Breastfeeding and complementary feeding practices of mothers exposed to the Baby-Friendly Hospital Initiative in Limpopo Province

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Background. Appropriate infant feeding is crucial for growth and development of children in the first 5 years of their life. Despite the implementation of the Baby-Friendly Hospital Initiative (BFHI), now known as Mother-Baby Friendly Hospital Initiative, exclusive breastfeeding and complementary feeding practices remain barriers to optimal breastfeeding practices in South Africa.
Objectives. To explore the impact of the BFHI on breastfeeding and complementary feeding practices of mothers for second or subsequent pregnancies.
Methods. The study design was a cross-sectional survey and included 169 mother-baby pairs conveniently selected from clinics in Limpopo Province. Data were collected using a validated questionnaire and analysed for 157 complete data sets using the Statistical Package for Social Sciences version 26.0. Both univariable and multivariable logistic regression analyses were used to examine the impact of baby-friendly hospitals on breastfeeding practices of mothers.
Results. Few mothers in both groups practised exclusive breastfeeding for the recommended time (BFHI 22.2%; non- BFHI 30.6%). The main reasons for introducing early complementary foods were that the child was hungry, crying or was not satisfied with breastmilk. Mothers in the BFHI group were three times (odds ratio (OR) 3.53; 95% confidence interval (CI) 1.13 - 10.98) more likely to breastfeed their infants, and two times (OR 2.22; 95% CI 1.08 - 4.58) more likely to initiate their infants on water with added glucose or salt before the age of 6 months than mothers in the non-BFHI group.
Conclusion. Mothers from the non-baby-friendly group had better breastfeeding practices. Evidence showed that for second or subsequent pregnancies, exposure to a baby-friendly facility during first pregnancy did not sustain appropriate breastfeeding and complementary feeding practices. Whether mothers were exposed or not, practices were similar. Strengthening and continual evaluation of breastfeeding interventions might improve impact on child survival outcomes in the study area.

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Appropriate infant feeding is essential for growth and development of children, especially in the first 5 years of their life. The United Nations Children's Fund (UNICEF) recommend that for optimal growth and development, infants should be breastfed immediately after delivery, given no prelacteal feeds, exclusively breastfed for the first 6 months of life and given complementary foods from 6 months of life.[1] Breastmilk is the ideal food for the baby in the first 6 months of life and continues to play an important role in the infant's growth and development in the first 2 years of life. Exclusive breastfeeding from 0 to 6 months of age is recommended by the World Health Organization (WHO) as the optimal feeding method for infants, including infants of HIV-infected women from developing countries that choose to breastfeed.[2] However, misleading advice from family members and baby carers, cultural beliefs, practices and rites encourage mothers to give solid foods too early and to give extra water and herbs to breastfeeding babies.[2] Therefore, it is important to empower mothers so that they can breastfeed successfully and continue to provide appropriate nutrition for their infant's growth for the advocated 1 000 days.[2]

The Baby-Friendly Hospital Initiative (BFHI) is one of the child survival strategies that was launched in 1991 following the Innocenti Declaration, which was implemented in 1990 by countries worldwide.[3] The aim of the BFHI is to ensure that all maternity health facilities promote, protect and support breastfeeding through the elimination of practices that discourage breastfeeding. The South African (SA) government has committed itself to implementing the BFHI in all healthcare facilities that offer maternity services with the hope of improving breastfeeding rates, especially exclusive breastfeeding.[2] This programme is now called the Mother-Baby-Friendly-Hospital Initiative (MBFHI). Despite the benefits of exclusive breastfeeding, very few mothers in SA exclusively breastfeed for the recommended period of 6 months, as reported in previous studies.[4]

Research on breastfeeding practices has been conducted in other countries. Studies in Nigeria have also reported poor exclusive breastfeeding practices by mothers.[5,6] Jemide *et al.*[6] observed that the majority of mothers in their study in Nigeria had knowledge about exclusive breastfeeding. However, regarding the time to commence complementary foods it was observed that only 28.5% of mothers knew the appropriate age to do so. They concluded that all mothers should be informed about appropriate infant feeding, which include the benefits of breastfeeding and management of

lactation, which is one of the main aims of the BFHI strategy.[6] A study conducted in Australia on BFHI and breastfeeding duration, indicated that there is ample evidence that a number of factors are associated with the length of time for which a woman exclusively breastfeeds her child.[7] Wright and Hurst's study[8] further indicated that certain hospital practices, such as early skin-to-skin contact after birth, having the mother and infant together during their hospital stay and early discharge from hospital have influenced whether a mother maintains exclusive breastfeeding.

