Perinatal care and breastfeeding education during the COVID-19 pandemic: Perspectives from Kenyan mothers and healthcare workers

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Abstract
The impact of the COVID-19 pandemic on breastfeeding (BF) practices in low- and middle-income countries (LMICs) is not well understood. Modifications in BF guidelines and delivery platforms for breastfeeding education during the COVID-19 pandemic are hypothesised to have affected BF practices. We aimed to understand the experiences with perinatal care, BF education and practice among Kenyan mothers who delivered infants during the COVID-19 pandemic. We conducted in-depth key informant interviews with 45 mothers who delivered infants between March 2020 and December 2021, and 26 health care workers (HCW) from four health facilities in Naivasha, Kenya. While mothers noted that HCWs provided quality care and BF counselling, individual BF counselling was cited to be less frequent than before the pandemic due to altered conditions in health facilities and COVID-19 safety protocols. Mothers stated that some HCW messages emphasised the immunologic importance of BF. However, knowledge among mothers about the safety of BF in the context of COVID-19 was limited, with few participants reporting specific counselling or educational materials on topics such as COVID-19 transmission through human milk and the safety of nursing during a COVID-19 infection. Mothers described COVID-19-related income loss and lack of support from family and friends as the major challenge to practising exclusive breastfeeding (EBF) as they wished or planned. COVID-19 restrictions limited or prevented mothers' access to familial support at facilities and at home, causing them stress and fatigue. In some cases, mothers reported job loss, time spent seeking new means of employment and food insecurity as causes for milk insufficiency, which contributed to mixed feeding before 6 months. The COVID-19 pandemic created changes to the perinatal experience for mothers. While messages about the importance of practising EBF were provided, altered HCW education delivery methods, reduced social support and food insecurity limit EBF practices for mothers in this context.
1 | INTRODUCTION

The COVID-19 pandemic has created an unprecedented global shock to health, nutrition and economic security, especially for those living in low and middle-income countries (LMICs), with the worst effects borne by children (Fore et al., 2020). Disruptions to the health care and public health systems, food shortages and economic downturn have been projected to increase all forms of malnutrition, with an estimated increase of 6.7 million children with wasting in 2020, 21.8% of whom live in sub-Saharan Africa (Headey et al., 2020). In Kenya, the proportion of food-insecure individuals increased by 38% since the COVID-19 pandemic compared to prepandemic levels (Kansiime et al., 2021). Lower-income households and those employed in manual labour have experienced the most significant income shocks, corresponding to less diverse and inadequate diets (Kansiime et al., 2021).

Beliefs and knowledge about the novel coronavirus (SARS-CoV-2) and societal responses such as lockdowns influenced multiple aspects of obstetric and neonatal health, including reducing medical counselling and social support (Ceulemans et al., 2020). The COVID-19 pandemic has altered the health care context for breastfeeding (BF) in multiple ways. First, early in the pandemic, many institutions separated mothers with confirmed or presumed COVID-19 infection from their newborns and disallowed BF to protect infants from infection (Graham et al., 2020; Rao et al., 2021; Tomori et al., 2020). Second, despite little evidence to indicate vertical SARS-CoV-2 transmission via human milk or BF (Dashraath et al., 2020; Pace et al., 2020; Thanigainathan et al., 2021), early health system communication about the potential risk of maternal-child SARS-CoV-2 transmission through human milk created ambiguous and contradictory messaging (Angeles-Agdeppa, 2022; Lubbe et al., 2020; Stuebe et al., 2020). For example, while BF was encouraged by the World Health Organization (WHO, 2020) for infants whose mothers were infected with COVID-19, provided that standard respiratory and hand hygiene practices were met, there was initially no consistent agreement regarding skin-to-skin care and rooming-in after delivery (Obeidat et al., 2020; Stuebe, 2020).

Given the immunoprotective properties of colostrum and breast milk, multiple studies demonstrated that BF in the context of COVID-19 is considered the most beneficial option for newborn and infant health and nutrition, provided that appropriate COVID-19 safety precautions are taken (Rao et al., 2021; Royal College of Obstetricians and Gynaecologists, 2021; Tomori et al., 2020). Maternal COVID-19 antibodies can pass to infants through breast milk following COVID-19 infection (Kelly et al., 2021) and are passed through placental transfer and breast milk following vaccination (Perez et al., 2022; Perl et al., 2021).

The ambiguity created by early messaging about the safety and feasibility of BF in the context of COVID-19 suggests a need to identify prevailing clinical practices, beliefs and knowledge gaps to guide infant feeding counselling within the health system (Fore et al., 2020; WHO, 2020). The WHO Coordinated Global Research Roadmap has called for research to understand the drivers of fear, anxiety, rumours and stigma associated with COVID-19 infection (WHO, 2020). Further, though there is mixed evidence regarding the impact of COVID-19 on BF practices from high-income settings, there is limited evidence on the direct and indirect impacts of the COVID-19 pandemic on infant feeding in LMICs (Brown et al., 2020; Burgess et al., 2021; Ceulemans et al., 2020; Gribble et al., 2020; Hull et al., 2020). The mismatch between COVID-19 and BF guidance and beliefs was worse among low socioeconomic status households (Vilar-Compte et al., 2021). Low-income households and those experiencing food insecurity experienced disproportionate negative effects on BF (Balakrishnan, 2022).

