

ORIGINAL ARTICLE

Infant malnutrition treatment in Kenya: Health worker and breastfeeding peer supporter experiences

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Funding information

Medical Research Council, Grant/Award Number: MR/R002738/1; Joint Global Health Trials, Grant/Award Number: MR/N021940/1

Abstract

Acute malnutrition in infants under 6 months (u6m) is increasingly recognised as a global public health problem. The World Health Organisation (WHO) guidelines for inpatient nutritional rehabilitation of infants u6m is re-lactation: the re-establishment of exclusive breastfeeding. Evidence suggests these guidelines are rarely followed in many low-income settings. Two studies of infant nutritional rehabilitation undertaken in three public hospitals in coastal Kenya employed breastfeeding peer supporters (BFPSs) to facilitate WHO guideline implementation. To explore the acceptability of the strategy to health workers (HWs) and the BFPSs, in-depth interviews were conducted with 20 HWs and five BFPSs in the three study hospitals. The HWs reported that the presence of the BFPSs changed the way infant nutritional rehabilitation was managed, increasing efforts at relactation and decreasing reliance on supplemental milk. BFPSs were said to help address staff shortages and had dedicated time to support and assist the mothers. Key to the success of the BFPSs was the social relationships they were able to establish with the mothers due to the similarity in their experiences and backgrounds. Despite the success of the BFPSs, human resource management and infrastructure challenges remained. BFPSs can successfully be employed to facilitate the implementation of the WHO guidelines for the nutritional rehabilitation of acutely malnourished infants u6m in hospitals in Kenya, establishing supportive social relationships and trust with the mothers of the acutely malnourished infants and helping to address the issue of human resource shortages.

KEYWORDS

breastfeeding, breastfeeding support, infant feeding, malnutrition, WHO

1 | INTRODUCTION

Globally, 8.5 million infants under 6 months (u6m) of age suffer from moderate or severe acute malnutrition (Kerac et al., 2011). The prevalence of lactation failure among malnourished infants is up to 90%

(Vygen, Roberfroid, Captier, & Kolsteren, 2013). The World Health Organisation (WHO) recommended treatment for infant malnutrition is re-lactation: the re-establishment of exclusive breastfeeding (WHO, 2013). However, evidence suggests that in common with other international health care guidelines, these recommendations are

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rarely implemented in low- and middle-income countries (LMICs) (McGrath, 2016; Nzinga, Mbindyo, Mbaabu, Warira, & English, 2009; Ritchie Puchalski et al., 2016). Challenges often faced in guideline implementation include understaffing and high workload in hospitals (Irimu et al., 2014; McGrath, 2016; Nzinga, Mbindyo, Mbaabu, Warira, & English, 2009).

A recent study, Improved Breastfeeding Support to Treat Acute Malnutrition among Infants under 6 months admitted to hospital because of illness (IBAMI) undertaken in a public hospital in coastal Kenya, used breastfeeding peer supporters (BFPSs) to facilitate the effective implementation of the WHO nutritional rehabilitation guidelines among inpatient malnourished infants u6m (Mwangome et al., 2019). The IBAMI study demonstrated that, in a research context in a resource-constrained hospital setting, BFPSs can support the effective implementation of these guidelines (Mwangome et al., 2019). Over recent years, BFPS strategies have been employed in community settings in high-, middle- and low-income contexts to facilitate the initiation and retention of exclusive breastfeeding (Jolly et al., 2012; Kimani-Murage et al., 2017; Nankunda, Tumwine, Nankabirwa, & Tylleskär, 2010; Ochola, Labadarios, & Nduati, 2012; Tylleskär et al., 2011). In high-income settings, BFPS strategies have also been implemented within hospitals (Kaunonen, Hannula, & Tarkka, 2012; Kempenaar & Darwent, 2013; Meier, Engstrom, & Rossman, 2013; Oza-Frank, Bhatia, & Smith, 2014; Reeder, Joyce, Sibley, Arnold, & Altindag, 2014; Rossman, Engstrom, & Meier, 2012), but there is conflicting evidence on the ability of BFPSs to cope and work well with professional health workers in a hospital environment (Aiken & Thomson, 2013). In LMICs, BFPSs are rarely used in hospitals, and little is known about the feasibility or acceptability of their introduction to support the re-establishment of exclusive breastfeeding (EBF) in acutely malnourished infants (Mwangome et al., 2019). To investigate the feasibility and acceptability of integrating BFPS to work in routine public hospital settings in Kenya, a follow-on study to IBAMI (Strategies to integrate Breastfeeding peer supporter in the health system-SIBs) was conducted in two hospitals in the coastal region of Kenya. This paper reports on the component of the IBAMI and SIBs studies that explored the perceptions and experiences of the health workers (HWs) and the BFPSs in implementing the WHO guidelines for the inpatient management of malnourished infants u6m.

2 | METHODS

2.1 | Setting

The studies were conducted in three public hospitals in the rural coastal region of Kenya. The data were collected during November 2017 in the IBAMI study and between December 2019 and January 2020 in the SIBs study. The IBAMI data was collected in the context of a research trial setting, whereas the SIBs data was collected as part of a routine implementation study.

