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## Original Article

## Positive and negative experiences of breast pumping during the first 6 months

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**Abstract**

For mothers with breastfeeding difficulties, pumping can be recommended to help establish milk production. However, pumping may present some barriers to successful breastfeeding. Mothers with milk supply concern may be at higher risk of barriers to successful breastfeeding. No previous studies have described experiences of pumping among mothers with milk supply concern. We conducted 10 focus groups of 56 mothers who had milk supply concern in the first month after birth. A paid, trained facilitator led groups in a semi-structured approach. Sessions were audiorecorded and transcribed verbatim. The transcripts were coded independently by two investigators and analysed using grounded theory. We identified five themes related to the experience of pumping among mothers with milk supply concern: (1) additional control over breastfeeding from pumping: 'I would feed and then give him . . . whatever I could manage to pump to him'. (2) Painful experience: 'The first time I pumped my boobs hurt so bad'. (3) Pumped volume affected milk supply concern: 'Pump and there was hardly anything coming out that's when I started to worry'. (4) Pumping interfered with other nurturing activities: 'While you're pumping, you can't touch the baby'. (5) Frustration from inconsistent provider advice: 'They told me to pump . . . and then said, "That's going to cause your milk to increase too much" '. Mothers had positive and negative experiences with pumping. Clinicians should assess a mother's experience shortly after she initiates pumping, as further management and counselling may be necessary to avoid barriers to successful breastfeeding.

**Keywords:** breastfeeding, lactation, breast pumping, milk expression.

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**Introduction**

Breastfeeding prevents infectious and allergic disease throughout infancy, and breastfeeding for at least 12 months is recommended by the World Health Organization, the Centers for Disease Control and Prevention, and the American Academy of Pediatrics (Gartner *et al.* 2005; UNICEF/WHO 2006; Ip *et al.* 2007; Office of Disease Prevention and Health Promotion 2010). However, in the United States, although 75% of mothers initiate breastfeeding,

only 12% achieve the recommended duration of breastfeeding until at least 12 months of age (Centers for Disease Control and Prevention 2007). The most common reason given by mothers for early breastfeeding discontinuation is concern about the adequacy of their milk supply (Forman *et al.* 1992; Evans *et al.* 1995; Williams *et al.* 1999; Chan *et al.* 2000; Blyth *et al.* 2002; Colin & Scott 2002; Schwartz *et al.* 2002; Rempel 2004; Yang *et al.* 2004; Amir & Cwikel 2005; Lewallen *et al.* 2006). Because milk supply concern is such a common cause of breastfeeding

discontinuation, strategies for reducing maternal milk supply concern might contribute to improved breastfeeding duration.

Breast pumping has become common in the United States, with almost half of mothers using a breast pump in the first week after birth and 85% using a pump in the first 4 months (Labiner-Wolfe *et al.* 2008). However, maternal experiences of milk expression can vary. In previous qualitative work, Clemons & Amir (2010) described diverse maternal experiences regarding both hand expression and breast pumping, and Ryan *et al.* (2013) described how breast pumping and the use of expressed breast milk may contribute to the commodification of breastfeeding. Among five adolescent mothers, Smith *et al.* (2012) reported that pumping was reported as a more manageable experience than breastfeeding. However, Hurst *et al.* (2013) identified mainly negative experiences of breast pumping among mothers of very preterm infants receiving neonatal intensive care.

Varied experiences related to breast pumping may be associated with barriers to breastfeeding continuation. These barriers might be especially pronounced for mothers with milk supply concern because breast pumping allows mothers to visualize and quantify milk volume and might therefore affect maternal perception of milk supply. No previous studies have examined breast pumping experiences of mothers with milk supply concern. We examined qualitative data obtained from focus groups to describe experiences of breast pumping among mothers with milk supply concern.

## Methods

We conducted 10 focus groups of mothers with milk supply concern. Mothers in these focus groups were

asked open-ended questions about their perception of breastfeeding and milk supply and their experiences of interactions with clinicians regarding breastfeeding and formula use. The original study design focused on describing maternal experiences of clinical interactions regarding milk supply concern (Flaherman *et al.* 2012b). Mothers initiated discussion of breast pumping in the context of dialogue regarding clinical interactions. Investigators did not specifically query mothers about breast pumping. The facilitator probed topics at her discretion to facilitate maternal discussion but was not specifically asked to probe regarding pumping. Informed consent was obtained from all participants. The University of California San Francisco (UCSF) Committee on Human Research approved this project.

