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ORIGINAL RESEARCH

Encouraging Breastfeeding Without Guilt: A Qualitative Study of Breastfeeding Promotion in the Singapore Healthcare Setting

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Introduction: In Singapore, the healthcare system strongly encourages mothers to breastfeed and breastfeeding initiation is near-universal. However, sustained breastfeeding rates remain low. Little is currently known about how breastfeeding information disseminated in the healthcare setting influences women's breastfeeding experiences. This study explored breastfeeding promotion and educational resources from the perspective of Singaporean mothers and healthcare workers.

Methods: Semi-structured interviews with 14 mothers of infants aged 1–5 months and who had used obstetric, maternity, and/or paediatric services in Singapore, and 20 health workers with experience in general, obstetric, maternal, or paediatric care recruited using purposive sampling methods. Interview transcripts were coded using an inductive method.

Results: Breastfeeding communications were viewed as too moralized and too focused on nudging women to breastfeed, with relatively little emphasis on timely, practical information or solutions for mothers unable to latch. Hence mothers tended to rely on alternative resources such as blogs. They lacked in-depth knowledge of the benefits of breastfeeding and viewed it as detrimental to maternal mental wellbeing due to the perceived stress and guilt when experiencing difficulties, notably with milk supply and latching, and from the inability to meet breastfeeding expectations. Husbands, older family members, confinement nannies, and employers were considered influential individuals to encourage breastfeeding, but they commonly discouraged breastfeeding due to social and cultural factors which led to supplementation with formula.

Conclusion: For better breastfeeding outcomes, future informational sources on breastfeeding should be morally neutral, practical, set realistic expectations for the demands of breastfeeding, and target influential individuals such as family members, confinement nannies and employers.

Keywords: breastfeeding, communications, community health, health promotion, lactation, maternal health

Introduction

Singapore is a high-income city-state with majority ethnic groups of Chinese (76%), Malays (15%), and Indians (8%).[1,2] The median age of first-time mothers is 31,[3] and more than three-quarters of mothers balance infant care with employment following a 16-week maternity leave.[4] In 2013, Singapore adopted the Baby-Friendly Hospital Initiative (BFHI),[5] which promotes and normalises breastfeeding within BFHI-accredited maternity settings,[6] and launched initiatives for nursing-friendly workplaces.[7,8] The healthcare system promotes breastfeeding with antenatal classes, informational resources and support groups, while government and hospital websites emphasize the benefits of breastfeeding, address common misperceptions, and provide practical tips and contact details for lactation support.[9–16] Beyond this, Singaporean mothers also turn to family, friends, and the media for breastfeeding advice.[17,18]

According to the latest national breastfeeding data (from 2011), virtually all Singaporean mothers (99%) initiate breastfeeding after delivery, but exclusive breastfeeding (EBF) rates quickly drop to 50% at hospital discharge and 28% at two months.[19] In a more recent study, the EBF rate at six months was 38% among 258 Singaporean women who brought their infants for routine immunisations at the public primary care clinics.[20] This suggests that breastfeeding

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promotion efforts since 2011 have had positive impacts but the six-month EBF rate still lies far below the global target of 70%.[21]

It is unclear why, despite national campaigns to promote breastfeeding, EBF is not sustained in Singapore. Other high-income countries (HICs), notably the UK and USA, have reported similar issues.[22,23] In Singapore, lower breastfeeding rates were observed in mothers who were younger in age,[18,19] less educated,[18,24] employed,[19] and had lower awareness of breastfeeding benefits,[18] no prior breastfeeding experience,[18,20,25,26] and who were overweight, of Chinese ethnicity, low income, and had poor postpartum health,[26,27] high postpartum anxiety levels or birthing difficulties.[28] Studies from other HICs report similar findings linking lower breastfeeding rates with age, education level, income level,[29,30] employment,[31] birth difficulties,[31] and postpartum anxiety.[32,33] Relatively few studies have explored the nuances of breastfeeding promotional campaigns and how they may shape women's beliefs, views, and practices related to breastfeeding. A UK study found that while mothers were satisfied with the available breastfeeding information, they felt that changes to the messaging were necessary to improve the effectiveness of breastfeeding promotional efforts.[22] Previous studies in Singapore have examined breastfeeding attitudes and perceptions,[20,25,34] as well as compared the effects of an antenatal education session versus a two-session postnatal support provided by a hospital.[35] However, none have specifically focused on the nuances of how breastfeeding communications through the healthcare system are perceived or how they may shape women's infant feeding decisions. This qualitative study explored breastfeeding promotion and educational resources, including their emotional impact on mothers, from the perspective of both Singaporean mothers and healthcare workers to gain a more balanced perspective.