Key messages

- BFPSs presence in the hospitals changed the way the nutritional rehabilitation for infants under 6 months was managed.
- Health workers appreciated that the BFPSs helped address staff shortages and provided support and counselling enhancing relaxation.
- Key to success was the similarity in BFPSs and mothers' backgrounds, allowing development of supportive social relationships facilitating the delivery of appropriate support and counselling.
- Despite the success of the BFPS strategy, human resource and infrastructure challenges remained.

2.2 | Recruitment, selection and training of BFPS

Recruitment and training of the BFPSs in IBAMI were coordinated by the KEMRI Wellcome-Trust Research Programme (KWTRP) with three peer supporters recruited from an existing pool of the KWTRP field workers (Mwangome et al., 2019). In SIBs, the county department of health coordinated the recruitment of two BFPSs (one per hospital); both were previously community health volunteers (CHVs). Although the hospitals and selection process differed, the BFPSs roles in the two studies remained the same. In both studies, the focus for the BFPS was to support the existing cadres of HWs working in the paediatric wards of the hospital to implement the 2013 WHO guidelines. The training provided and the roles allocated in both settings are described in detail elsewhere (Mwangome et al., 2019).

2.3 | Study design

This was an exploratory qualitative study. In-depth interviews were conducted at the end of each study among HWs and BFPSs who had been working in the paediatric wards.

2.4 | Participant selection

Participants were purposively selected to reflect the range of cadres involved in the nutritional rehabilitation of malnourished infants in the three hospitals. These included medical officers, clinical officers, nurses, nutritionists and BFPSs. In IBAMI, two participants were selected from each cadre. In SIBs, where possible, two participants were selected from each cadre, but the selection was limited by the number of each cadre working in the hospital; consequently, no clinical officers or medical doctors were interviewed in one of the hospitals. Instead, two additional nurses (who were involved in providing

clinical care) were selected for interview. All the BFPSs participating in the two studies were interviewed.

2.5 | In-depth interviews

In-depth interviews were conducted by two experienced social science interviewers with the aid of a semi-structured interview guide. The interview language was either Kiswahili or English depending on the interviewee's preference. The interviews took place in a private room in each hospital. With consent from the participants, all interviews were audio-recorded using a digital encrypted recorder. Each interview lasted for 20 to 95 min.

2.6 | Data management and storage

Data were downloaded to password-protected computers, and the audio recordings were deleted from the recorder. The audio files were transcribed verbatim and, where necessary, translated from Kiswahili to English. All names/identifiers were removed during transcription and replaced with codes. All transcripts were checked by SC against the audio for accuracy, completeness and correctness before they were imported to NVIVO software for management and analysis.

2.7 | Data analysis

Data from IBAMI and SIBs were initially analysed separately using thematic content analysis. The transcripts were read by SC and DO, and an agreed coding framework was developed. Following the endorsement of the framework by all authors, SC and DO coded the transcripts independently using NVIVO. The coding was compared and charts developed and shared. Following further discussion among all authors, the charts were organised into themes for subsequent interpretation.

2.8 | Ethical considerations

Ethical approval was obtained from the Kenya Medical Research Institute Ethical Review Committee in Nairobi for both studies (KEMRI/

SERU/CGMR-C/050/3285 and KEMRI/SERU/CGMRC-C/102/3545). Written informed consent was obtained from all the participants.

3 | RESULTS

Twenty-five in-depth interviews were conducted among HWs ($n = 20$) and BFPSs ($n = 5$) during the IBAMI and SIBs studies (Table 1).

Whereas data from SIBs and IBAMI were coded separately, key themes emerging were consistent across the data sets and are reported together. The major themes were (i) previous nutritional rehabilitation practices, (ii) effects of the BFPS on nutritional rehabilitation practices, (iii) perceived effects on infants and mothers from BFPS presence, (iv) how the BFPS worked and (v) challenges of BFPS inclusion.

3.1 | Previous nutritional rehabilitation practices

Across all three hospitals and among all cadres of HWs, it was reported that before the BFPS intervention, the first action for nutritional rehabilitation was to place the infant onto formula:

Previous ... once the mother's milk is not enough, there was no effort in supporting the mother until she attains sufficient milk production ... once the mother's milk is not enough or the child has been admitted with malnutrition, she was put directly on Dilute F100. (KL_Nutritionist_NUTHW01)

These actions were not due to a lack of awareness of recommended practice for the nutritional rehabilitation of malnourished infants but, rather, a 'lack of time', meaning that the immediate use of formula was the most practical option. The 'lack of time' appeared to be a combination of the insufficient staff to allow dedicated time to be spent on the task combined with the amount of time and effort required to re-establish EBF:

Dealing with these mothers who probably they have stopped breastfeeding for one reason ... it takes a bit of time, and it requires a lot of sitting and talking and by the time they have accepted, actually, agree to

TABLE 1 Study participants: Locations and cadres

Cadres interviewed	IBAMI	SIBs (Hospital 1)	SIBs (Hospital 2)
Medical doctor(s)	0	1	0
Clinical officer(s)	2	1	0
Nurses	2	2	4
Nutritionists	2	2	2
BFPS	3	1	1
Total	9	8	8

