducts ALL THE TIME. Like at least one a week. In either breast, and not always in the same place. I'm taking lecithin and have reduced saturated fats. But I mean, come on! Anyone else experiencing this? How can I stop this??

Other questions about physical health were related to mammograms while breastfeeding, breastfeeding after a breast reduction, or how poly-cystic ovarian syndrome can affect breastfeeding.

### Nipple

Many expressed issues with sore nipples and were seeking out advice as to how to heal them while breastfeeding. Mothers additionally had complaints about how teething was hurting their nipples:

So my LO (*little one*) has been teething since he was 3 months old (he's almost 9 months now) and we haven't had too many problems other than a bite here and there. Well his top two teeth came in and at first it was fine but they've grown and dropped down significantly and now they are scraping my areola when he eats on my left side. It hurts sooooo bad I can't stand it anymore. I have this awful sore on my left breast. I don't know what to do. I tried the football hold but he just isn't very good at it and isn't able to drain the breast like he can the normal way. I am thinking of just feeding him on the right side and then pumping the left and feeding it to him but that seems like a lot of extra work and time. Ugh. I thought we were finally getting the hang of this. HELP!!!

## 3.2 | Information sharing

The second phase of analysis was based on users' responses as corresponding comments in a subset of the conversation threads. Of the 45 transcripts sample, 44 unique usernames contributed original posts. As for the responses, 274 unique contributors left a total of 509 comments. Single users made anywhere from one to seven comments, with an average of 1.31 ( $SD = 0.89$ ) comments per user. We organised the results based on what users were responding (the content) and how users were responding (the process). Illustrative quotations pertaining to each domain and theme may be found in the text below.

### 3.2.1 | Content

With regard to the content of information sharing, three themes emerged: Users shared their knowledge, experiences, and encouragement. Knowledge came in the form of advocacy and resources.

Mothers provided arguments in favour of breastfeeding, stating things such as, "There are amazing socioemotional benefits in the comfort and security it provides." Many correctly identified paediatric recommendations for breastfeeding and others shared familial or cultural knowledge that was passed down to them. Often facts were given without references to sources but many times responders provided suggestions for books, videos, or websites:

"Here is a calculator from Kellymom to help decide what you will need to leave with baby and IL (in-law). [kellymom.com/bf/pumpingmoms/pumping...](http://kellymom.com/bf/pumpingmoms/pumping...) Also talk to IL (in-law) about paced feeding to help with amount LO (*little one*) takes in." The majority explained that their knowledge came to them through experience. They spoke of what worked for them with their children and provided clear instructions. Those instructions were often explicit directives (e.g., "Let him nurse when he needs/wants to ...") and "Your need to pump is legally protected under Obamacare/ACA regulations. Assert your right."), but many times responders actually advised mothers to seek out medical help either via their doctor or a lactation consultant. Mothers also spoke about their experiences with breastfeeding equipment, often giving reviews on pumps, bottles, and pacifiers, such as, "I almost give up on the bottles until someone here encourage me to try MAM....and that is the bottle my LO (*little one*) will take!" Many followed up their advice with words of encouragement and praise like "keep it up," "it gets easier," and "I know how you feel."

### 3.2.2 | Process

With regard to the process of information sharing, an additional two themes emerged: using interviewing questions and agreeing with previous posts. Interviewing questions were often focused on troubleshooting, where responders would ask mothers if they had tried certain methods or products (e.g., "Have you tried to power pump or take milk teas or fenugreek?") Users also asked others to clarify their comments or expand on their questions so as to provide better advice like, "How many times each day are you pumping? What pump are you using? How long do you pump each session?" Often this would start a back-and-forth discussion between the original poster and the responder where the original poster would answer these interviewing questions and then responders could tailor their advice. One original poster responded, "Honestly, my job is so hectic that I am worried about adding pumping to my schedule and keeping my sanity. LOL. Thanks everyone though! How long before my leave ends should I begin to wean myself?" Another way users would share information was to build consensus using the forum by agreeing with other comments. The acronym "PP" for previous poster was used to specify that the user was referring to a previous comment made by another user. Typically, users indicated that they agreed with the PP and then shared experience or knowledge to indicate why, such as "As long as your babe is peeing and pooping it is probably a growth spurt like pp said!"

## 4 | DISCUSSION

In this article, we examined the information seeking and sharing practices of mothers on an online breastfeeding support forum. Through a content analysis of breastfeeding concerns and questions expressed on Babycenter.com's Breastfeeding Support and Help online community boards, we were able to evaluate the kinds of questions mothers posted and the content and process they used to respond. This study is particularly innovative because although many have examined mother's online information seeking (Bernhardt & Felter, 2004; Jang et al., 2015; Porter & Ispa, 2013; Ruthven, Buchanan, & Jardine, 2018), none have examined how women seek and respond to breastfeeding information via online discussion forums. Our results demonstrate that women on an online breastfeeding forum are seeking logistical information related to the how-tos of breastfeeding from other mothers. Additionally, women are responding with knowledge, experience, and encouragement and are building up their responses by asking interviewing questions and agreeing with other commenters.