Methods

From June 2021 to May 2022, in-depth interviews were conducted with 14 mothers and 20 health workers. We used purposive sampling methods to recruit a balanced sample in terms of sociodemographics, type of hospital used (private, public), and infant feeding pattern (formula feeding, exclusive breastfeeding) for mothers, and area of expertise (obstetrics, paediatrics, maternal care) for health workers (Table 1). Mothers were Singaporean Citizen or Permanent Resident, had used local obstetric-gynaecological, maternity, and/or pediatric services within 8 months before the interview, and had at least one child below five months old. We initially recruited health workers via our professional network (eg contacts recommended by colleagues in the field) with an

Table 1 Details of Participants

Mothers	N (%)
Age	
27–30	4 (28.6)
31–33	4 (28.6)
34–36	6 (42.9)
Ethnicity	
Chinese	12 (85.7)
Other[a]	2 (14.3)
Monthly household income	
Less than 6000	1 (7.1)
>6000–10,000	4 (28.6)
>10,000–14,000	5 (35.7)
More than 14,000	4 (28.6)
Number of children	
1	7 (50.0)
2	5 (35.7)
3	2 (14.3)

(*Continued*)

Table 1 (Continued).

Mothers	**N (%)**
Type of hospital (most recent delivery)	
Public	8 (57.1)
Private	6 (42.9)
Hospital is a certified Baby Friendly Hospital (most recent delivery)	
Yes	10 (71.4)
No	4 (28.6)
Feeding pattern for youngest child	
Exclusively breastfed	7 (50.0)
Formula fed	7 (50.0)
Health workers	**N (%)**
Role	
Doctor (women's health)[b]	5 (25.0)
Doctor (pediatric)	3 (15.0)
General practitioner[c]	2 (10.0)
Nurse[d]	5 (25.0)
Lactation consultant	3 (15.0)
Researcher[e]	2 (10.0)

Notes: [a] "Other" ethnicities included Indian and Vietnamese. [b] Women's health doctors specialised in obstetrics-gynaecology or perinatal psychiatry. [c] General practitioners included one nurse and one doctor, both from a polyclinic setting. [d] All nurses had worked in a maternity or obstetrics-gynaecology setting. [e] Both researchers specialized in child nutrition.

Email invitation and mothers with flyers posted via Email blast, social media (eg to mother's wellness groups), and word of mouth, with further participants recruited via snowballing. We stopped recruitment after data saturation was reached with both mothers and healthcare workers.

Interviews were conducted one-on-one over Zoom conferencing in English, the most widely spoken language in Singapore. Each session lasted 45–90 minutes. Interview questions followed an open-ended format to enable novel or unexpected new themes to surface through free discussion (Box 1). Each interviewee was reimbursed with S$20 cash.

Interviews were audio recorded, transcribed verbatim, and imported into NVivo software. We used an inductive coding method to analyse data. First, all transcripts were independently coded by the first and second author to reduce bias. Subsequently, the two codebooks were compared, with similar codes combined and new codes added to the codebook. Any discrepancies were resolved with all three authors in an iterative process until consensus was reached to generate the final codebook (Supplementary File 1). Data for all participants were coded together but we distinguished between health workers (by role) and mothers (by feeding pattern) to identify differences in the themes surfaced in each group.