Note. Nurses predominantly interviewed, whereas medical doctors were the least.

initiate re-lactation, usually ... it's quite interactive, it is time-intensive. (KL_Clinical officer_MOHW06)

This was despite the realisation that the current approach of formula feeding produced only a very short-term solution:

The guidelines were there but the implementation was a problem might be due workload for the setting we are working here ... we know that breastfeeding is there but to sit down with the mother enough time to counsel her day in day out, would have been difficult so we were just managing with dilute F-100 every day, every day and again once the child is out of malnutrition, going home the situation is back to square one. (KW_Clinical officer_MOIDI 07 KE)

Furthermore, although the importance of addressing malnutrition was acknowledged, in practice, dealing with infections was the main priority for the clinical staff. As such, the little time that staff had to deal with each patient was primarily dedicated to the management of infections.

The only constraint was time, because re-lactation process proves to be quite an intensive kind of process that requires more time ... So, it works but it requires time... I think clinicians, basically treat the infection, their priority is the infection. (KL_Nutritionist_NUTHW04)

3.2 | Effects of BFPS on nutritional rehabilitation practices

Across all cadres, the HWs reported that having the BFPS in their hospital changed how the nutritional rehabilitation of malnourished infants was managed. The primary reason for the change was reported to be the presence of an 'extra pair of hands'.

Her presence affected our work positively (giggles) because when we were busy at the wards, she took over yeah (KM_Nutritionist_NUTIDI 07 ME)

You cannot be everywhere all the time ... sometimes when these mothers need support; you're in adult ward attending to clinical case (KL_Nutritionist_NUT HW4)

However, it was not just a general 'pair of hands', rather a person to assist in the specific task of re-lactation. The presence of the BFPS provided not only the 'person time' to support relactation but also the visible reminder of the importance of nutritional rehabilitation (alongside infection treatment) and the possibility of implementing the guidelines and achieving relactation:

I guess by adding peer supporters we are now trying to implement those guidelines, coz otherwise we know that breastfeeding is there but to sit down with the mother enough time to counsel her day in day out, would have been difficult so we were just managing with dilute F-100 every day, (KW_Clinical officer_MOIDI 07 KE)

... my time and their time is different, so, I would have had to do it [sort out both mothers and infants], but when they are round am grateful ... because I know there is an expert here who will handle this [deal with the mother]. (KL_Nurse_HW2)

The presence of a person dedicated to the practice of supporting mothers to re-establish EBF meant that more attention was now given to offering support and counselling to the mothers which had been lacking:

With everything else I do, at times, it's hard for us to, to get to that level of one on one with the mother, ... so we even have the nurses, I'll tell the nurse this mother is having problems she has told me that, am not getting enough milk, and probably I don't have enough time to sit with her and make sure she expresses ... we find out what is the problem is. So, we actually, really needed this kind of support. (KL_Clinical officer_MOHW06)

In addition, for some of the HWs, the BFPS strategy seemed to have prompted them to believe that with a little bit more attention and time, re-establishment of breastfeeding in an inpatient setting is possible:

There was a day a mother tried to express and she couldn't produce even a drop (of milk), but after ten minutes when I have informed one of them [peer supporter], ... I went back and find out she has produced 20 mls of milk, so I was surprised with that effort. I was surprised because the mother tried to express as I witnessed, and there was none even a drop, but when I came back I found a cup full of milk, ... I asked whose cup is this? And she said it's mine, I've got help and produced milk ... I asked what happened? And she said, 'I was taught how to express', so I realised is a good thing, and there is importance. (KL_Nurse_HW3)

3.3 | Perceived effects on infants and mothers from BFPS presence

All HWs interviewed perceived the BFPS strategy to have contributed positively to the health of the malnourished infants, including a perceived reduction in length of hospital stay:

First, it showed that when there is proper implementation or maybe a mother is well supported, ... we decrease that stay in the hospital the days are decreased. (KW_Nurse_NUIDI 03 KE)

and visible increases in weight on breast milk:

Its strengths is, that you can see a mother comes and tells you that she has no milk completely, then she starts expressing after two to three days, you see the child came with a wrinkled face then after the three days you see the child's face shines, ... you know mother's milk is important it makes the child grow healthily, it reduces ailments. (KL_Nutritionist_NUTHW02)

Several of the participants also mentioned that they thought that the BFPS strategy had some positive impacts on the mothers. They reported that at the end of the hospital stay, the mothers had learnt about the importance of breastfeeding and acquired skills in appropriate breastfeeding techniques which would have a post-discharge bearing on the infant's health:

'But through the support which they are getting from the peer supporters, by the time the mother is discharged she has the ability express milk above the amount the child is supposed to take. So, I've seen that to be a best thing'. (KL_Nutritionist_NUTHW01)

3.4 | How the BFPS worked

Three key issues emerged from the interviews as having contributed to the effectiveness of the BFPs in adapting to the hospital environment and supporting the mothers. These were the relationships that developed between the mothers and the BFPs, the communications between the BFPs and the HWs and the ability of the BFPs to work as part of a team with minimal supervision.