Sub-Saharan African countries experienced multiple shocks from the COVID-19 pandemic, including increases in food security, food price inflation and reduced attendance to maternal health services...
due to extreme lockdown measures and related economic downturn (Ahoya et al., 2022; Ali et al., 2020). As the health sector and health care workers (HCW) play a pivotal role in BF promotion, the perspectives and experiences of these stakeholders are critical to understanding how to build forward from the COVID-19 pandemic. Observation in Kenya during the early phases of the pandemic suggests that physical distancing measures within the health care context may have limited a mother’s access to BF counselling—one on one or group motivational and practical guidance provided by HCW and other infant care counselling (Nduati, 2021).

This study aims to understand: (1) maternal and HCW experiences with perinatal care during the COVID-19 pandemic and (2) mother’s knowledge and practice of BF in the context of COVID-19. Third, we sought to understand how the COVID-19 pandemic shaped mothers’ income, social support and food security, and how these factors, in turn, influenced BF.

2 | METHODS

2.1 | Study overview

This qualitative study was designed to collect data from mothers and HCWs in health facilities in Naivasha Sub County between July 2021 and March 2022. Data were collected using in-depth, semistructured key informant interviews (KIs). Naivasha, a large town of approximately 200,000 people and part of Nakuru County, is located approximately 60 km northwest of Nairobi (Kenya National Bureau of Statistics [KNBS], 2019).

2.2 | Study participants and recruitment

We purposively sampled and recruited mothers and HCWs at four health facilities in Naivasha: one public hospital, one public dispensary, one health centre that serves a high proportion of mothers engaged in commercial horticulture, and one clinic based in a commercial flower farm. Mothers were eligible if they currently resided in the greater Naivasha area, gave birth to a child during the COVID-19 pandemic (between March 2020 and December 2021), and presented at these facilities for routine childhood immunisations. We recruited a convenience sample by recruiting mothers waiting for services at these health facilities. As key influencers of BF education and counselling with special knowledge of the health care context during the COVID-19 pandemic, we recruited HCWs involved in maternal care. All nonstudent HCWs responsible for BF counselling and perinatal care during the COVID-19 pandemic were eligible and were recruited from the maternity, newborn and maternal and child health clinics. Once a respondent was identified, the interviewers explained the study objectives and participant eligibility. Participants suggested interview times to limit inconvenience to both mothers and HCWs.

2.3 | Study setting

Naivasha is a peri-urban city of approximately 170,000 residents in Nakuru County, located 100 km north of Nairobi (KNBS, 2019). This area supports large commercial flower farms and hotel industries, which, together with other informal sectors, are the primary employment sources, all of which were heavily affected by the pandemic.

2.4 | Data collection tool

Maternal interviews assessed experiences with BF counselling and support, BF during the COVID-19 pandemic, perceptions of breast milk transmission of SARS-CoV-2 and food security (Supporting Information: File 1). HCW interviews assessed infant feeding messaging and perceptions of maternal BF attitudes and practices in the context of COVID-19 (Supporting Information: File 1). Discussion topics varied based on interviewee knowledge and experiences, and interviewers probed into thematic areas relevant to the research objectives for the respective participant group. A group of volunteer respondents with similar characteristics to prospective study participants participated in the testing of the questions in eight pilot interviews at the same health facility as the main interviews. Researchers took field notes during pilot interviews, which were nonrecorded. These sessions included testing questions in different formats to assess participant comprehension, and assessment of the suitability of the interview guides to elicit rich responses to the study objectives. The research team met after each pilot interview to evaluate and iteratively create the final set of interview questions and probes. Interviews were audio-recorded and translated to English before transcription, when applicable. A translated transcript sample was evaluated against the audio-recorded Kiswahili to assure translation quality.