Most of the studies regarding BFHI focused on the implementation of the programme.[9-11] Very few studies have evaluated the influence of the programme on breastfeeding outcomes, which are breastfeeding initiation, duration, exclusivity and sustainability of feeding practices with subsequent pregnancies. Exclusive breastfeeding in this study is defined as feeding breastmilk only and no other liquids or solids except vitamins, mineral supplements or prescribed medication,[12] and is the recommended feeding practice for all babies before the age of 6 months. Therefore, the current study sought to determine the impact of BFHI as an intervention to improve breastfeeding initiation and duration, as well as exclusivity and complementary feeding practices for subsequent pregnancies after exposure to a BFHI programme.

Methods

Research design, setting, population and sample selection

The study employed a cross-sectional design. The target population was mother-baby pairs recruited from clinics in two districts in Limpopo Province, SA. Mopani and Vhembe districts were conveniently selected because at the time the province was actively promoting facilities to be assessed. There were 2 regional, 13 district and 2 specialised psychiatric public hospitals in the two districts. The combined total bed capacity of the hospitals is 1 237, including maternity services. The primary healthcare clinics in SA provide maternal and childcare services daily. There were 123 and 94 primary healthcare clinics in Vhembe and Mopani, respectively. Simple random sampling was used to select 12 primary healthcare centres or clinics serviced by 1 regional and 4 district hospitals located in the two districts. The primary healthcare clinics were clustered by district, then assigned a number, and 6 from each district were selected. An attempt was made to select at least one feeder clinic per district hospital. The mothers were selected using convenience sampling on the day of visit to the primary healthcare clinic. The estimated average number of deliveries per month in BFHI facilities in the two districts was 400 at the time of the study. Two hundred (200) was the sample size calculated using the Slovin's formula by the statistician. The final sample recruited was 169 (84.5% response rate) mother-baby pairs. The final sample included those who delivered in hospitals in the two districts and those who delivered in other hospitals in the country but were using the targeted clinics for childcare services. The data were collected over an 18-month period from 2013 to 2014.

Data collection tools

Data were collected using a validated questionnaire, which had four sections, namely: sociodemographic and health status, environment factors and infant feeding practices. Complementary feeding was assessed by asking mothers 15 structured questions on feeding practices, 10 structured questions on infant and young child nutrition knowledge, and 2 questions on growth monitoring. The instrument was designed based on the BFHI implementation guidelines according to the WHO and UNICEF.[1] The data collection instrument was piloted and validated to assess the clarity and completeness of the questions. The pilot was conducted at Mhinga primary healthcare clinic and each of the assistants interviewed two mothers. After the pilot, minor changes were made to the questionnaire. Three trained research assistants, who were qualified and registered nutritionists, interviewed mothers using the local languages, namely Northern Sotho, Tshivenda, and Xitsonga. The questionnaire was developed in English and translated to the three languages by the authors.

Ethics considerations

The research proposal was approved and the ethics clearance obtained from the University of Venda Research and Ethics Committee (ref. no. SHS/08/NUT/0002). Informed consent was voluntarily sought and obtained from all participating respondents. The mothers were approached by the research assistant, and the study was explained to them in their preferred language, after which they were allowed to ask questions for clarity; thereafter they completed a consent form for themselves and their infants. The ethical principles of the Declaration of Helsinki (2013) were adhered to.