3.4.1 | BFPS fostered relationships with mothers

Health workers appreciated that the BFPs were from the local community and were able to speak to mothers in a language they understood:

She has been of great assistance to us and most especially to us that have some communication barrier because like she was able to communicate to the client one on one in the vernacular language. (KW_Nurse_NUIDI 04 KE)

However, it was not just the language that was important; the social position of the BFPS facilitated the formation of social relationships with the mothers and developed a closeness that helped create trust and cooperation:

She has been helping us with the mothers because you know the mothers when they see a doctor. ... when they are told that 'this is a doctor', they fear us, but this one becomes at their level ... they interact they say everything, they can't hide anything so if they don't know how to breastfeed, they tell her. (KM_Nutritionist_NUTIDI 07 ME)

The fact that the BFPS was likely to have experienced similar issues also helped in the development of trust and openness:

You feel that this is not a doctor ... you're more comfortable to discuss with someone who is your peer you can share your experiences, even the peer supporter can tell the mother even me maybe I had this problem, ... you can share experiences because this is your peer and it's not like you're talking with the doctor. If you are dealing with a peer, you're free, ... you can open up, and the peer understands you because maybe she might have passed through such, so there is a good understanding between the two. (KL_Nurse_HW2)

In addition, shared experiences and similar backgrounds meant that the BFPS already had some understanding of the types of challenges that mothers faced. All of these attributes of the BFPS helped them to develop close relationships with the mothers which allowed them to identify issues that mothers would not ordinarily share easily with the HWs:

... because they were closer with the mothers, they were able to pick some other issues that me as a nutritionist I wasn't able to pick of which that also helped in the treatment of the children. (KL_Nutritionist_NUTHW1)

This was recognised by the BFPS as being an important part of their role:

What has assisted me to perform is that I have been close to these mothers, when I stay closer with these mothers, I take as if the child is mine, I assume the feeling of the mother, I stay even closer to her, so, when I become more closer to her, she becomes free and opens up her breasts for me to see. (KL_BFPS 01)

3.4.2 | Good communication between BFPS and HWs

Across all three hospitals, the BFPS reported that they had a good working relationship with the HWs and this attributed to good communication among the cadres. To work together, BFPS and HWs had to proactively work to build effective communication skills. Whenever communication challenges arose, the BFPS and HWs met to discuss and resolve them:

Communication is one of the way of which has contributed big time in working well, when we are having good communication between we workers, because we have done this work, me as the peer supporter but am between fellow colleagues, ... there are nutritionists, there are nurses, there are clinicians, there are doctors, there are fieldworkers, I think when there is good communication between us, the work become easier. (KL_BFPS_02)

3.4.3 | Commitment and teamwork

All HWs observed that the BFPS had a positive and committed attitude towards their work. After training and induction into the wards, the BFPS were said to have been able to work as required under minimal supervision:

Their strength is that they have mastered the job very well, because most of time once you've planned for them the key responsibilities for them to achieve, from there you see things are happening, they are happening. You won't find someone going and coming back maybe when they don't have the confidence on what to do, but they know their work, they have mastered it and they are doing it well. (KL_Nurse_NUHW1)

As explained by the interviewees, there was a close working relationship that existed between the BFPS and the line manager, and whenever the BFPS were faced with a challenge, they could easily turn to them for help. The nurses repeatedly reported how frequently they came together with the BFPS to handle mothers who were either reluctant to EBF or experienced lactation challenges and counselled the mothers together. Some of the nurses interviewed also reported that they responded to some of the questions and issues from the mothers that the BFPSs were unable to handle.

It was a good thing because you get to share different ideas because we are from different cadres, we do different things, so with that at least you come there and then you share different ideas that can help in management of the children. (KW_Clinical officer_IDI 06 KE)

3.5 | Challenges of BFPS inclusion

Whereas the BFPSs were viewed very positively, challenges such as a lack of human resources, organisational and human resource management and infrastructure were mentioned by both the BFPSs and HWs.

A major challenge was the high demand for breastfeeding support which could not be fully met by the BFPSs. In each site, there was a feeling that the BFPSs were overstretched:

We get four mothers at the same time, and probably that might have been too much for one or two people at once. (KL_Clinical officer_MOHW6)

In addition, in the SIBs study, the BFPSs were often required to provide support to mothers across several wards and units within the hospital, assisting in the establishment of breastfeeding in the maternity ward as well as providing support to mothers of malnourished infants in the paediatric ward:

Yes, we could maybe if she is in the wards or in the maternity and we find here there are some mothers, we could hold the mothers to wait for her, though sometimes it was a bit challenging. (KW_Nurse_NUIDI 05 KE)

Due to shortages among other cadres of staff (in particular the nurses), the BFPS were also, at times, expected to support the nurses with other simple tasks around the ward such as triaging:

According to other people's interest, there was little collision or maybe, I go and sit with mothers and teach them the way handle a child so that she can be breastfeed well, and you're expecting me to come at the admission desk to help you in the admission, so, there was that collision, there was sometimes, some don't understand us, they need our support but it affects our work. (KL_BFPS 01)

In addition, in SIBs, as BFPS were employed and managed by the county ministry of health, they frequently experienced delays in the processing of their salaries. Furthermore, the BFPS, also mentioned that, apart from their struggles with workload and late pay, a key challenge was the lack of conducive space within their hospital for assisting mothers with breastfeeding. They voiced their concerns about the lack of a private space where they could practically show mothers how to express milk and offer back rubs as a way of stimulating an oxytocin reflex in mothers who struggled with milk production.