The study was approved by the National University of Singapore Institutional Review Board (reference NUS-IRB-2021-309). All human participants research was performed in accordance with relevant guidelines, regulations and the Declaration of Helsinki. All participants received an extensive briefing of the study and prior to participation, provided informed consent. This included consent to publish their anonymized responses.

Box 1 Interview Guide for Mothers and Healthcare Workers

Mothers
Background information 1. Please tell me a bit about your work and current childcare arrangement. 2. Please tell me a bit about your breastfeeding journey. Feeding decision 3. At what point in time did you make the decision on how you would want to feed your child? What led you to make that decision? 4. What were the sources of information that you go to for feeding and child nutrition? 5. Did you discuss feeding options with others before making a decision? Who did you discuss the options with? Breastfeeding 6. What are your views on breastfeeding? 7. What has your infant feeding experience been like? What influenced the outcome? 8. In your opinion, what can be done to improve breastfeeding rates in Singapore?
Health workers
1. Please briefly describe your role within your organization. 2. What resources on breastfeeding do you refer women to? What are your views on these resources? 3. What are your views on breastfeeding? How about formula-feeding? 4. What do you think of the messaging around breastfeeding that is currently given to women in Singapore? 5. What resources are there to support women in their breastfeeding? 6. What are the most common misperceptions about breastfeeding that might impact breastfeeding rates in Singapore?

Results

Participants discussed sources of breastfeeding information, factors that influence how breastfeeding information is perceived, and issues with currently available breastfeeding information.

Sources of Breastfeeding Information

Official Sources

When engaging with health workers, mothers were typically referred to informational resources such as breastfeeding booklets, in-room videos to watch during their hospital stay, or antenatal classes. According to health workers, most mothers did not attend antenatal classes due to the time and financial costs. While health workers were generally aware of breastfeeding resources from local health organisations, such as government websites, the mothers were not:

> There are [local] resources available… I think a lot of them [mothers] actually didn't realize that… Our marketing strategy not good enough. - Researcher

Informal Sources

Mothers typically relied on Internet searches, mobile applications (eg Baby Centre), blogs (eg KellyMom) and social media (eg influencers) for breastfeeding-related information, although some felt that this information might not be reliable:

> I think it's really important to take it all with a pinch of salt because whatever works for somebody else may not work for you, right? - Mother (Formula-feeding)

They described peer support groups with other mothers as valuable sources of information. Older family members, such as mothers or mothers-in-law, and confinement nannies, commonly hired to help Singaporean women with new-born care in the first postpartum month, were influential sources of advice. However, advice from these women tended to favour formula feeding over breastfeeding:

> Their mother also gave them formula milk. They say, 'There's nothing wrong with me. I don't see a need that I need to go through all this pumping and all that.' - Nurse

Factors That Affect How Breastfeeding is Perceived

Intention and Knowledge

All mothers intended to breastfeed, and health workers had rarely encountered mothers who did not. However, most mothers who intended to exclusively breastfeed did not succeed. Mothers and healthcare workers described perseverance and a strong initiative to self-educate as key to success:

> If they are enlightened enough, hardworking enough, enthusiastic enough to educate themselves, then they will make it a point to read, they will make it a point to go to the library, they will make it a point to ask their peers. - Lactation Consultant

Health workers also noted a strong correlation between a mother's knowledge and her motivation to breastfeed. Among mothers, knowledge of the benefits of breastfeeding varied widely. Some broadly cited nutritional, developmental, and immunity benefits to the child. Fewer seemed to be aware of the maternal benefits of breastfeeding, such as reduced cancer risk or faster postpartum recovery. They generally inferred that breastfeeding benefits babies from infant feeding guidelines and the social norm of "breast is best":

> I think mommy's milk will be better, even though I'm unable to tell you what is better. - Mother (Breastfeeding)

Misperceptions about insufficient milk supply were common among the mothers. Health workers described how mothers often expect large volumes of milk to be produced instantly after birth and become disheartened when they produce only small amounts. There was also a reported lack of awareness that breastfed babies need to be fed small amounts, but often, or that milk intakes vary widely between babies. The result was that mothers tended to compare their milk output to that of other mothers. Singapore's Asian culture was described as an important reason behind this, with a tendency to compete and a preference for chubby babies, which increased the pressure to supplement with formula:

> A lot of the moms… after they deliver, they will complain that they don't have enough milk to feed the child. Then, they are hoping that they supplement for the first couple of weeks, and then things will get better, but it never does. - Researcher

Mental Wellbeing

Mothers felt that being under too much pressure to breastfeed could backfire, leading to mental distress and suppressed breastmilk supply:

> Probably it [breastmilk] is the best, it has antibodies and everything. But if you don't have and you go into depression, I think you cannot produce milk as well. - Mother (Formula-feeding)

First-time mothers, in particular, were described as more prone to feeling overwhelmed and anxious, leading to negative breastfeeding outcomes. Participants generally described breastfeeding as mentally and physically challenging, especially for women who had experienced birth complications, latching difficulties, or past traumas. Mothers and health workers observed that a mismatch between an expectation that breastfeeding would be easy and the reality of how demanding it really is discouraged many first-time mothers. The false expectation that breastfeeding, being a natural process, would happen automatically led mothers to neglect to prepare themselves mentally and equip themselves with the relevant skills and knowledge, and was described as a source of guilt, depressed mood, and perceived failure when difficulties with breastfeeding were experienced:

> …they give up because they did not expect it to be so exhausting. – Researcher

Influence from Household Members

Participants reported mixed experiences of husbands' support for breastfeeding. Some husbands educated themselves about breastfeeding, assisted with feeds, and took care of the other children as their wives breastfed or pumped. Some husbands desired to offer practical support but did not know how, whereas others discouraged their wives from breastfeeding upon seeing their mental distress. Participants emphasised that timely breastfeeding advice and practical support from family members are crucial for breastfeeding success:

> Oh, it's a whole village. Everyone, husband, employer, friends, obstetric care, to be sensitive and women-centric. - Doctor (Women's Health)

> The other family members can do things that the mom cannot do… washing the bottles, pump parts, preparing meals can be outsourced, then that will ease a lot of burden off the shoulders for the mom. - Mother (Breastfeeding)

Older family members and live-in confinement nannies were commonly described as discouraging breastfeeding. Some believed that formula-feeding was equally or more beneficial for the baby than breastfeeding, or advised against breastfeeding so the mother could sleep:

> There are people who had their breastmilk thrown away by their parents or their in-laws. They believe formula is better. - Mother (Breastfeeding)

Influence from Workplace and Society

Mothers described being in environments in which breastfeeding or pumping milk was frowned upon rather than a norm, eliciting feelings of shame or guilt. The workplace, in particular, was described as one such environment:

> Some of them is the bosses that doesn't allow extended time off work just to pump. A one-hour lunch break means one-hour lunch break, nothing else. You either sacrifice your lunch break to pump or you don't pump. - Mother (Breastfeeding)

> When they see you expressing your milk there, then the general impression is 'Okay when she pumps, it means that she's not working.' - Mother (Breastfeeding)

Mothers also described public spaces as challenging, as they felt that nursing in public is not socially acceptable in Singapore. Although public nursing rooms are available, some were unconducive and abuse of these facilities by the general public was common:

> …if I breastfeed in a food court or something like that, yes, then people will just stare for a while… When I go to the nursing room… there are some people who still come in to refill water, so irritating. - Mother (Breastfeeding)

Health Worker Support

Mothers had mixed experiences of support from hospital health workers that led to mixed perceptions on breastfeeding. Some hospitals strongly encouraged breastfeeding as the default while others presented formula-feeding as an equal

option to breastfeeding. Consequently, some mothers received assuring breastfeeding support in the hospital while others experienced frustration and overwhelm due to a lack of breastfeeding support:

> So the nurses were like, guiding you to check the hunger cues and other stuff like observe the latching. So I think when I brought her home, it was very easy for me to tell whether she was sleeping or nursing…that helped a lot. - Mother (Breastfeeding)