2.5 | Training interviewers

Two research team members (H. S., S. I., K. A., and J. K.) conducted the interviews. The researchers received formal training in qualitative interviewing that covered research ethics, informed consent processes, facilitating open-ended questions, active listening, cultural and power dimensions of interviews and establishing rapport. The members of the research team aimed to establish rapport with participants by using the preferred language of the participant (in the case of mothers), and through conducting the research in a health facility where members of the research team have long-standing collaboration and prior experience with working with the clinical staff in the hospital’s continuing medical education programme. All maternal interviews were conducted with at least one Kenyan interviewer.
2.6 | Data collection and analysis

The interviews (mean duration 30 min) were conducted in the respondent’s preferred language (English or Kiswahili) in a private space within the health facility. A codebook containing codes, definitions and examples, was developed collaboratively with the research team through an inductive and deductive hybrid approach, involving a review of the interview guides and reading of the initial transcripts (Fereday & Muir-Cochrane, 2006). The codebook contained deductive codes from the interview guides and inductive codes from the interview findings. Four team members (H. K. S., A. K., J. K.) double-coded each transcript using Dedoose software version 9.0.17 (Dedoose, 2021). Rich text excerpts with deidentified demographic information (participant group, interview number, facility name) were initially coded into one or more of 21 codes developed throughout the analysis.

Using a constant comparative method and a coding matrix organised by code families, we identified themes and subthemes (Charmaz, 2014). HCW and maternal transcripts were analysed simultaneously to compare responses and to examine the convergence or divergence of responses. Following the initial coding, we aggregated the codes into seven families: (1) mothers’ experiences with BF education during COVID-19; (2) mothers’ and HCWs’ knowledge about BF and COVID-19; (3) HCW reports about BF education during COVID-19; (4) HCWs’ perspectives on BF practices during COVID-19; (5) changes in social support and BF/childcare due to the pandemic; (6) food security and coping strategies—impact on BF and other infant feeding practices and (7) the impact of COVID-19 on immunisation and neonatal care.

2.7 | Minimising bias

The research team convened weekly via Zoom to discuss the coding process and arbitrate differences. We consulted the codebook and research plan to resolve coding and theme development disagreements (O’Connor & Joffe, 2020). The team reviewed the selected quotes to ensure the representativeness of the sample and the accuracy of the findings.

3 | RESULTS

3.1 | Participant sample

Table 1 summarises the demographics of our study participants. We recruited 31 HCWs from these facilities, of which 26 consented to participate. All HCW refusals were due to time constraints. We recruited 50 mothers, of whom 45 agreed to participate. Refusals were due to time (n = 3) and a misperception that the research team was administering the COVID-19 vaccination (n = 2).

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Health care worker and maternal participant demographics.</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Health care workers (n = 26)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinician type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered nurses</td>
<td>18 (69.2)</td>
<td></td>
</tr>
<tr>
<td>Nutritionists</td>
<td>6 (23.1)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2 (7.7)</td>
<td></td>
</tr>
<tr>
<td>Facility type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public referral hospital</td>
<td>17 (65.4)</td>
<td></td>
</tr>
<tr>
<td>Public dispensary</td>
<td>4 (15.4)</td>
<td></td>
</tr>
<tr>
<td>Community clinic</td>
<td>4 (15.4)</td>
<td></td>
</tr>
<tr>
<td>Flower farm clinic</td>
<td>1 (3.8)</td>
<td></td>
</tr>
<tr>
<td>Sex at birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>25 (96.2)</td>
<td></td>
</tr>
<tr>
<td><strong>Mothers demographics (n = 45)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20–30</td>
<td>30 (66.7)</td>
<td></td>
</tr>
<tr>
<td>31–40</td>
<td>15 (33.3)</td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prima gravida</td>
<td>17 (37.8)</td>
<td></td>
</tr>
<tr>
<td>2–4 live births</td>
<td>24 (53.3)</td>
<td></td>
</tr>
<tr>
<td>More than 4 live births</td>
<td>4 (8.9)</td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed before COVID-19</td>
<td>22 (48.9)</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some to completed primary</td>
<td>17 (37.8)</td>
<td></td>
</tr>
<tr>
<td>Some to completed secondary</td>
<td>14 (31.1)</td>
<td></td>
</tr>
<tr>
<td>Postsecondary</td>
<td>14 (31.1)</td>
<td></td>
</tr>
<tr>
<td>Child’s sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>24 (53.3)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>21 (46.7)</td>
<td></td>
</tr>
<tr>
<td>Time of delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>March 2020–August 2020</td>
<td>27 (60.0)</td>
<td></td>
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<tr>
<td>September 2020–May 2021</td>
<td>18 (40.0)</td>
<td></td>
</tr>
</tbody>
</table>

3.2 | Mothers and HCW perspectives on perinatal care and BF education during COVID-19

3.2.1 | Theme 1

Both mothers and HCWs reported that physical distancing and fear of COVID-19 infection influenced the health facility-based perinatal experience, including child immunisation visits and BF education,
both in group and individual sessions. Though mothers’ experiences varied, BF education shifted away from group counselling. Concerns of COVID transmission in public transportation affected clinic attendance for some mothers.