4 | DISCUSSION

In this study, undertaken in three hospitals in coastal Kenya, we explored the perceptions and experiences of front-line HWs in

response to a strategy of employing BFPS to facilitate the implementation of the WHO guidelines for the nutritional rehabilitation of infants. In many hospitals in LMICs, nutritional treatment for malnourished infants u6m starts with supplemental milk, rarely progressing to efforts to re-introduce EBF due to time constraints (Corbett, 2000; Oberlin & Wilkinson, 2008; Singh, Rai, Mishra, Maurya, & Srivastava, 2014). Consequently, many infants are discharged while still on supplemental milk and not on EBF as recommended by the WHO guidelines (Hallarou et al., 2017; Oberlin & Wilkinson, 2008). In common with previous studies in LMICs, the HWs in the IBAMI and SIBs studies reported that before the introduction of the BFPS, inpatient malnourished infants were mainly treated with supplemental milk rather than relactation. The non-adherence to the WHO guidelines was not due to a lack of knowledge of the recommendation for relactation but rather primarily due to concerns about the amount of time and effort required to effectively re-establish breastfeeding; putting an infant on supplemental milk was perceived to be the quicker and easier option. Relactation is a time-intensive process that requires the health worker to spend considerable time supporting breastfeeding mothers (Seema, Patwari, & Satyanarayana, 1997). Studies of care provision in paediatric and neonatal wards in sub-Saharan Africa in general, and Kenya in particular, have frequently found high patient loads with a high patient to staff ratios and too few staff to effectively implement a range of care guidelines (English et al., 2004; Miseda, Were, Muriuki, Mutuku, & Mutwiwa, 2017; Wakaba et al., 2014). The findings from IBAMI and SIBs fit this pattern, with the staff of all cadres reporting heavy workloads and insufficient time to spend helping mothers to relactate. The BFPS were welcomed for providing an extra pair of hands but also had a specific role and therefore able to dedicate sufficient unhurried time to the mothers. Furthermore, the increase in the numbers of mothers who managed to re-establish EBF (facilitated by the BFPS) was perceived extremely positively by all cadres of staff across all three study hospitals. Very few studies have investigated frontline health workers' response to relactation. As has been found in studies in high-income countries (Hopper & Skirton, 2016), the IBAMI and SIBs studies highlight that HWs are keen to support mothers to exclusively breastfeed but feel they lack the time required to effectively do this. Although all of the HWs were supportive of the relactation approach, at the start of both the IBAMI and SIBs studies, some staff had been sceptical about the potential for relactation and its benefits. By the end of the studies, all cadres of staff thought that relactation was possible, and it helped in strengthening the nutritional rehabilitation of the malnourished infants. This was partly as breast milk was seen as the most effective form of nutrition for infants u6m but also because if an infant was successfully relactated, then it was perceived that it would help tackle the problem of readmission after discharge as the mothers would be less likely need access to supplemental feeds for their infants. However, concerns were raised about the ability of mothers to maintain EBF in their home environments. Data from interviews with mothers conducted as part of the IBAMI study showed that this was indeed

the case, with some mothers struggling to maintain EBF post-discharge (Mwangome et al., 2019; Van Ryneveld, Mwangome, Kahindi, & Jones, 2020).

The BFPS were particularly valued by the professional HWs of all cadres for their ability to relate socially and culturally to the mothers, allowing the mothers to relax and feel comfortable in the presence of the BFPS in a way that was hard for them to do in the presence of a health professional. There is growing evidence from the breastfeeding peer support literature that the social relationships created in the peer/mother encounters are central to the provision of effective breastfeeding support (Atif et al., 2019; Dennis, 2003; Forster et al., 2019). The IBAMI and SIBs data suggest that, in line with the findings from a recent Australian study, the experiential knowledge of the BFPS, together with the training they received, facilitated their provision of the emotional and social support which resulted in improved breastfeeding outcomes (Forster et al., 2019).

To the best of our knowledge, this is the first study of the use of BFPS in hospitals in a low- and middle-income context. BFPSs have been used in hospitals in high-income countries, and although such interventions have been largely successful (Hopper & Skirton, 2016; Rossman, Engstrom, & Meier, 2012), some studies identified observable challenges. Among the challenges that have been reported were the inability of HWs to adapt to the presence of the BFPS and a lack of appreciation of peer supporter work by HWs (Aiken & Thomson, 2013). Problems have also occurred when BFPSs work beyond their scope of training (Rossman, Engstrom, & Meier, 2012), where no formal rota exists for managing, BFPS presence on the wards and when HWs undermine BFPS roles by providing conflicting advice to mothers or top-up formula milk for the infant (Aiken & Thomson, 2013; Hopper & Skirton, 2016; Meier, Engstrom, & Rossman, 2013; Rossman, Engstrom, & Meier, 2012). In the IBAMI and SIBs studies, all of the participants reported good working relationships between the different cadres and the BFPS, enhanced by good communication and a sense that the BFPS did not encroach on the roles of the professional staff.