### 4.1 | Information seeking (original posts)

With regard to information seeking, topics were categorised by popularity into the following themes: feeding challenges, supply issues, feeding schedule and duration, pumping, physical health, excretion issues, storing milk, nipple issues, and general breastfeeding questions. In contrast to Cowie et al.'s (2011) findings, which indicated that women used the breastfeeding discussion board for emotional support, our findings show that women are more inclined to ask for procedural or operational advice and want information specific to the issues they are facing. This finding is consistent with a study conducted on two online message boards maintained by popular parenting magazines in the United States that noted that the domain with the largest number of postings was feeding/eating and that parents of infants were particularly concerned with breast milk or formula amounts and schedules (Porter & Ispa, 2013). More recently, a study conducted using Babycenter.com on pumping reported on the types of questions mothers posted to a discussion board. Researchers found that women were unsure of adequate amounts of milk, scheduling feedings, and were concerned about their supply (Yamada, Rasmussen, & Felice, 2019). These results, along with ours, are indicative of the lack of education around breastfeeding and the need for help to overcome the numerous challenges experienced. The Surgeon General's Call to Action to Support Breastfeeding specifies lack of knowledge as a barrier to successful breastfeeding, stating that women are uncertain about how to carry out breastfeeding (Health & Services, 2011): "Skills in how to hold and position a baby at the breast, how to achieve an effective latch, and other breastfeeding techniques may need to be taught (p.10)." Noteworthy is that Babycenter.com has a multitude of articles written to address many of the same topics addressed in the discussion board, yet women are still seeking out other mothers to discuss their specific issues on the same site. Jang et al. (2015) explain that traditional sources of information tend to be more didactic

descriptions of parenting which can be helpful for general inquiries. However, for the dynamic transition into parenthood, challenges like breastfeeding are better explained through experience-based dialogue.

### 4.2 | Information giving (corresponding comments)

#### 4.2.1 | Content

Findings from our study indicated that the content of information shared centred on users' previous knowledge and experience. Users served as advocates for breastfeeding and provided one another with resources, such as suggested books and websites. An older account of mothers' discussion boards found that women gave instrumental support through providing both informal (i.e., advice) and formal (i.e., from professional experts or organisations) information (Drentea & Moren-Cross, 2005). The authors of this study stated that women sharing their experiences gave other mothers a sense of what may be considered "normal" for a child in that age range as well as tips that would have otherwise not be received had they not been participating in this type of discussion board. One specific way experience was conveyed was through reviews of breastfeeding equipment. Johns and English (2014) found that brand communication among mothers online is high and influences consumer behaviour. Another way mothers in our study shared their experience was through providing instructions (i.e., explicit directives, advice to seek medical help). It is important to note that we did not evaluate the accuracy in the advice being given because often women suggested home remedies and herbal galactagogues, and because many have not been rigorously studied, they cannot be commented on one way or the other (Bazzano et al., 2017; Sim, Hattingh, Sherriff, & Tee, 2014; Yamada et al., 2019). Notably (and perhaps another reason women seem to be turning to one another on these issues), there are no existing national guidelines on most of these issues. Because the American Academy of Pediatrics' official recommendations only mention exclusivity and duration of breastfeeding, we ultimately decided that this exercise would be futile.

Advice and accounts of mother's experiences were often concluded with encouraging remarks such as "you are doing great" and "keep it up, momma." This kind of positive support can have an impact on breastfeeding, as social support has a well-established association with breastfeeding initiation and duration (Britton, McCormick, Renfrew, Wade, & King, 2007). The overwhelming amount of support that emerged in our study was an unexpected finding as the general societal consensus seems to be that the internet is full of "mommy-shame," where mothers criticise the parenting decisions others have made (Abetz & Moore, 2018). In fact, of the 509 comments made, only 14 were coded as argumentative and were mostly centred around the acceptability of giving an infant water. It has been widely cited that women often seek social support on these websites (Lupton, Pederesen, & Thomas, 2016; Niela-Vilén, Axelin, Salanterä, & Melender, 2014; Plantin & Daneback, 2009). Interestingly, although we found that women were going to the forum to discuss the technicalities around breastfeeding, responders understood the importance of coupling advice with encouragement (Graffy & Taylor, 2005).

### 4.2.2 | Process

With regard to the process of information sharing, users responded to one another with interviewing questions to clarify their comment or expand on their questions so as to provide better advice. They also built consensus on the forum by agreeing with or endorsing other user comments. Researchers examining online communication have found that statements making reference to other's comments and open-ended questions are frequently used in online support behaviour (Fahy, 2003). This type of conversational language similar to face-to-face communication has been found to help extend dialogue online (Jeong, 2006).