### 3.3 Perspectives on the impact of COVID-19 on child immunisations and routine growth monitoring visits

HCWs reported that health facility patient volumes declined as many chose to forego care out of fear of contracting COVID-19. This timidity reduced interactions with HCWs and mothers and limited mothers’ visits to facilities. As one HCW noted, ‘...we experienced some stigma when they [patients] hear one HCW may have been diagnosed with COVID-19, they will not want to come near you. Some will tell one another if you find so-and-so, don’t go to be attended by that person. Here in the hospital, and also at home’ (HCW 22, RN, Public Health Center). HCWs also feared contracting COVID-19, especially early in the pandemic when adequate personal protective equipment was unavailable. HCWs expressed concerns about how many in their communities avoided both them and their families, demonstrating the extent to which perceptions of safety drove mothers’ health care decisions. ‘For healthcare workers, there was a lot of stigma from the community; even our children, when they play, the other people, were worried that all healthcare workers’ children would infect their babies, and their babies infect the other children in the community’ (HCW 12, RN, Public Hospital).

### 3.4 Transportation and clinic attendance

Although mothers reported fears of contracting COVID-19 while bringing their child to the hospital for routine immunisations, most reported never missing appointments, with some resorting to alternative transportation or seeking care away from their preferred facilities to avoid crowds. Mothers noted concerns about not being allowed to come for regular growth monitoring, especially early in the pandemic when restrictions only permitted infants to be monitored at immunisation checkpoints. ‘Breastfeeding was not a challenge; what was a big challenge was going to the immunisation clinics. We were so afraid of the pandemic that I had to use a taxi...which was expensive. Matatus [public transport vans] were seen as high spreaders—especially when you have a small child’ (Mother 05, age 30, delivered April 2020).

### 3.5 Experience during labour and delivery

During delivery, mothers’ most reported challenges were wearing a mask during labour and the fear of contracting COVID-19 in the hospital: ‘It was bad, I even don’t want to think about it. You are in so much pain, and then you are told to put the face mask on and to maintain social distance. No freedom. It was hard’ (Mother 16, age 28, delivered April 2020). While a small number of mothers reported being turned away in early labour to avoid crowded maternity wards, most mothers reported satisfaction with the care they received from delivery ward doctors and nurses.

### 3.6 Impact of COVID-19 on facility-based BF education

While mothers noted that HCWs provided satisfactory care and BF messaging, individual BF counselling was cited as less frequent and intensive than before the pandemic due to altered health facility protocols. Mothers’ descriptions of experiences with BF education during the pandemic varied. Those with previous birth experiences missed group counselling that was discontinued during the pandemic’s early stages. One stated, ‘They could not put a lot of people together due to COVID-19, unlike previously when we were grouped for discussions with other mothers sharing experiences on what each one of us was doing and learning from each other’ (Mother 14, age 27, delivered April 2020). HCWs also expressed a similar feeling that optimum BF education was affected by efforts to minimise crowding in the clinic vicinity, leading to expedited discharging. ‘During COVID-19, we were minimising health talks, so education was affected because you could not take a lot of time, and also having people to maintain social distance made it difficult. So, most of the time, they were not getting health education because of time’ (HCW 25, RN, Public Dispensary). Other HCWs agreed with many mothers, feeling that the hurry to clear the queues limited adequate BF education because ‘the speed of handling mothers at [Maternal Child Health] is fast. Mothers are not having to stay for a long time, and it has not been as effective as it should be’ (HCW 15, CN, Public Hospital).

When BF education was provided, mothers noted that the messages were more focused on preventing COVID-19 infection and the importance of BF to support infant immunity and less on general BF techniques and support.

One mother articulated that the sessions’ main content was ‘hygiene and how to protect yourself from COVID-19 and that sort, nothing like breastfeeding. They said about washing hands after changing the baby clothes and such. Or just whenever you do anything, you must wash your hands’. (Mother 42, age 23, delivered July 2021).

Mothers felt that the education on COVID-19 prevention measures taught them how to protect themselves from infection. ‘They [BF educators] informed us to go see the doctor just in case you developed any symptoms like difficulty in breathing or body weakness or feeling a lot of body changes or the baby feeling the same’. (Mother 3, age 28, delivered 2020). While some HCWs noted a reduction in time spent providing BF counselling, BF education was intensified in some cases: ‘I feel it [BF] was more emphasized since other people had thought that BF would transmit the virus. So, we emphasize the importance of BF and observing the COVID-19 protocols (HCW 13, RN, Public Health Center)’. 

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ICKES ET AL. Maternal & Child Nutrition. Wiley Online Library. Downloaded from https://onlinelibrary.wiley.com/doi/10.1111/mcn.13500, Wiley Online Library on [14/05/2021]. See the Terms and Conditions and Accessibility Statement on Wiley Online Library for rules of use; OA articles are governed by the applicable Creative Commons License.
When mothers were asked about other BF information sources, a few mentioned television and consulting Google as a resource.

3.6.1 | Theme 2

Knowledge among mothers about the safety of BF in the context of COVID-19 was limited, with few participants reporting specific counselling or educational materials on topics such as COVID-19 transmission through human milk and the safety of nursing during a COVID-19 infection. Mothers stated that some HCW messages emphasised the immunologic importance of BF.