Data analysis

Data were entered in Microsoft Excel (Microsoft, USA) after cleaning and coding. The data were then exported and analysed using the latest version (26) of the Statistical Package for Social Sciences (SPSS) (IBM Corp., USA). Quantitative methods of data analysis such as descriptive statistics and inferential statistics were used. Descriptive statistics were presented in means, percentages, and standard deviation, and minimum and maximum values in tables and figures. Inferential statistics used included the Pearson's χ^2 test and logistic regression. Pearson's χ^2 test was used to assess the differences between groups based on their sociodemographic characteristics (which included mother's age, education level, marital status, and sex of the child), feeding knowledge and practices and BFHI v. non-BFHI status of the mothers. A p-value of <0.05 was considered significant. Logistic regression was used to investigate the association between the sociodemographic characteristics, maternal feeding knowledge and feeding practices and BFHI status of mothers (BFHI and non-BFHI). The final model was adjusted for variables (including mother's age, education level, marital status and the sex of the child) that might also have influenced the maternal feeding knowledge and practices. Tests for trends across categories were done by treating the categories as continuous variables in the logistic regression analyses. The odds ratios (ORs) and the 95% confidence intervals (CIs) were used to present the strength of association between the factors and outcome variables.

Results

Sociodemographic characteristics of mothers and infants

The sample size for analysis was 157 mother-child pairs. More than half (56.2%) of the infants were born in a non-BFHI hospital, 36.7% were born in a BFHI hospital and 7.1% did not indicate the name of the hospital (Table 1, https://www.samedical.org/file/2014). One-third of infants were aged 0 - 6 months in both groups (BFHI 36.1%; non-BFHI 37.9%), and the others were distributed in other age groups (Table 1). Most mothers were aged 21 - 30 years in both groups (BFHI 59.7%; non-BFHI 65.3%), while fewer mothers (BFHI 9.7%; non-BFHI 17.9%) were 20 years or younger, and 30.7% BFHI and 16.8% non-BFHI mothers were above 30 years. In both groups education levels were similar, with most mothers reporting secondary education, 11% had tertiary education, while few had

Table 1. Relationship between maternal knowledge of nutrition and attendance of BFHI facilities

Measures	Crude OR (95% CI)	*p*-value	Adjusted RR (95% CI)	*p*-value
The child was breastfed				
No	1.00		1.00	
Yes	2.37 (0.94 - 5.94)	0.066	4.23 (1.08 - 16.54)	0.038
Breastfeeding initiation after delivery				
Immediately after delivery	1.00		1.00	
A day or more after delivery	0.81 (0.26 - 2.54)	0.715	0.61 (0.14 - 2.73)	0.521
Assistance with breastfeeding initiation after delivery				
Nurses/doctors	1.00		1.00	
No one helped me/others	1.21 (0.58 - 2.51)	0.606	0.94 (0.41 - 2.16)	0.884
Allowed to stay with your baby all the time				
No	1.00		1.00	
Yes	0.66 (0.13 - 3.40)	0.622	0.62 (0.12 - 3.27)	0.620
Child given vitamin A supplement before discharge				
No	1.00		1.00	
Yes	2.05 (0.63 - 6.68)	0.234	0.77 (0.53 - 5.90)	0.355
Exclusive breastfeeding duration				
<6 months	1.00		1.00	
≥6 months	1.06 (0.53 - 2.11)	2.118	1.38 (0.63 - 3.04)	0.426
Breastfed in public (e.g. church, shopping complex)				
No	1.00		1.00	
Yes	1.40 (0.53 - 3.69)	0.503	0.83 (0.26 - 2.60)	0.751
Referred to a breastfeeding support group/clinic				
No	1.00		1.00	
Yes	0.40 (0.15 - 1.05)	0.063	0.32 (0.12 - 0.88)	0.026
Home breastfeeding support				
Babysitters/others	1.00		1.00	
Husband	2.96 (1.30 - 6.78)	0.010	3.44 (1.45 - 8.16)	0.005
Parents-in-law	2.98 (1.28 - 6.67)	0.012	2.69 (1.14 - 6.36)	0.024

OR = odds ratio; CI = confidence interval; RR = relative risk.
Logistic regression analysis; p=0.05 at 95% CIs. The multivariable model was adjusted for maternal age, education level and marital status.

primary education only. Approximately half of the mothers in both groups were married (BFHI 48.4%; non-BFHI 53.7%).