Issues with Current Information

Framing and Information Given

The information provided at several points in the healthcare system (prenatal, maternal and postnatal care) was perceived as heavily emphasizing the "breast is best" message, with more focus on nudging women to breastfeed rather than providing practical information for informed decision-making. Some participants remarked that mothers were neither adequately informed nor empowered by the health system to make well-informed choices. Participants suggested that a morally neutral approach, with more emphasis on building practical skills and breastfeeding self-efficacy, would minimize the emotional burden of guilt and stress on mothers and improve breastfeeding outcomes:

> We need to have a better message. It is not so simplistic as just saying breastfeeding is the best. - Mother (Breastfeeding)

> I think what the system should do is that it should let ladies know their options and let them make choices about it and empower them in respect of their choices. Now...it's very top-down. - Mother (Breastfeeding)

Participants, in particular the mothers, felt that informational resources offered by the healthcare system were lacking in relevant practical advice, especially in relation to pumping or temporary supplementation with formula for women unable to latch exclusively. The mothers felt that, though not ideal, this was an important reality to address given the fact that most women have to return to full-time work after four months:

> Singapore is pretty much like, 'Oh, you breastfeed, but we might not really give you the tools, the support to actually achieve it.' It's not a surprise to me that most women actually stop. - Mother (Breastfeeding)

Participants also noted that portrayals of breastfeeding, particularly on mainstream and social media, set unrealistic expectations of the day-to-day reality of breastfeeding and the common issues faced by many new mothers:

> So when it comes to breastfeeding, they also think that it will just happen because the media actually portrays breastfeeding as sitting on a rocking chair in a beautiful nursery and then you latch your baby. But in fact, breastfeeding is just crazy, the first month especially. - Lactation Consultant

Mental Health Impact

For women unable to exclusively breastfeed, messages that promote breastfeeding as an ideal were described as contributing to feelings of depression and stress. Comparisons with social media posts by other mothers who successfully breastfed or produced larger volumes of milk triggered a sense of inferiority in some mothers. This comparison, combined with the inability to live up to the "breast is best" expectation, led to feelings of guilt, specifically, the sense of being an inadequate mother due to the inability to breastfeed without issues. Other participants saw the mental distress as a more general sign of a lack of emotional support for mothers who fail to breastfeed:

> I think sometimes the promotion of breastfeeding being the ideal way can be really stressful for first-time mums. - Mother (Breastfeeding)

> I felt that all the rest of my friends are feeding their babies with breastmilk, what if my baby didn't get the full (benefits of) breast milk, is she going to be OK? - Mother (Formula-feeding)

> I think it's more of beyond breastfeeding and formula milk, it is also how to help mothers overcome the anxiety and depression if breastfeeding fails. - Mother (Formula-feeding)

Health workers felt it was too simplistic to attribute mental distress among mothers to breastfeeding alone, explaining that it was more likely due to a confluence of factors such as a desire to be a "perfect" mother, the overwhelming demands of caring for a new-born and the stress of settling childcare when returning to work:

> The new babies, it is not just breastfeeding, is a lot of other things, baby care, when the baby sleep, when the baby cries, she [the mother] gets painful stitches and all. It's not so simple. - Paediatrician

However, health workers and mothers alike called for more sensitivity to the impact of breastfeeding advocacy on maternal mental health. Some mothers, in reactance to the pressure and in a bid to avoid mental distress, had decided before the birth to eschew setting any breastfeeding goals and adopt a "fed is best" approach:

> I find that people are very worried about how the stress can lead to postnatal depression. So even before baby is born, they set out this barrier and tell themselves, 'oh, it's OK just as long as I feed my baby', which technically is positive, but it's also giving an easier way out rather than being an encouragement to keep trying. - Mother (Breastfeeding)

Several suggestions were offered for balancing breastfeeding advocacy and protecting maternal mental health. These included alleviating the pressure on mothers with a message of "you don't have to be a perfect mother, just good enough", helping mothers better anticipate the challenges of breastfeeding by portraying a more realistic picture of it, and acknowledging that individual circumstances could impose real limitations on breastfeeding thereby reducing the guilt for mothers who fail to meet their breastfeeding goals. This would comprise of a more balanced approach that encourages women to keep trying while normalizing or removing the guilt of an imperfect breastfeeding experience:

> You don't want to pressurize them such that it affects their mental health too much, but you also don't want to say, 'Okay, let's just give up,' because if we could just help you properly, then you could succeed. - Doctor (Women's Health)

Availability, Format, and Organization

Although breastfeeding information is available to mothers, some participants highlighted that information from local official sources were not showing up in online searches. They were thus left to sift through breastfeeding resources from international organizations, blogs, social media, and other sources and to discern the credibility of the information for themselves:

> A lot of information out there, but at the same time, a lot of rubbish. She has to do her own research. - Lactation Consultant

For similar reasons, views were mixed on peer support groups. Such groups were a source of community and comfort for mothers, as well as a place where practical tips were shared. However, the advice given by other members of these groups are not necessarily evidence-based or reliable, leaving mothers to sieve and discern for themselves:

> …one person's medicine may not be a correct medicine for another mom. I think it should more be based on evidence. - Lactation Consultant

> Thankfully with the support group from the mommies and from the Facebook, it helps to validate whatever I'm going through. - Mother (Formula Feeding)

Health workers felt that conventional ways of delivering breastfeeding information such as hardcopy literature and in-person classes were losing effectiveness as mothers preferred the convenience of accessing information online. They suggested that a one-stop platform, such as a mobile application, with credible and timely information would be more helpful than the current formats.

Discussion

Although mothers' motivations to breastfeed were strong, they lacked specific knowledge of the benefits of breastfeeding, viewed current messaging as too dogmatic, and associated breastfeeding with maternal mental distress which created reactance in some mothers wishing to avoid postpartum depression. The issue of guilt also emerged as a key theme across participant responses.

Studies in other countries have similarly found that, when mothers are unable to meet their breastfeeding goals, they experience feelings of guilt and distress,[36–39] especially if breastfeeding is associated with being perceived as a "good mother".[37,40] Thus, to avoid mental distress, mothers avoided setting breastfeeding goals and became reactant to the "breast is best" message, favoring instead a "fed is best" approach.[41–43] Thus, our findings highlight a need for a morally neutral message that reduces emotional pressure and reactance among mothers, and that addresses concerns over their mental wellbeing. The formula industry, for instance, has been adept at leveraging on parental concerns, such as peace of mind, in promoting infant formula;[44] a message that highlights the bonding and mental wellbeing benefits of breastfeeding may prove effective in reaching parents. Detaching breastfeeding outcomes from moralistic notions of "good motherhood" reduces feelings of guilt and shame among mothers who struggle with breastfeeding.[45,46] Participants also highlighted a gap in communication to help mothers understand that breastfeeding struggles were common, which compounded their sense of failure. Thus, addressing this gap could reduce mothers' sense of shame and stigma, and encourage them to engage with healthcare services when they experience difficulties.

The misperception that breastfeeding, being a natural process, would happen easily, often meant that mothers were underprepared. Time and financial constraints deterred mothers from participating in antenatal classes, which are not currently offered for free in Singapore. Support from health workers in educating and equipping mothers to manage breastfeeding was variable and sometimes led to frustration and overwhelm. Mothers who were ill-prepared for the demands of breastfeeding experience greater difficulties adapting to them, as well as greater strains on their perceived physical and mental wellbeing.[37] Thus information on breastfeeding should be disseminated early in the antenatal phase, and should not only focus on its benefits, but also on setting realistic expectations to help mothers better anticipate and prepare for the potential challenges ahead.[47–49] Prenatal preparation also improves breastfeeding-self efficacy,[50,51] which in turn is associated with positive breastfeeding outcomes[52–54] and a lower likelihood of self-report insufficient milk,[55,56] a major barrier to sustained breastfeeding.[57–59]