Mothers remarked about the lack of specific BF instructions if they had COVID-19 symptoms or were exposed. HCWs reported that mothers initially worried about BF safety, especially when they had COVID-19-like symptoms. As one stated, ‘Mothers were concerned they will transmit the disease to their children just in case they got infected...Also, they were worried that if one got infected and had to be admitted to our isolation wards, they would be separated from their children’ (HCW 15, CN, Public Hospital). HCWs noted that this was more common at the outset of the pandemic.

In the first few months of the pandemic, HCWs felt unprepared to address mothers’ concerns and noted that specific information on BF and COVID-19 was unavailable. One expressed, ‘We need more information about childcare and COVID-19 in this era’, claiming that most of the guidance ‘was given to other groups like the elderly, but there was nothing for the care of the children’ (HCW 1, RN, Public Hospital). A few HCWs described taking the initiative to search the internet regarding BF and COVID-19. ‘In the beginning, we didn’t have any information, so we did not know how to handle BF and pregnant women. We were using general guidelines [about general COVID safety], but later, they [the Kenya Ministry of Health, 2020] developed protocols specific to pregnant and breastfeeding women... I wished it was earlier and timelier...That time, I did not even know what to tell these mothers (HCW 16, RN, Public Hospital).’ When it became available, HCWs agreed that the Ministry of Health guidance about the immunologic importance of breast milk and safe techniques for BF during COVID-19 infection was helpful. HCWs also noted that this guidance sought to correct inaccurate beliefs about breast milk transmitting COVID-19 or about COVID-19 infection being transmitted through the practice of BF. HCWs were concerned that some mothers may have weaned their infants after testing positive for COVID-19.

3.7 | Infant feeding decisions in the presence of COVID-19 infection

Mothers described varying responses to how they would feed their children if exposed to or tested positive for COVID-19. Some had not considered whether their exposure would impact infant feeding, either through breast milk or through the proximity of BF. However, most indicated they would seek professional advice at the hospital. Some mothers resolved to continue BF, even with incomplete knowledge about BF safety during a potential COVID-19 infection: ‘...Even if they say it does not get transmitted through breast milk, this is my baby, and putting on a mask while handling the baby or sleeping with the mask is a challenge. There was a time I was sick. I even suspected it could be COVID-19; I was having chills and came to this hospital, got treated, and went back home. All this time, I was breastfeeding the baby’ (Mother 23, age 25, delivered April 2020).

Other mothers noted accurate information that emphasised the importance of BF to help prevent infection. ‘Now, if you had COVID-19, you do not have to stop breastfeeding, so long as you can protect the baby from contracting COVID-19... breast milk is an important meal for the baby. You must follow all the guidelines to protect them’ (Mother 11, age 34, delivered April 2020).

Early in the pandemic, HCWs noted that a few mothers worried that BF would worsen their condition if they contracted the disease. ‘I think only those mothers who had contracted the disease earlier worried that breastfeeding would make them sicker; this was clarified by the Ministry of Health when it emphasized that it is safe to breastfeed unless someone is too sick to breastfeed’ (HCW 12, RN, Public Hospital).

3.7.1 | Theme 3

Mothers described COVID-19-related income loss and lack of support from family and friends as significant challenges to practising exclusive breastfeeding (EBF) as they wished or planned. COVID-19 restrictions limited women’s access to familial support at facilities and at home, causing stress and fatigue. In some cases, mothers noted income loss due to furloughs and layoffs, time spent seeking new means of employment and food insecurity as causes for breast milk insufficiency, which was, in turn, connected to early EBF cessation.

Mothers described limited social support during delivery and the early postnatal period. Visitation at birthing facilities was restricted, and even after discharge, mothers reported minimal support from their families and friends, leading to challenges feeding the baby and not resting enough. An experienced mother explained, ‘This time I did not get any social support. We were worried about the virus that even the tea party that we normally call friends to come, we never had it this time. Even our parents who stay far away didn’t have the opportunity to come to see the baby until he was big enough to travel’ (Mother 22, age 33, delivered April 2020).

The restrictions enacted due to COVID-19 made it inadvisable and often logistically impossible for relatives to offer material, emotional and informational support after delivery. This increased isolation and stress for mothers, which interfered with their ability to meet their BF goals: ‘I really wished my mother and relatives could come to see the baby, but there were travelling restrictions that could not allow, so it was just phone calls that comforted us, but I felt a big difference compared with my other children’ (Mother 06, age 36, delivered April 2020). Mothers also complained of having to do heavy house chores and getting minimal or no help.
However, some mothers who lost their source of income because of the COVID-19 pandemic indicated that they received overwhelming support in adapting to their loss from relatives, neighbours and friends who sent foodstuffs, transferred money and provided information through phone calls. One mother shared, ‘I really had a lot of support, from my mother’s side, even if they could not visit or organise things like baby showers, my relatives could send one person to bring us food shopping [that] sustained [my mom and me] for more than three months. We stayed in the house [did not have to look for food] for more than three months. We stayed in the house (did not visit or organise things like baby showers, my relatives could send one person to bring us food shopping [that] sustained [my mom and me] for more than three months. We stayed in the house [did not have to look for food] for more than three months’ (Mother 10, age 23 years, delivery April 2020). Another concurred, ‘Not only my husband. I was happy because it was as if he was on leave. So, he was home full-time, and it was so good to have him’ (Mother 19, age 34, delivered April 2020).