Maternal breastfeeding practices for infants

Most mothers in both groups were breastfeeding (88.7% BFHI group; 76.8% non-BFHI group) with almost all infants in both groups being initiated on breastfeeding immediately after delivery. About 70% of the mothers in both groups were assisted to initiate breastfeeding by nurses or doctors, while more than one-quarter of mothers were never helped to initiate breastfeeding. Most mothers (95.2% BFHI group; 96.7% non-BFHI group) could stay with the baby all the time, while <5% did not stay with the baby all the time. Most of the mothers exclusively breastfed for <4 months, while 22% and 30% exclusively breastfed for 6 months in the BFHI group and non-BFHI group, respectively. A significant number of mothers in the non-BFHI group were referred to a breastfeeding support group or clinic on discharge, while very few mothers in the BFHI group were referred to a support group (Supplementary Table 1, https://www.samedical.org/file/2014).

There was a statistically significant difference regarding income, with the BFHI group earning more. In addition, more children in the non-BFHI group were cared for by babysitters. Multivariable analysis was performed, and results showed that there was a statistically significant association between breastfeeding initiation after delivery and attendance at baby-friendly hospitals/clinics. The proportion of mothers who reported not breastfeeding their infants were four times more likely to be attending a non-baby-friendly hospital (OR 4.23; 95% CI 1.08 - 16.54) when adjusted for maternal age, education level, marital status and sex of the child (p=0.038) (Table 1).

The association between BFHI and referral of mothers to a breastfeeding support group/clinic was adjusted but remained significant. Mothers who attended the baby-friendly hospital were 32% (OR 0.32; 95% CI 0.12 - 0.88) less likely to attend the breastfeeding support group/clinic, p=0.026. In addition, mothers who had home breastfeeding support, particularly those who received breastfeeding support from a husband (OR 3.44; 95% CI 1.45 - 8.16) or parents-in-law (OR 2.69; 95% CI 1.14 - 6.36) were three times and twice as likely, respectively, to attend baby-friendly hospitals than those who received support from babysitters (p=0.005) and other relatives (p=0.024) (Table 1).

Maternal infant and young child feeding knowledge

The overall feeding practices knowledge of mothers was assessed by 10 questions. Each correct answer received a score of 1 point. Scores ranging between 0 and 5 points were ranked as low feeding knowledge, 6 - 7 points as fair feeding knowledge and 8 - 10 as good feeding knowledge. The mean (standard deviation) feeding knowledge score for all mothers was 5.7 (2.6) (non-BFHI group 6.1 (2.3), BFHI group 5.4 (2.9), p=0.08). Fig. 1 shows that mothers from

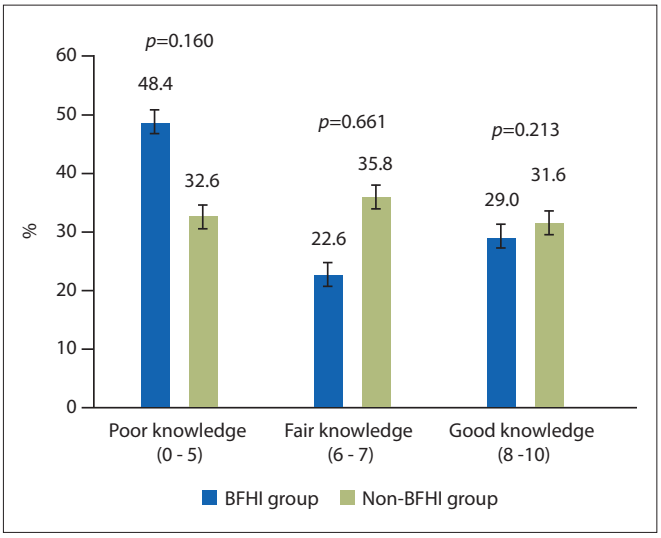

Fig. 1. Overall infant feeding practices knowledge scores of mothers.

the BFHI group performed lower than those from the non-BFHI group in all categories.

Mothers' complementary feeding practices

Nearly two-thirds (63.1%, *n*=99) of infants in both groups were not given infant formula milk at the time of the interview (Supplementary Table 2, https://www.samedical.org/file/2014). Less than half of the mothers (36.9%, *n*=58) whose infants were on infant formula, initiated their infant formula within the first month of birth (BFHI group, *n*=22); non-BFHI, *n*=36) with the majority using a bottle with an artificial teat to feed the infants. About 40% of the mothers gave their infants water within the first month of birth (BFHI group 43.1%; non-BFHI group 39.5%).