### 4.2.3 | Implications

Overall, the concerns women brought to the discussion forum, like inadequate supply or difficulty feeding at the breast, are often the reasons women cite for breastfeeding discontinuation (Ahluwalia, Morrow, & Hsia, 2005; Li, Fein, Chen, & Grummer-Strawn, 2008; Wagner, Chantry, Dewey, & Nommsen-Rivers, 2013). If mothers do not have the proper social support or knowledge of how to work through the challenges, breastfeeding can cease early on (Wagner et al., 2013). For example, women without knowledge of exclusive breastfeeding recommendations had a lower probability of breastfeeding compared with women with knowledge of breastfeeding recommendations (Wallenborn, Ihongbe, Rozario, & Masho, 2017). Similarly, mothers who believed that obstetric and paediatric care providers' favoured exclusive breastfeeding during the neonatal period had higher odds of exclusive breastfeeding until 3 months than those that perceived providers' preference to be neutral (Ramakrishnan, Oberg, & Kirby, 2014). Discussions with providers before birth may fill an important information gap by helping women understand the realities and challenges associated with breastfeeding and shape women's intentions to breastfeed (Kervin, Kemp, & Pulver, 2010). This is especially important as women's intentions to breastfeed are typically established during pregnancy and are strong predictors for initiation and duration (Ahluwalia et al., 2005; Rollins et al., 2016). Our findings show a conspicuous weakness in current medical care. Women need to receive this type of information as early on as possible and the support necessary from their providers in order to avoid many of the issues raised online.

Given women are already seeking breastfeeding information online from other breastfeeding women, it is logical to connect women with one another for support and knowledge. The risk of inaccurate and unreliable information, however, may hinder professionals' support of online support groups. As Tonsaker, Bartlett, and Trpkov (2014) pointed out, "patients might trust misleading information or might make important health decisions based on sensationalised or emotionally charged stories that are not relevant to their health context," and breastfeeding may be considered an emotionally charged issue (Raju, 2011). A recent study attempted to address this concern by providing a healthcare provider mediated social network group using Facebook (Cavalcanti, Cabral, de Toledo Vianna, & Osório, 2019). The

intervention group was provided with weekly education topics relevant to the process of breastfeeding and questions raised were answered by the research group, and members were invited and encouraged to discuss their concerns and share their experiences. The exclusive breastfeeding rates were for the intervention group were higher at every month postpartum, reaching 33.3% in the sixth month compared with 8.3% in the control group. This study illustrates that providing women with online peer and professional support can positively impact breastfeeding practices.

Several studies have emphasised the utilisation of online parenting forums across all facets of child rearing (Appleton, Fowler, & Brown, 2014; Milne, Weijjs, Haines-Saah, & McLaren, 2017; Pedersen & Lupton, 2018; Ruthven et al., 2018). Although some researchers have found that the dialogue on these virtual spaces can be contentious (Appleton et al., 2014), the majority note that they provide a positive means for mothers to express themselves and find the social support they are seeking (Cowie et al., 2011; Niela-Vilén et al., 2014; Pedersen & Lupton, 2018). Our findings support that these online spaces are being used for health information seeking and giving, and that health care professionals should consider leveraging this medium. These forums have unique strengths, including allowing for parents to get together despite geographic limitations or time constraints, and can offer valuable connections to parents who share similar challenges with regard to children's health. Recognising these important assets, future interventions should consider how to better integrate online forums or networks to campaign for, educate, and engage parents in healthy behaviours.

## 4.3 | Limitations and strengths

The current study has several limitations. Because the demographic characteristics of the participants are largely unknown, findings may not be generalizable to the larger population. Additionally, we do not know the impact of the online discussion forum on behavioural outcomes. Thus, further research would be necessary to identify if participation in online discussion forums relates to initiation, exclusivity, and duration of breastfeeding as well as attitudes and skills. This work also has several strengths. To our knowledge, this is the first study to analyse both the questions and responses women share with one another about breastfeeding online. This provides a unique perspective as it allows for the remote observation of women in their natural (digital) environment and does not constrain women to answer a formal set of questions or force interaction. Furthermore, the iterative process we used for decision-making in our methods was systematic and analyses were rigorous.

## 5 | CONCLUSION

Online support forums allow breastfeeding mothers to ask questions and receive quick responses from other mothers who have experienced similar situations. Mothers sought technical advice about the process of breastfeeding and others responded with knowledge,



experience, and encouragement using a conversational, accessible communication approach. With the increased use of smartphones, online social networking is becoming an important resource for breastfeeding mothers and may, therefore, be strategically integrated into future breastfeeding interventions to increase rates of breastfeeding.

## CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

## CONTRIBUTIONS

CL and SSG contributed to the conception, design, analysis, and interpretation of the data presented, as well as drafting a critical evaluation of the study findings. DE and LA contributed to the analysis, interpretation of the data, and writing of this manuscript.

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