3.8 | Food security coping strategies and impact on BF and other infant feedings

Mothers reported that the COVID-19 pandemic resulted in mass job layoffs, employment pay cuts and the shutting of businesses, leading to income and livelihood loss. As a result, they described a reduction in dietary diversity (e.g., ‘eating balanced meals’) and eating fewer meals per day due to limited resources. ‘Yes, it was hard that I had to sell some of my household stuff to buy food, and when I saw it was not getting better, we had to go to my parent’s home in the rural area. My sister who was also supporting me got sick and now was also not in a position to help just came back to searching for any manual jobs to help us survive’ (Mother 26, age 37, delivered August 2020). These experiences were echoed by HCWs’ observations, with one stating, ‘Most of the mothers have lost their jobs and whatever, and you see that when a mother is not settled, lactation will not occur. Most of the mothers are having psychological torture, they are not settled, so production of milk is very low’ (HCW 7, RN, Public Hospital).

Mothers noted that BF as they wished or planned was a challenge. Lack of support from friends and family and challenging economic times brought by the pandemic added to the burden. ‘Yes, breastfeeding was hard, because getting food was a challenge for me. I would sometimes get one meal a day because that was what I could get’ (Mother 15, age 28, delivered April 2020).

Despite widespread job loss, mothers still needed to find income, leading to persistent challenges with BF while seeking employment or working. One mother noted how the pandemic interfered with her plans to take leave from employment after delivering her infant: ‘No, I had planned not to go back to work after delivering this baby so that I can be home and breastfeed him and take care of him, but because of the situation I just had to go back’ (Mother 31, age 29, delivered April 2020). Among those who continued working, reports of more extended hours and reductions in company bus schedules caused mothers to arrive home later than usual and posed an additional challenge to BF.

In contrast, mothers who worked from home and others who experienced employment loss described how these circumstances allowed them to spend more time at home, positively influencing BF. For example, one mother stated, ‘I was employed but we went to online sessions, and I had planned to resign so as to breastfeed, but since COVID-19 affected us and work was minimal, even resignation did not matter. So, I just stayed at home just like if I had a long leave’ (Mother 10, age 23, delivered April 2020). HCWs agreed: ‘[Breastfeeding] was not affected that much. I can say most parents have gone to BF better because (COVID-19) affected the economy, and most people lost their jobs. Our community has people working on farms, so they concentrated on BF when they lost their jobs’ (HCW 25, RN, Public dispensary). While employed mothers frequently used daycare centres before COVID-19, mothers became fearful of leaving children in these facilities during the pandemic. Some mothers cited limited space with many babies mingling within the daycare as a source of infection. They considered quitting employment to take care of the children but could not leave work as they were responsible for the primary household income. ‘At first, it [daycare] was really scary. When I was pregnant, I had even considered leaving employment to be able to take care of the baby. But because of the situation I am not able to leave work because it means I will not have any money to buy food and other needs so I just have to take the baby to the daycare, and things are getting better every day, so I just felt comfortable leaving her with this mother who has other children who were only five’ (Mother 44, age 22, delivered June 2021). Another mother concurred, ‘Yes, they [mothers] say we are only taking the babies there because of not being able to hire a house help and having no option. Sometimes they say the children there have very bad flu and they are all mixed so infecting each other is obvious’ (Mother 28, age 32, delivered July 2020).

4 | DISCUSSION

To our knowledge, this is the first qualitative study in East Africa that explores maternal and HCW perspectives regarding experiences with BF education, beliefs regarding BF safety in the context of COVID-19 and social support for and employment-related factors affecting BF during the COVID-19 pandemic.

4.1 | Review of key findings

Our findings indicated that, while mothers were satisfied with the quality of their care and BF counselling, the frequency of one-on-one BF education decreased in the first several months of the pandemic, due to precautions enacted in health facilities and HCW interpretation of the Kenyan Ministry of Health’s (MOH) COVID-19 safety protocols. Knowledge of BF safety in the context of COVID-19 was limited among mothers and HCWs, especially in the first 3 months of the pandemic. COVID-19-related income loss and lack of support...
from family and friends were perceived to pose a challenge to practising EBF for women in this setting.