Mothers indicated several reasons, such as baby crying a lot (BFHI group 42.6%; non-BFHI group 51.7%), baby is hungry (BFHI group 31.5%; non-BFHI group 13.8%), and baby not sleeping (BFHI group 11.1%; non-BFHI group 28.7%), for giving complementary foods before the recommended age of 6 months. Regarding the frequency of meals consumed by infants, more than half (53.6%) of the mothers reported that they fed their infants three or more times per day. More than half of the mothers in both groups had not been given advice on complementary feeding (53.2%). Among those who were given advice (46.5%, *n*=73), the majority in both groups were given advice by healthcare workers (*n*=64) (Supplementary Table 2, https://www.samedical.org/file/2014).

The early initiation of water (with or without added glucose and/or salt) was statistically significant in the BFHI group when adjusted for mother's age, education level, marital status and sex of the child. Mothers who initiated their babies on water early were twice (OR: 2.26; 95% CI 1.09 - 4.69) as likely to attend baby-friendly hospitals than those who did not give water (Table 2).

The frequency of meals consumed by the child in a day was significantly associated with the mothers' attendance at a baby-friendly hospital/clinic (*p*=0.037). Mothers who reported that they had fed their child twice per day were 0.22% (OR 0.22; 95% CI 0.05 - 0.91) less likely to attend baby-friendly hospitals than those who fed their infants once per day when adjusted for mother's age, education level, marital status and sex of the child (Table 2).

Impact of BFHI exposure on breastfeeding practices

Regarding the early water (glucose, salt) initiation, findings revealed that mothers who attended the baby-friendly hospitals were twice (OR 2.22; 95% CI 1.08 - 4.58) as likely to give water with glucose or salt than mothers who attended the non-baby-friendly hospitals. In addition, mothers who attended the baby-friendly hospitals were 32% (OR 0.32; 95% CI 0.12 - 0.87) less likely to use a breastfeeding support group/clinic than those who attended non-baby-friendly hospitals (Table 3).

Discussion

The main aim of this study was to determine the impact of BFHI as an intervention to improve breastfeeding initiation and duration, as well as exclusivity for subsequent pregnancies after exposure to a BFHI programme. Sociodemographic and health status environment factor and infant feeding practices were determined.

The results show that the majority of mothers were of normal childbearing age (15 - 49 years),[12] and just over a third had given birth in a BFHI facility. About 48% of mothers in a study done in Saudi Arabia were aged 20 - 25 years while 50% were aged 30 years and older.[12] Breastfeeding plays a vital role in child survival as it provides all nutrients the baby needs in the first 6 months and continues to provide adequate nutrients with the addition of appropriate complementary foods.[1] Research indicates that the majority of mothers in most parts of SA and other developing countries, such as Nigeria and Saudi Arabia, initiated breastfeeding immediately after delivery and breastfed their babies.[5,6,12,13] A similar observation was made in the current study, where almost all mothers initiated their babies on breastfeeding immediately after delivery as recommended by the WHO/UNICEF.[14]

The WHO/UNICEF recommend that all mothers should be assisted to initiate breastfeeding within half an hour after delivery as it will help stimulate breastmilk production. In addition, the early hours and days of a newborn's life are a critical window for providing mothers with the support they need to establish lactation and breastfeed successfully.[15] There has been growing evidence of the significant impact of early initiation of breastfeeding, preferably within the first hour after birth, on reducing overall neonatal mortality.[16] In the current study, the majority of mothers in both groups were assisted to initiate breastfeeding by healthcare providers, mainly nurses and doctors. However, about one-quarter of mothers in both groups reported that they were never assisted to initiate breastfeeding immediately after delivery. The reasons for this were not explored during the current study. Detailed analysis revealed that a quarter of mothers in the BFHI group were less likely to have infants initiated on breastfeeding after delivery than those who attended the non-baby-friendly hospitals. The reason was not explored.