## Participants

We recruited participants to this study by distributing flyers in primary care sites, direct mailing to patients, posting on an electronic web site (<http://sfbay.craigslist.org>) and placing flyers in playgrounds and community centres. Eligible mothers had given birth to a healthy term infant in the past 2–6 months, were  $\geq 18$  years old, spoke English and had experienced milk supply concern in the first month after birth. Focus group sessions lasted 90 min, and participants received a \$50 gift card for the session. There were five to eight participants in 9 of the 10 focus groups; one group had only two participants. Mothers were permitted but not required to bring their babies to the focus group.

## Data collection

A single trained, independent, paid focus group facilitator conducted all 10 focus groups; she was not

### Key messages

- Breast pumping experiences may provoke strong emotional responses among mothers with milk supply concern.
- Mothers with milk supply concern have both positive and negative experiences with breast pumping.
- Breast pumping may be associated with barriers to successful breastfeeding continuation.
- A detailed clinical assessment of maternal experiences related to pumping could potentially improve the pumping experience and might lead to improve breastfeeding duration.

employed in health care or trained as a health care provider. Through a one-way mirror, the principal investigator (VJF) and a research assistant observed all meetings and took written notes. All participants were informed of the one-way mirror prior to signing informed consent. This mirror was used because the room available for the focus groups did not have space for the study investigators along with the facilitator and all mothers, babies and strollers. Meetings were audiorecorded.

### Data analysis

All recordings were professionally transcribed and subsequently entered into ATLAS.TI (version 6, ATLAS.ti Scientific Software Development GmbH, Berlin, Germany). VJF and KGH initially reviewed all audiorecordings and read and coded all transcripts line by line or paragraph by paragraph until categories emerged (Glaser 1978; Krueger & Casey 2000). During the process of generating an initial coding scheme, VJF and KGH examined links between categories, and similarities and differences between and among categories. As the initial coding scheme was developed, discrepancies were negotiated by consultation with KAL and were then resolved by consensus of all three investigators. In a similar consensus-based manner, major themes were identified, and the coding process was subsequently repeated using an incident-by-incident coding technique (Charmaz 2006).

Although the study was not initially intended to assess experiences of breast pumping, it was noted during the process of initial data analysis that multiple incidents in the transcript were related to breast pumping and coded as such. Therefore, once the initial analysis of all data related to milk supply concern was completed, two of the authors (VJF and JH) again reviewed all transcripts and audio tapes to identify those incidents that had been initially coded as related to breast pumping. A thematic analysis of these incidents, guided by the principles of the constant comparative method (Charmaz 2006), was then conducted. Discrepancies regarding themes related to breast pumping were then resolved by consultation with KAL and KGH to reach eventual consensus.

## Results

A total of 56 mothers participated. Twenty (36%) mothers were recruited from 450 direct mailings to potentially eligible patients receiving primary care at UCSF, 19 (34%) mothers were recruited from the electronic web site and 17 (30%) mothers were recruited from flyers distributed throughout the community. Mean maternal age was  $34.3 \pm 0.6$  years, 75% were primiparous and 74% had graduated from college. Among study mothers, 21 (37.5%) had breastfed exclusively for at least 2 months, 19 (34%) had breastfed for at least 2 months with formula supplementation and 16 (29%) had stopped breastfeeding before 2 months. In this cohort, 48% were of non-Hispanic white race ethnicity, 20% were non-Hispanic black, 16% were Asian and 6% were Hispanic.

### Themes

#### *Pumping can provide an increased sense of control over breastfeeding (theme 1)*

Pumping was often described as part of a strategic plan to improve breastfeeding. Some mothers focused on giving the baby additional intake by means of the pumped milk. 'I would try hand pumping myself to get some of the milk out because she wasn't drinking enough' (Participant 45, Group 8). 'So like after every single feed during daylight hours I would pump immediately after in order to increase my supply and then give him that because he wasn't sucking it out' (Participant 32, Group 6). Other mothers thought of pumping as a tool to increase the supply available to their baby during breastfeeding. 'After he would feed I could pump hoping that that would kind of stimulate my body to make more' (Participant 7, Group 2) (Table 1).