Household members, though influential, tended to discourage breastfeeding to protect the mother's wellbeing, for reasons of convenience, or due to the belief that formula is superior to breastmilk. While it is common for grandparents to be involved in childcare in both Western and non-Western societies,[60,61] the strong grandparental pressure reported in our study reflects Asian hierarchical culture, where an obligation to defer to elders is more keenly felt than in more individualistic Western cultures.[62–64] "Confinement" is also commonly practiced in Asia,[65,66] during which mothers receive assistance with new-born and postpartum care from an older woman, usually a grandmother or confinement nanny.[67–70] However, they lack knowledge and training in lactation, and tend to pressurize mothers to formula-feed.[34,64,71] Thus, given the strong influence of husbands, older family members and confinement nannies on breastfeeding outcomes,[30,31,34,72–75] breastfeeding communications need to target not only the mothers, but also these influential individuals. Additionally, interventions to increase mothers' assertiveness to breastfeed in the face of pressures may be called for in cultural contexts that emphasize deference to elders or where confinement nannies, inclined to encourage formula-feeding out of self-interest, may be more common.

Mothers felt that breastfeeding in public is socially unacceptable, and though public nursing rooms were available, these were often unconducive. Workplace culture was also described as unsupportive, even if nursing facilities were available. Negative social attitudes to breastfeeding in public,[76–81] as well as at the workplace,[82–86] unfortunately remain a common barrier to breastfeeding in many countries. Campaigns that normalise breastfeeding can reduce these barriers.[79,87,88] More needs to be done in Singapore, as well as in other countries, to create a more supportive culture in which women are not shamed for breastfeeding in public, and not viewed as "lazy" for taking breaks at work to pump milk. More research is needed to inform the development of effective breastfeeding promotion to employers,[89,90] especially in countries such as Singapore, where the vast majority of mothers work full-time.

Intentions to breastfeed were near universal but the level of success varied widely among mothers. Success was described as heavily dependent on the personal initiative to sift through large volumes of breastfeeding information, and the skill to discern credible from non-credible information. Furthermore, advice for mothers unable to latch, such as on pumping, was lacking from official sources. With mothers essentially left to educate themselves, they are exposed to inconsistent advice from different parties which leads to uncertainty over the decision to breastfeed or formula-feed.[34]

Our findings therefore highlight the importance of delivering consistent breastfeeding advice that addresses mothers' concerns across the prenatal and postnatal periods.[47,91–93] While the Singapore healthcare system offers these via antenatal classes and informational resources (eg websites, leaflets), participants suggested these modes are outdated. A more interactive approach, such as using Artificial Intelligence or virtual help from a trained healthcare provider, may be more effective especially in the early postpartum period.[94]

Strengths and Limitations

A potential limitation of the study is the lack of representation of certain groups, such as non-Chinese ethnicity mothers, as we experienced recruitment difficulties due to the COVID-19 pandemic. As we focused on investigating how breastfeeding promotion in the healthcare system shaped infant feeding, we did not discuss other factors, such as breastmilk substitute marketing, that might have influenced participants' responses. While our findings may be informative for contexts similar to Singapore (high-income; high-literacy; advanced healthcare system; strong push for breastfeeding in the healthcare sector), they may be less generalizable to other contexts. Nevertheless, our study design provided participants room to surface themes that were not thought of beforehand and gave rise to a more comprehensive exploration of the issue.

Conclusions

For better breastfeeding outcomes, breastfeeding communications need to be morally neutral and prepare mothers for the demands of breastfeeding, to reduce potential triggers of guilt. Breastfeeding communications should also provide practical information that is timely and tailored, and target not only mothers but also influential individuals, notably their husbands, older family members, and confinement nannies.

Abbreviations

BFHI, Baby-Friendly Hospital Initiative; EBF, Exclusive breastfeeding; HIC, High-income country.

Data Sharing Statement

Data and materials are available on request to the corresponding author.

Ethics Approval and Consent to Participate

The study was approved by the National University of Singapore Institutional Review Board (reference NUS-IRB-2021-309). All human participants research was performed in accordance with relevant guidelines, regulations and the Declaration of Helsinki. All participants received an extensive briefing of the study and prior to participation, provided informed consent which included publication of anonymized responses.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare that they have no competing interests in this work.

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