In the current study, most mothers could stay with their babies all the time in both groups, while very few mothers were unable to stay with their babies. Both BFHI and non-BFHI hospitals still practise separation of the mother and baby, where they stay in different wards. In cases where mothers are separated from the baby, mothers do not have continued access to the baby. According to the WHO implementation guideline, all mothers should be allowed to stay with the baby 24 hours a day as this encourages mothers to breastfeed on demand and to practise rooming-in 24 hours a day.[15] This implies that some of the mothers did not spend enough time with their babies in the first hours or days after delivery. Previous studies have revealed that keeping mothers and newborns together is a safe and healthy birth practice.[17]

UNICEF recommends exclusive breastfeeding for the first 6 months as breastmilk provides all the nutrients the baby needs.[18] In addition, breastmilk provides the baby with antibodies from the mother which help to combat disease and protect the baby from illnesses such as diarrhoea and acute respiratory infections. Despite

Table 2. Relationship between mother's complementary feeding practices and attendance at BFHI facilities

Measures	Crude OR (95% CI)	*p*-value	Adjusted RR (95% CI)	*p*-value
The child was on infant formula				
No	1.00		1.00	
Yes	0.96 (0.49 - 1.89)	0.911	1.45 (0.67 - 3.17)	0.349
Timing of child initiated on infant formula				
<6 months	1.00		1.00	
≥6 months	1.53 (0.52 - 4.49)	0.4397	1.75 (0.48 - 6.37)	0.398
The utensil used to feed baby with infant formula				
Bottle with artificial teat	1.00		1.00	
Spoon/cup/other (mug, glass)	1.21 (0.25 - 5.97)	0.811	1.22 (0.07 - 20.93)	0.890
Water consumption by the baby (with or without added glucose and/or salt)				
No	1.00		1.00	
Yes	1.99 (0.98 - 4.02)	0.056	2.26 (1.09 - 4.69)	0.028
Timing of water initiation by the baby				
<6 months	1.00		1.00	
≥6 months	0.29 (0.08 - 1.14)	0.506	0.28 (0.03 - 2.80)	0.280
The utensil used to give water to the baby				
Bottle with artificial teat	1.00		1.00	
Cup/spoon/other (mug, glass)	1.74 (0.80 - 3.78)	0.552	1.74 (0.32 - 9.37)	0.519
Reasons for giving complementary foods				
Baby cries a lot	1.00		1.00	
Baby hungry	1.96 (0.37 - 10.47)	0.433	3.01 (0.53 - 17.06)	0.213
Advised by relatives/friends	1.41 (0.70 - 2.82)	0.340	1.72 (0.81 - 3.65)	0.159
Frequency of meals consumed by the baby per day				
One time	1.00		1.00	
Two times	0.34 (0.09 - 1.31)	0.118	0.22 (0.05 - 0.91)	0.037
Three and more times	0.60 (0.17 - 2.14)	0.433	0.42 (0.11 - 1.63)	0.213
Trained on complementary feeding				
Yes	1.0		1.00	
No	1.18 (0.62 - 2.26)	0.6116	2.08 (0.97 - 4.47)	0.060
Source of training				
Health workers	1.00		1.00	
Parents/parents-in-law/printed media (newspaper and magazine)	1.00 (0.52 - 1.93)	0.993	0.45 (0.07 - 2.64)	0.377

BFHI = Baby-Friendly Hospital Iniative; OR = odds ratio; CI = confidence interval; RR = relative risk.
Logistic regression analysis; p=0.05 at 95% CIs. The multivariable model was adjusted for maternal age, education level and marital status.

Table 3. Child breastfeeding, breastfeeding support, and water (glucose, salt) consumption v. baby-friendly status of hospital

	Child breastfed		Breastfeeding support group/clinic		Water consumption by the baby (glucose, salt)	
Measures	Adjusted RR (95% CI)	*p*-value	Adjusted RR (95% CI)	*p*-value	Adjusted RR (95% CI)	*p*-value
Baby-friendly status						
Non-baby-friendly hospitals	1.00		1.00		1.00	
Baby-friendly hospitals	3.53 (1.13 - 10.98)	0.030	0.32 (0.12 - 0.87)	0.026	2.22 (1.08 - 4.58)	0.030

RR = relative risk, CI = confidence interval.
Adjusted for maternal age, education level, marital status and sex of child.

these health benefits, very few mothers in both groups practised exclusive breastfeeding until the recommended age of 6 months, which indicates that mixed feeding was practised by most mothers in both groups. Similarly, the SADHS 2016[19] reported that 32% of infants <6 months were exclusively breastfed, while 14% of infants consumed plain water, 1% consumed non-milk liquids, 11% consumed other milk, and 18% consumed complementary foods in addition to breast milk. The low rates of exclusive breastfeeding and early introduction of complementary feeding require much deeper exploration, taking into consideration cultural and traditional practices.