#### *Pumping can cause pain (theme 2)*

Many mothers reported powerful, vivid memories of pain associated with pumping. For some mothers, painful experiences of pumping were associated with initial pump use. 'The first time I pumped my boobs

**Table 1.** Pumping can provide an added sense of control over breastfeeding (theme 1)

Theme 1: Participant Comments
‘There’s times that I pumped for thirty-five minutes straight and have been squeezing every last bit out just to get it all out just so I could store it, and freeze it and have it for daycare or whatnot’ (Participant 4, Group 2).
‘Initially I was really excited at the idea of being able to take some herbs and increase my milk supply and be able to feel more comfortable and have a stash of milk in the freezer to feel safer like she had more milk’ (Participant 16, Group 4).
‘I wouldn’t pump that much after but it was one, to increase my supply and also to give him back what he wasn’t sucking out’ (Participant 32, Group 2).
‘I have the babysitter give him a bottle of breast milk that I pumped and then I’ll pump as soon as I get home to make up for it because I’m always concerned about my supply. I don’t want to skip a feeding and just use an old feeding because then I’m worried that the next day my body will think it doesn’t need that feeding’ (Participant 2, Group 1).
‘When I doubted my milk supply [[baby cooing]] my pediatrician just said to pump one time, he’s like, “Just once, once a day after you fed the baby and that will get your milk up” ’ (Participant 21, Group 5).

hurt so bad . . . I couldn’t for like a week and a half I didn’t want anything to do with it, I didn’t want to touch them but I had to’ (Participant 27, Group 5). For others, pain with pumping continued during subsequent pumping sessions. ‘It was so painful I was scared’ (Participant 34, Group 6). ‘I shouldn’t have given up on the pump that quickly. I mean, I should have stood it out a little bit longer but like you said, it hurt’ (Participant 42, Group 8) (Table 2).

#### *Pumped milk volume can affect milk supply concern (theme 3)*

Mothers were often aware of the exact volume of milk obtained by the pump, and could remember early pumping volumes with great clarity. ‘Sometimes I would only produce like, I don’t know, five little drops’ (Participant 46, Group 9). For some mothers, volume of pumped milk was a source of concern. ‘I worry every time. I pump last thing before I go to bed and I look at how much comes out and I think, “Is this it?” ’ (Participant 6, Group 2). ‘I only got one and half ounces. I was like, where is all my milk?’ (Participant

**Table 2.** Pumping can cause pain (theme 2)

Theme 2: Participant Comments
‘Yea because it’s really very painful. When I used to pump nothing came out and he’d suck and nothing came out’ (Participant 15, Group 4).
‘I remember the first time I pumped I thought because everybody makes it sound like it’s so easy to pump and I had like this much, I mean nothing came out hardly when I did it and I didn’t expect that at all and then it hurt’ (Participant 27, Group 5).
‘Some said that I had to be pumping when she was not feeding so it stimulates the breast but then also it was so painful I was scared . . .’ (Participant 34, Group 6).
‘Because [the pump] hurt, it was uncomfortable and then I just gave up’ (Participant 41, Group 8).

1, Group 1). Others were reassured by pumped milk volume. ‘When I’m relaxed and I pump I can get a lot. I can actually get like eight ounces at a time’ (Participant 2, Group 1).

Some mothers believed that the volume of milk pumped represented the volume available for their baby when breastfeeding, and in some cases this affected the use of formula. ‘I had to go and buy formula . . . because I’m like pumping and pumping and pumping and pumping and it’s like drop, okay drop of milk’ (Participant 12, Group 3). ‘After I went to the pump and there was hardly anything coming out that’s when I started to worry so that’s when I made the decision to switch to (formula), otherwise I was afraid he would starve’ (Participant 41, Group 8) (Table 3).

#### *Pumping interferes with other nurturing activities (theme 4)*

Some mothers reported that time spent pumping reduced the time available to nurture and care for their infant. ‘You can’t do anything while you’re pumping. You can’t touch the baby’ (Participant 4, Group 2). ‘I felt bad sometimes you know after I’d feed him I’d pump right away. I’d put him in his bouncy seat and I can’t go and hold him and interact with him’ (Participant 12, Group 3).