Despite the positive reception for the BFPS and an appreciation of the assistance that they were providing, challenges remained. The staff shortages and human resource challenges faced in all of the hospitals led to a demand for the BFPS to support breastfeeding practices in other departments, including among outpatients where the breastfeeding challenges of mothers could not be adequately met with the available staff. Another challenge faced by BFPS is one that is commonly reported in health system's research findings in LMIC. There was a delay in receipt of the monthly salaries that were scheduled for payment at the end of each month (Nyikuri, Tsofa, Barasa, Okoth, & Molyneux, 2015; Obadha, Chuma, Kazungu, & Barasa, 2019; Tsofa, 2017; Tweheyo et al., 2017). Lastly, infrastructure challenges arose from a lack of operational spaces for the BFPS to work. Overcrowding, a common feature of Kenyan public hospitals (English et al., 2004; Irimu et al., 2014), meant that there were no spare spaces available to allow the BFPS space and privacy to support mothers with counselling or the teaching of effective

breastfeeding techniques. This problem was also mentioned as a concern by the mothers themselves in the IBAMI study (Kahindi, Jones, Berkley, & Mwangome, 2020).

Despite these challenges, the results are encouraging, pointing a potential way forward for improving relactation among hospitalised malnourished infants in Kenya. However, further research on the cost-effectiveness and transferability of this approach across a broader range of hospital settings within Kenya and beyond is required to assess the implications for policy and practice in LMICs.

4.1 | STRENGTHS AND LIMITATIONS

The strength of our study was in our ability to triangulate our findings across two different implementation contexts in three different hospitals. However, the findings are from one-off cross-sectional in-depth interviews and rely on reported rather than observed behaviours. Non-participant or participant observations and a series of longitudinal interviews would provide a more nuanced understanding of the barriers and facilitators to the use of BFPS in an inpatient setting.

5 | CONCLUSION

Breastfeeding peer supporter integration into public hospital settings in rural Kenya proved acceptable by the front-line health staff and enhanced the implementation of the WHO (2013) nutritional rehabilitation guidelines for malnourished infants <6m. By addressing HW shortages and time constraints, BFPSs were able to support mothers to continue to practice or re-establish EBF during admission. The social and cultural backgrounds of the BFPS facilitated the development of trusting relationships with the mothers. These trusting relationships are central to the effective delivery and uptake of appropriate breastfeeding counselling and support.

ACKNOWLEDGMENTS

The authors would like to thank all data collectors and participants. We would like to acknowledge the hospitals, HWs and BFPSs who participated in the implementation. The IBAMI study was funded by Joint Global Health Trials, Grant MR/N021940/1, whereas SIB study was funded by Medical Research Council, Grant MR/R002738/1.

CONFLICTS OF INTEREST

The authors declare that they have no conflict of interest.

CONTRIBUTIONS

MM and CJ conceived and designed the study. DO and SC analysed the data and drafted the manuscript. All the authors reviewed the manuscript.

DATA AVAILABILITY STATEMENT

Data that may be made available include data included in the manuscript in form of quotes, summaries of the main themes and anonymised data transcripts of participant interviews in keeping with the KEMRI-Wellcome Trust Research Programme's Data Governance Policy. Requests can be facilitated by contacting the KWTRP's Data Governance Committee on email (at dgc@kemri-wellcome.org).