Several contextual factors should be considered in interpreting these results and their application. First, in the early phase of the pandemic (March–June 2020), there was limited evidence on the relative risks and benefits of BF if a mother was COVID-19 positive or had COVID-19-like symptoms and whether transmission could be possible through human milk (WHO, 2020). It was also unknown whether breast milk was generally protective against infection with SARS CoV-2 (Chambers et al., 2020). Second, lockdown measures in Kenya were particularly stringent, and unemployment and food insecurity were noted to have increased sharply in the early months of the COVID-19 response (Dinga et al., 2020). However, advocacy efforts directed toward government leaders and the health care sector sought to correct early unknowns (e.g., separating mothers and infants at birth), and to clarify the safety of continuing to breastfeed, even if a mother was positive for COVID-19—provided safety precautions like hand hygiene and face masks were taken (Nutrition and Dietetic Unit, 2020). Third, the Kenyan MOH provided guidance that was consistent with WHO guidance. This ‘Practical Guide for Continuity of Reproductive, Maternal, Newborn, and Family Planning Care and Services in the Background of the COVID-19 pandemic’ noted the current scientific evidence that indicated no known transmission of SARS-CoV-2 through human milk, and promoted immediate BF of newborns, with infection prevention and control measures in the postpartum period in April 2020 (KMOH, 2020). However, the MOH guidance also encouraged telemedicine use and reduced clinic visits to a ‘bare minimum’, while promoting the need to ensure all mothers have access to skilled care for deliveries and pregnancy-related emergencies (KMOH, 2020). Fourth, health care facilities in Naivasha are mainly under-resourced and have large patient volumes. The use of mobile health messaging, except for a small percentage of mothers who benefited from relatively new resources (e.g., from the Kenya Ministry of Health, 2020), was essentially nonexistent in this context. The mothers interviewed in this study were entirely unaware of the availability of government call centres for COVID-related health guidance.

Our results underscore the need for clear and consistent messaging and education following infectious disease public health crises. Timely, proactive education to preemptively combat misinformation that may discourage BF is necessary, including during the current phase of the COVID-19 pandemic, and underscores the importance of such communication for future pandemics.

4.2 | Comparison of findings with other literature

Other studies corroborate the COVID-19 pandemic’s impact on BF practices, access to and accuracy of BF education regarding COVID-19 and social support for BF, with a larger proportion of evidence from high-income countries.

A qualitative study conducted in the United States in the first 3 months of lockdowns (March–May 2020) concluded that the inability to engage interpersonally with peers, family, childcare providers and lactation specialists and the lack of access to childcare proximate to employment negatively affected BF. While additional time at home with infants due to lockdowns was viewed as a BF facilitator, increased stress and isolation were noted barriers. Mothers desired to receive more in-person support from peers, family, childcare providers and lactation specialists during their lactation periods (Snyder & Worlton, 2021). A larger mixed-methods study conducted during this same period for the United States found that 66% of participants who were BF before the COVID-19 stay-at-home orders continued BF and of these 31% breastfed for longer than they had initially planned due to increased close proximity to their infants (Palmquist et al., 2022). Perceptions of the importance of BF and human milk in providing immunological protection to their infants were a key factor to continue BF despite the circulation of conflicting guidance from HCW. Similarly, a large-scale survey of mothers in the United Kingdom reported that, while some described increased time at home as advantageous for BF, mothers from minority groups and of lower socioeconomic status found that COVID-19 lockdowns led mothers to experience lower emotional and practical support for BF, leading to early cessation (Brown & Shenker, 2020). At-risk Canadian mothers also reported that the lack of social and emotional support had negatively impacted their BF experience (Siwik et al., 2022). Mothers reported that the stress of juggling caring for both their infant and older children without family support led to early EBF cessation. A recent survey conducted in Italy found a significantly lower proportion of EBF from 30 to 90 days postpartum in March–May 2020 compared to 2018 using matched controls (58.5% vs. 92.4%, p < 0.001) (Latorre et al., 2021). The authors attributed the reduced prevalence to home confinement and lockdown.

Uncertainty about BF safety during COVID-19 was not unique to Kenya, as 13.2% of 1219 women in the United Kingdom reported worrying about safety in the early stages of the pandemic. Of that sample size, 4.3% heard messaging from a health professional, 9.9% from friends or family and 21.9% from social media that BF might not be safe during COVID-19 (Brown & Shenker, 2020). Another study also found that participants in the United Kingdom who had stopped BF were more likely to have been told by health professionals or friends that BF was unsafe or to have been told that having symptoms of COVID-19 did not allow BF (Costantini et al., 2021). Similar findings were reported during the first wave of the COVID-19 pandemic in the United States (Palmquist et al., 2022).