For other mothers, pumping interfered with personal time. ‘Getting the breast pump and spending pretty much all of my personal free time as a new mother, like that exists, hooked up to a breast pump

**Table 3.** Pumped milk volume can affect milk supply concern (theme 3)

## Theme 3: Participant Comments

- 'I think I panicked. I was just using a manual pump and I was only pumping a little bit out of this one breast and I was like oh my god' (Participant 14, Group 3).
- 'I can get like one ounce at a time so to get a full bottle it takes me a day or two so it made me feel really nervous like she's not getting enough milk when I can barely pump' (Participant 16, Group 4).
- 'I would pump multiple times a day and my cumulative yield over a twenty-four hour period was never more than three ounces so I knew I just didn't have sufficient milk supply so I switched over to formula' (Participant 52, Group 10).
- 'I would be in my office doing the dual pump and closing the door and after twenty minutes I'd get probably an ounce from each breast and I thought that was actually pretty good because I didn't really know so I'd come out and [my assistant] goes, "That's all you got?" She goes, "I got that in the first second," so you just feel like a total failure' (Participant 47, Group 9).
- 'He wouldn't take in my breast milk as much and I tried pumping but I would only pump two ounces of breast milk so I just switched him over to formula . . . "I would only pump two ounces so I knew it wasn't enough' (Participant 55, Group 10).
- 'That's another thing [that] actually freaked me out at first until I-, I mean I know I had read don't count on what comes out in the pump as what your baby gets but it's really hard to feel that force of the pump and then see like half an ounce' (Participant 37, Group 7).

trying to pump to augment whatever supply that I had, was another attempt I made' (Participant 52, Group 10). Some mothers reported unsafe activities associated with attempting to pump while performing other functions. 'I was pumping in the car on the way here which I don't advise. It's not safe' (Participant 4, Group 2) (Table 4).

*Frustration with inconsistent advice from clinicians about pumping (theme 5)*

Mothers perceived inconsistent advice from clinicians about pumping. 'One (nurse) told me to start pumping right away to stimulate my breast and another (nurse) told me you're not supposed to start pumping until your milk supply is established' (Participant 34, Group 6). Perceived inconsistencies in advice from health care professionals about pumping was a source of frustration for many women. 'I got

**Table 4.** Pumping interfered with other nurturing activities (theme 4)

## Theme 4: Participant Comments

- 'So on some days I actually wouldn't pump after every feed because I thought if it takes a little bit longer on the formula I'm okay with it because I'll never get those times back when he's that little, you know those memories' (Participant 12, Group 3).
- 'I think sometimes it's hard to sort of realize how much (pumping) does take away from other things that you can do if you make a choice like that, just from other things you do but I think it was worth it because it was just the choice that I wanted to make' (Participant 23, Group 5).
- ' . . . and they go, "You need to pump, you need to pump, you need to pump, you'll never have enough if you don't pump, pump, pump," and I frankly was not pumping the eight times a day I was pumping only six because I was so tired from being in the hospital' (Participant 35, Group 7).
- 'So I would feed him for like the full forty minutes or so that I would take. I would put him in his car seat, hook up the pump and pump for fifteen minutes and then try to go somewhere and then just like repeat basically so every daytime feed I did that' (Participant 32, Group 6).
- 'You can't get it back . . . Yeah you can't enjoy being a parent. You sacrifice however many weeks or months that you put yourself through this (pumping) and thereafter too and you didn't get to enjoy it, you didn't get to learn about your baby' (Participant 51, Group 10).
- 'So I fed in that pump and you know it was nonstop. It was a lot of work but good thing I had some support at home. My mother in law came to do the cooking and cleaning' (Participant 12, Group 3).

conflicting information when I called (my hospital) because I was really engorged . . . I (was) still not sure what I should do but I really hurt and I didn't have a pump' (Participant 37, Group 7).

Some mothers did not appear to understand that provider advice regarding pumping would vary depending on the age of the infant and expressed frustration that advice given to them as outpatients was different from the advice given in the hospital. 'One (lactation consultant) told me I should pump until I feel relief, . . . then the other woman came in and said, "No if you pump you're going to tell your body to produce more and you're going to get even worse (engorgement)" ' (Participant 39, Group 7) (Table 5).

## Discussion

In this cohort of mothers who had milk supply concern in their child's first month of life, experiences