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REFERENCES

- Aiken, A., & Thomson, G. (2013). Professionalisation of a breast-feeding peer support service: Issues and experiences of peer supporters. *Midwifery*, 29(12), e145–e151. <https://doi.org/10.1016/j.midw.2012.12.014>
- Atif, N., Bibi, A., Nisar, A., Zulfikar, S., Ahmed, I., LeMasters, K., ... Rahman, A. (2019). Delivering maternal mental health through peer volunteers: A 5-year report. *Int J Ment Health Syst*, 13, 62. <https://doi.org/10.1186/s13033-019-0318-3>
- Corbett, M. (2000). Severe malnutrition in the infants less than 6 months: Use of supplemental suckling technique. Field Exchange. Retrieved from <http://fex.enonline.net/9/tfp>
- Dennis, C. L. (2003). Peer support within a health care context: A concept analysis. *International Journal of Nursing Studies*, 40(3), 321–332. [https://doi.org/10.1016/s0020-7489\(02\)00092-5](https://doi.org/10.1016/s0020-7489(02)00092-5)
- English, M., Esamai, F., Wasunna, A., Were, F., Ogutu, B., Wamae, A., ... Peshu, N. (2004). Delivery of paediatric care at the first-referral level in Kenya. *Lancet (London, England)*, 364(9445), 1622–1629. [https://doi.org/10.1016/S0140-6736\(04\)17318-2](https://doi.org/10.1016/S0140-6736(04)17318-2)
- Forster, D. A., McLardie-Hore, F. E., McLachlan, H. L., Davey, M. A., Grimes, H. A., Dennis, C. L., ... Amir, L. H. (2019). Proactive peer (mother-to-mother) breastfeeding support by telephone (ringing up about breastfeeding early [RUBY]): A multicentre, unblinded, randomised controlled trial. *EClinicalMedicine*, 8, 20–28. <https://doi.org/10.1016/j.eclinm.2019.02.003>
- Hallarou, M., Doudou, H. M., Manzo, M. L., Donnen, P., Dramaix, M., & Ousmane, N. (2017). Managing acute malnutrition in infants aged less than six months: A qualitative assessment in niger public hospitals. *African Journal of Food, Agriculture, Nutrition and Development*, 17(04), 12678–12690. <https://doi.org/10.18697/ajfand.80.15240>
- Hopper, H., & Skirton, H. (2016). Factors influencing the sustainability of volunteer peer support for breast-feeding mothers within a hospital environment: An exploratory qualitative study. *Midwifery*, 32, 58–65. <https://doi.org/10.1016/j.midw.2015.09.007>
- Irimu, G. W., Greene, A., Gathara, D., Kihara, H., Maina, C., Mbori-Ngacha, D., ... English, M. (2014). Factors influencing performance of health workers in the management of seriously sick children at a Kenyan tertiary hospital—Participatory action research. *BMC Health Services Research*, 14, 59. <https://doi.org/10.1186/1472-6963-14-59>
- Jolly, K., Ingram, L., Khan, K. S., Deeks, J. J., Freemantle, N., & MacArthur, C. (2012). Systematic review of peer support for breastfeeding continuation: Metaregression analysis of the effect of setting, intensity, and timing. *BMJ*, 344, d8287. <https://doi.org/10.1136/bmj.d8287>
- Kahindi, J., Jones, C., Berkley, J. A., & Mwangome, M. (2020). Establishing exclusive breastfeeding among in-patient malnourished infants in a rural Kenyan hospital: Mothers' experiences of a peer supporter