A review of maternal and child health services in Nigeria, Bangladesh and South Africa identified that COVID-19 lockdowns reduced basic essential services such as antenatal care (ANC), family planning and immunisations, but fears of contracting COVID-19 also deterred people from accessing primary care (Pillay et al., 2021). Child health visits in rural KwaZulu-Natal, South Africa, were reduced by >50% at the start of the most restrictive lockdown (school and nonessential business closure, restrictions on public transport, and individual movement), which returned to prepandemic frequencies by 3 months after these measures were lifted (Siedner et al., 2020).
Notably, not all communities experienced reductions in ANC visits: A study in Nampula Province, Mozambique noted no disruptions and an actual increase in ANC visits, comparing data 2 years before COVID lockdowns to July 2021 (Lydon et al., 2022). Telehealth and mobilisation of community health workers were important interventions that improved education and outreach for COVID-19 across geographically diverse regions of Bangladesh, but they were not optimised to ensure the continuity of essential health and nutrition services (Gaitán-Rossi et al., 2022). In Kenya, national guidelines on Reproductive, Maternal, Newborn and Family Planning were published within 1 month of the first COVID-19 case in the county (Plotkin et al., 2022). Community midwives in Kenya were well-positioned to strengthen the national public health response during COVID-19 lockdowns, by integrating COVID-19 education into their mobile outreach and community-based maternal-newborn care (Kimani et al., 2020). Mothers in our study did not report receiving BF education through mobile outreach efforts and described some resistance to travel to health centres for perinatal care for fear of contracting COVID in public transportation, and barriers also identified in Bangladesh and an urban Kenyan context (Gaitán-Rossi et al., 2022; Kimani et al., 2020).

In addition to the effect on social support and health care access, the impact of the COVID-19 lockdowns on mental health in Kenya was substantial and amplified by an under-resourced health system with no mental health surveillance (Jaguga & Kwobah, 2020). A review on the impact of COVID-19 on women’s mental health reported that the support mothers received from their families and friends decreased during the pandemic, resulting in an increased risk of postpartum depression (Almeida et al., 2020). Women who receive social support from health care professionals are more likely to initiate and continue BF longer than those who do not receive formal support (Lee, 2016). Additionally, maternal mental health was positively affected when mothers met their BF goals, which can offset the negative impact of the pandemic (Brown & Shenker, 2020). Evidence from a Baby-Friendly hospital in Turkey indicates that counselling about the immunological, nutritional, and cognitive benefits of human milk can mitigate the negative impact of COVID-19 on BF rates among mothers of neonates admitted to neonatal intensive care units for reasons other than COVID-19 (Gunes et al., 2021).

4.3 | Strengths and limitations

Study strengths include soliciting the perspectives of both mothers and HCWs, recruiting participants throughout different phases of the pandemic and conducting interviews within health facilities where the research team had previously established rapport.

Several factors limited our study. First, the hospital setting may have caused some mothers to underreport negative counselling experiences with HCWs. We conducted interviews in private locations and ensured confidentiality to mitigate this potential bias. Second, we did not interview mothers within the community, or at health clinics at commercial farms and other employment settings that provide perinatal care due to COVID-19 restrictions. The absence of perspectives from these settings limited data from mothers who may be less likely to seek perinatal care, and from small private clinics where HCW messaging may differ from that given in larger facilities. Prior research indicates that over 97% of mothers in Naivasha delivered at the facilities represented in the present study, of whom 80% received BF counselling after delivery (Ickes et al., 2021).

5 | CONCLUSIONS AND RECOMMENDATIONS

The COVID-19 pandemic created changes to the perinatal experience for mothers. While HCWs provided messages about the importance of practising EBF in the context of COVID-19, altered HCW education delivery methods, reduced social support, and food insecurity posed substantial challenges to optimal breastfeeding practices in this setting. Support for first-time mothers and those who lack access to mobile health technologies is especially critical to support and promote BF during the ongoing COVID-19 pandemic. Health communication efforts should strive to provide evidence-based, tailored messaging and consistent BF promotion during the COVID-19 pandemic.

AUTHOR CONTRIBUTIONS

Scott B. Ickes, Joyceline Kinyua, Donna M. Denno, Judd L. Walson, Stephanie L. Martin, Ruth Nduati, and Aunchalee E. L. Palmquist designed the study. Scott B. Ickes and Hellen Lemein collected the data. Hellen Lemein, Kelly Arensen, Scott B. Ickes, Joyceline Kinyua, Hannah K. Sanders, Stephanie L. Martin, and Aunchalee E. L. Palmquist analysed the data. Hannah K. Sanders, Joyceline Kinyua, and Scott B. Ickes drafted the manuscript. All authors provided critical feedback, read, and approved the final manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

We conducted interviews in a private setting within the health centres and maintained participant confidentiality for all participants.
The Wheaton College Institutional Review Board (Protocol # 1810071-2) reviewed and the Kenya Medical Research Institute Scientific and Ethics Review Unit (Protocol # 3712) approved the study. All participants provided written informed consent before participation.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.