Detailed findings in this study revealed that mothers who attended the BFHI group were twice as likely to give water to their babies early compared with their counterparts in the non-BFHI group. Mothers cited reasons for introducing complementary foods before the age of 6 months as the baby crying a lot, which was interpreted as hunger,

and the baby not sleeping. Kakute *et al.*[20] reported that family and community pressures are among the most common reasons why mothers introduce complementary foods before the recommended age. Mixed feeding practices have been the norm in most rural communities of SA and Cameroon, as breastmilk is viewed as an incomplete food which cannot satisfy the baby's hunger.[13,20]

Breastfeeding happens mainly outside the health facility, as mothers are discharged from healthcare facilities before breastfeeding is established. If knowledge is in place, mothers are expected to sustain sound feeding practices with subsequent births. Hence, the WHO recommended the establishment of breastfeeding support groups to which mothers are referred on discharge.[14] Mothers who received breastfeeding support from their husbands and parents-in-law were three times and twice as likely, respectively, to attend baby-friendly hospitals than those who received support from babysitters and other relatives. Neither the contributing factors to non-referrals to support groups nor the availability of support groups in their residential areas were explored. We speculate that it is probable that BFHI group mothers were thought to be sufficiently trained and empowered and did not need support groups. In contrast, preceding studies showed that the more baby-friendly hospital practices mothers met, the better the breastfeeding outcomes than their counterparts in non-baby-friendly hospitals.[11,21] Lack of support for breastfeeding mothers is one of the reasons why mothers are unable to exclusively breastfeed and/or continue to breastfeed their babies as recommended by the WHO.[15]

Even though most mothers knew the age of introducing complementary food, it did not translate into practice, as many infants were given complementary foods before the age of 6 months. Mothers in both groups cited several reasons for introducing complementary foods before 6 months: baby's hunger, baby crying a lot and baby not satisfied with breastmilk only. These findings are similar to studies conducted in SA, China, Pakistan and other regions that also revealed that complementary feeding was introduced because the child cried a lot.[22-25] A systematic review[26] revealed that adherence to the BFHI Ten Steps has a positive impact on short-term, medium-term and long-term breastfeeding outcomes, and that there was a dose-response relationship between the number of BFHI steps that women were exposed to and the likelihood of improved breastfeeding outcomes. Researchers concluded that community support appears to be essential for sustaining breastfeeding impacts of BFHI in the longer term.

The evidence from this study suggests that for second or subsequent pregnancies, exposure to BFHI facilities during the first pregnancy did not sustain appropriate breastfeeding and complementary feeding practices. Breastfeeding and complementary feeding practices were similar, whether mothers were exposed to BFHI or not.

Study limitations

This study had a small sample size, similar to challenges faced by preceding studies that struggled to assess the baby-friendly initiative using an observational study design.[10,24,25] The sample size was estimated based on monthly deliveries in BFHI facilities; perhaps a broader population size of all deliveries over a year should be used. The period between the pregnancies or exposure to the BFHI facility was not determined, nor was the number of times they were exposed. The choice of a quantitative survey may have limited the in-depth data usually elucidated when using a qualitative approach.[27] Furthermore, the findings should apply to similar settings of low-resourced rural health facilities.

Conclusion

In conclusion, mothers who attended non-baby-friendly facilities had better breastfeeding practices, while complementary feeding practices and knowledge were similar in both groups. Although mothers who attended baby-friendly hospitals were more likely to breastfeed their infants, they also initiated infants on water early and failed to utilise breastfeeding support groups for encouragement. Strengthening and continual monitoring and evaluation of the new MBFI interventions, including beneficiaries, may improve impact on breastfeeding practices and child health outcomes.

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