**Table 5.** Frustration regarding inconsistent professional clinical advice (theme 5)

## Theme 5: Participant Comments

- 'My OB wasn't very in tune with me about breastfeeding because all I saw her for was my six partum . . . but I was seeing the lactation consultant who gave me similar advice to supplement and she also told me to pump just to get in my milk supply' (Participant 1, Group 1).
- 'In the hospital they told me to pump to get my milk going and then I had the home healthcare nurse come four days later to check on me and I told her I was pumping and she looked at me she's like, "Why are you pumping?" I was like, "That's what they told me" . . . She said, "That's going to cause your milk to increase too much and you're going to get engorged," and that's exactly what happened . . . My boobs would get really engorged and I would be leaking all the time and I didn't understand why . . . she said, 'Don't pump for the first month like you were told because it [is] going to produce too much milk' (Participant 4, Group 2).
- 'I had another consultant tell me I shouldn't be pumping until a certain-, until I reached a certain number of weeks which I didn't understand because someone else was telling me to pump so I was kind of confused' (Participant 34, Group 6).
- 'I got sort of conflicting messages at the hospital so I kind of left not really knowing how to solve this problem . . .' (Participant 39, Group 7).

of early breast pumping were described frequently and figured prominently in their reports of early breastfeeding practices, even though investigators did not query mothers about pumping or milk expression. Mothers reported both positive and negative experiences of breast pumping. Positive experiences included an increased sense of control over breastfeeding due to the belief that the breast pump could increase the baby's intake. Negative experiences included pain, increased milk supply concern, reduced time for other activities and frustration with inconsistent advice from clinicians about pumping.

Although many mothers valued pumping and reported that pumping contributed to successful breastfeeding, other mothers reported that problems associated with pumping, including a perception of insufficient milk supply, caused them to discontinue breastfeeding. Some maternal experiences of breast pumping were associated with intense emotions of pain, worry and frustration, whereas other maternal experiences were reported as emotionally neutral or

positive. Reports of pain and worry were more predominant for experiences early in the postpartum period, whereas more neutral or positive experiences were a predominant feature for experiences of pumping later in the postpartum period. The experience of pumping in the immediate postpartum period may differ substantially from the experience of pumping later in infancy.

These findings are important because the prevalence of breast pumping is high and appears to be increasing (Labiner-Wolfe *et al.* 2008; Johns *et al.* 2013). Although pumping and feeding expressed milk have become a routine component of care in early infancy, some studies have found that pumping may actually interfere with breastfeeding duration (Chapman *et al.* 2001; Flaherman *et al.* 2012a). The effect of pumping on breastfeeding duration may be mediated by mother's experiences with pumping, which can vary widely from mother to mother (Clemons & Amir 2010; Odom *et al.* 2013). Our study suggests that breast pumping experiences related to pain, milk supply concern, time constraints and provider guidance may help shape the effect of breast pumping on eventual breastfeeding outcomes.

Our study has several important limitations that preclude generalization of our results to all new mothers. First, we recruited participants from the San Francisco Bay Area, a region of high breastfeeding prevalence and duration. Because 85% of mothers breastfeeding through 4 months have used a pump (Labiner-Wolfe *et al.* 2008), experiences of pumping might differ in a population of high breastfeeding prevalence and duration. Second, mothers in our study were English speaking only. Therefore, our results do not necessarily apply to mothers who are non-English speaking. Third, this study was designed to evaluate maternal experiences of milk supply concern and did not specifically query mothers about breast pumping. Therefore, it is possible that we would have elicited different and possibly more positive experiences of breast pumping if we had directly queried mothers about breast pumping. However, because comments about breast pumping were spontaneously given in our study, our results also suggest that experiences of breast pumping have an important impact on mothers with milk supply concern.

Our results show that use of a breast pump can present barriers to successful breastfeeding for some mothers with milk supply concern. Although many mothers had positive experiences with a breast pump and felt that it gave added control over breastfeeding, others reported that breast pumping caused pain and concern about volume of milk supply. In some cases, these feelings of pain and increased concern about milk supply influenced mothers to discontinue breastfeeding. It is possible that an alternative approach to milk expression in the early postpartum period, such as hand expression, might reduce these negative experiences for some mothers. Of special note, mothers in our sample were confused by perceived inconsistencies in advice from professional clinicians regarding pumping. Several mothers did not appear to understand how or why early pumping would differ from later pumping. Our data suggest that a detailed clinical assessment of maternal experiences regarding pumping could potentially improve the pumping experience and tailor the approach to breastfeeding for the individual mothers. Such an approach might improve maternal comfort and reduce milk supply concern, and could thereby potentially contribute to improved breastfeeding duration.

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## Conflicts of interest

The authors declare that they have no conflicts of interest.

## Contributions

VF was responsible for study design, data collection and data analysis and wrote the first draft of this

manuscript. KH and JH were responsible for data analysis and made critical amendments to the paper. MC and KL participated in study design, data analysis and data collection and made critical amendments to the paper.

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