- intervention. *International Breastfeeding Journal*, 15(1), 40. <https://doi.org/10.1186/s13006-020-00278-9>
- Kaunonen, M., Hannula, L., & Tarkka, M. T. (2012). A systematic review of peer support interventions for breastfeeding. *Journal of Clinical Nursing*, 21(13–14), 1943–1954. <https://doi.org/10.1111/j.1365-2702.2012.04071.x>
- Kempenaar, L. E., & Darwent, K. L. (2013). The impact of peer support training on mothers' attitudes towards and knowledge of breastfeeding. *Maternal & Child Nutrition*, 9(3), 359–368. <https://doi.org/10.1111/j.1740-8709.2011.00373.x>
- Kerac, M., Blencowe, H., Grijalva-Eternod, C., McGrath, M., Shoham, J., Cole, T. J., & Seal, A. (2011). Prevalence of wasting among under 6-month-old infants in developing countries and implications of new case definitions using WHO growth standards: A secondary data analysis. *Archives of Disease in Childhood*, 96(11), 1008–1013. <https://doi.org/10.1136/adc.2010.191882>
- Kimani-Murage, E. W., Griffiths, P. L., Wekesah, F. M., Wanjohi, M., Muhia, N., Muriuki, P., ... Madise, N. J. (2017). Effectiveness of home-based nutritional counselling and support on exclusive breastfeeding in urban poor settings in Nairobi: a cluster randomized controlled trial. *Globalization and Health*, 13(1), 90. <https://doi.org/10.1186/s12992-017-0314-9>
- McGrath. (2016). Updated review of national guidelines on MAMI: Key findings. In: MAMI Interest Group Meeting.
- Meier, P. P., Engstrom, J. L., & Rossman, B. (2013). Breastfeeding peer counselors as direct lactation care providers in the neonatal intensive care unit. *Journal of Human Lactation*, 29(3), 313–322. <https://doi.org/10.1177/0890334413482184>
- Miseda, M. H., Were, S. O., Muriangi, C. A., Mutuku, M. P., & Mutwiwa, S. N. (2017). The implication of the shortage of health workforce specialist on universal health coverage in Kenya. *Human Resources for Health*, 15(1), 80. <https://doi.org/10.1186/s12960-017-0253-9>
- Mwangome, M., Murunga, S., Kahindi, J., Gwiyo, P., Mwasho, G., Talbert, A., ... Berkley, J. A. (2019). Individualized breastfeeding support for acutely ill, malnourished infants under 6 months old. *Maternal & Child Nutrition*, 16(1), e12868. <https://doi.org/10.1111/mcn.12868>
- Nankunda, J., Tumwine, J. K., Nankabirwa, V., & Tylleskär, T. (2010). "She would sit with me": Mothers' experiences of individual peer support for exclusive breastfeeding in Uganda. *International Breastfeeding Journal*, 5(1), 16. <https://doi.org/10.1186/1746-4358-5-16>
- Nyikuri, M., Tsofa, B., Barasa, E., Okoth, P., & Molyneux, S. (2015). Crises and resilience at the frontline-public health facility managers under devolution in a sub-county on the Kenyan Coast. *PLoS ONE*, 10(12), e0144768. <https://doi.org/10.1371/journal.pone.0144768>
- Nzinga, J., Mbindyo, P., Mbaabu, L., Warira, A., & English, M. (2009). Documenting the experiences of health workers expected to implement guidelines during an intervention study in Kenyan hospitals. *Implementation Science*, 4, 44. <https://doi.org/10.1186/1748-5908-4-44>
- Obadha, M., Chuma, J., Kazungu, J., & Barasa, E. (2019). Health care purchasing in Kenya: Experiences of health care providers with capitation and fee-for-service provider payment mechanisms. *The International Journal of Health Planning and Management*, 34(1), e917–e933. <https://doi.org/10.1002/hpm.2707>
- Oberlin, O., & Wilkinson, C. (2008). Evaluation of Relactation by the Supplemental Suckling Technique. *Field Exchange*, 32, p. 29. www.enonline.net/fex/32/evaluation
- Ochola, S. A., Labadarios, D., & Nduati, R. W. (2012). Impact of counselling on exclusive breast-feeding practices in a poor urban setting in Kenya: A randomized controlled trial. *Public Health Nutrition*, 16(10), 1732–1740. <https://doi.org/10.1017/s1368980012004405>
- Oza-Frank, R., Bhatia, A., & Smith, C. (2014). Impact of peer counselors on breastfeeding outcomes in a nondelivery NICU setting. *Advances in Neonatal Care*, 14(4), E1–E8. <https://doi.org/10.1097/ANC.000000000000101>
- Reeder, J. A., Joyce, T., Sibley, K., Arnold, D., & Altindag, O. (2014). Telephone peer counseling of breastfeeding among WIC participants: A randomized controlled trial. *Pediatrics*, 134(3), e700–e709. <https://doi.org/10.1542/peds.2013-4146>
- Ritchie Puchalski, L. M., Khan, S., Moore, J. E., Timmings, C., van Lettow, M., Vogel, J. P., ... Straus, S. E. (2016). Low- and middle-income countries face many common barriers to implementation of maternal health evidence products. *Journal of Clinical Epidemiology*, 76, 229–237. <https://doi.org/10.1016/j.jclinepi.2016.02.017>
- Rossman, B., Engstrom, J. L., & Meier, P. P. (2012). Healthcare providers' perceptions of breastfeeding peer counselors in the neonatal intensive care unit. *Research in Nursing & Health*, 35(5), 460–474. <https://doi.org/10.1002/nur.21496>
- Seema, M., Patwari, A., & Satyanarayana, L. (1997). Relactation: An effective intervention to promote exclusive breastfeeding. *Journal of Tropical Pediatrics*, 43, 213–216. <https://doi.org/10.1093/tropej/43.4.213>
- Singh, D. K., Rai, R., Mishra, P. C., Maurya, M., & Srivastava, A. (2014). Nutritional rehabilitation of children <6 mo with severe acute malnutrition. *Indian Journal of Pediatrics*, 81(8), 805–807.
- Tsofa, B. (2017). Devolution and its effects on health workforce and commodities management—Early implementation experiences in Kilifi County, Kenya. *International Journal for Equity in Health*, 16, 169. <https://doi.org/10.1186/s12939-017-0663-2>
- Tweheyo, R., Daker-White, G., Reed, C., Davies, L., Kiwanuka, S., & Campbell, S. (2017). 'Nobody is after you; it is your initiative to start work': A qualitative study of health workforce absenteeism in rural Uganda. *BMJ Global Health*, 2(4), e000455. <https://doi.org/10.1136/bmjgh-2017-000455>
- Tylleskär, T., Jackson, D., Meda, N., Engebretsen, I. M. S., Chopra, M., Diallo, A. H., ... Tumwine, J. K. (2011). Exclusive breastfeeding promotion by peer counsellors in sub-Saharan Africa (PROMISE-EBF): A cluster-randomised trial. *The Lancet*, 378(9789), 420–427. [https://doi.org/10.1016/s0140-6736\(11\)60738-1](https://doi.org/10.1016/s0140-6736(11)60738-1)
- Van Ryneveld, M., Mwangome, M., Kahindi, J., & Jones, C. (2020). Mothers' experiences of exclusive breastfeeding in a postdischarge home setting. *Matern Child Nutr*, 16, e13016. <https://doi.org/10.1111/mcn.13016>
- Vygen, S. B., Roberfroid, D., Captier, V., & Kolsteren, P. (2013). Treatment of severe acute malnutrition in infants aged <6 months in Niger. *The Journal of Pediatrics*, 162(3), 515–521 e513. <https://doi.org/10.1016/j.jpeds.2012.09.008>
- Wakaba, M., Mbindyo, P., Ochieng, J., Kiriinya, R., Todd, J., Waudo, A., ... English, M. (2014). The public sector nursing workforce in Kenya: A county-level analysis. *Human Resources for Health*, 12(1), 1–6.
- WHO. (2013). *Guideline: Updates on the management of severe acute malnutrition in infants and children*. Geneva: World Health Organization. Retrieved from http://apps.who.int/iris/bitstream/10665/95584/1/9789241506328_eng.pdf

How to cite this article: Chabeda S, Oluoch D, Mwangome M, Jones C. Infant malnutrition treatment in Kenya: Health worker and breastfeeding peer supporter experiences. *Matern Child Nutr*. 2021;e13148. <https://doi.org/10.1111/mcn.13148>