

Systematic Review

Effects of community-based interventions on exclusive breastfeeding among lactating women: a systematic review

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Received: 07 July 2021

Revised: 15 August 2021

Accepted: 17 August 2021

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ABSTRACT

Improvement in the exclusive breastfeeding (EBF) rates until 6 months have been proved to be a major contributor in the improvement of child survival over last two decades because EBF provides optimal nutrition for early life. However, most of the low-income countries (LIC) and low-middle income countries (LMIC) are below the 90% benchmark set by World Health Organization. Evidence regarding CBIs for EBF among lactating women with infants <6 m was searched in PubMed and Cochrane library. Studies from LICs and LMICs that reported EBF until 6 months as outcomes were included and their results were analysed. Data extraction included characteristics of the studies and full summary that involved the effect of interventions on the outcomes. Of 5,530 studies initially identified, 25 studies were included for the systematic review. The interventions were community-based that focused on breastfeeding practices among lactating women with infants <6 m. The studies were geographically diverse-involved LICs (n=7) and LMICs (n=11). The population ranged from n=12 to 26,262. Of 25 studies, five types of interventions reported-counselling interventions (n=14), training to peer counsellors (n=2), mass media interventions (n=5), mobile phone Interventions (n=1), and EBF promotion and education (n=3). CBIs could substantially increase the rates of EBF. The review identified five types of CBIs, indicating that there are different ways through which high EBF rates could be achieved. Counselling intervention was more effective but other interventions have also shown significant results in improving BF practices.

Keywords: Community based interventions, Infants under 6 months, Lactating women, EBF practices

INTRODUCTION

Breastfeeding: a worldwide neglected agenda

The world health organization (WHO) and the United Nation's children fund (UNICEF) have recommended early initiation of breastfeeding (EIBF) and EBF in first six months of an infant's life as optimal nutrition in early childhood.¹ EIBF reduces the risk of neonatal mortality and early infant morbidity, whereas, EBF helps infants to survive, support in brain development, improves cognitive performance, improves educational

achievement at age five and protects children against diseases.² Breastfed infants have approximately six times more chance of survival in the early months than non-breastfed infants.³ However, according to global breastfeeding scorecard (2019), currently, 43% of infants are breastfed within one hour of birth and 41% of infants under six months (<6 m) are exclusively breastfed.⁴ Especially, EBF rate is low in most low-income countries (LICs) and lower-and middle-income countries (LMICs) and in other words the rate is below 90% of WHO benchmark, with South-East Asia region (SEAR) having the lowest rates of the EIBF and EBF.^{5,6}

A UNICEF report highlights some challenges, such as lack of political and donor commitment in high burden countries.⁷ Global advocates of breastfeeding (BF) lack in common agenda.⁸ The focus is more on making the policy and less on the implementation of BF interventions.⁹ Furthermore, infant and young child feeding (IYCF) document focuses on BF promotion as behavioural intervention, this leads to the underinvestment in the BF practices.¹⁰ BF is beneficial for both women and children regardless they belong to high or low-income countries or live in a rich or poor household. As the lancet breastfeeding series (2016anthr), describe breastmilk as “the ultimate personalized medicine” which if adapted perfectly it could save about 8,20,000 lives per year and 87% of them will be infants <6 m.¹¹

Global challenges of lactating women for practicing EBF

Improved BF rates have an impact on women as well, because women’s health and wellbeing are improved and the risk of ovarian and breast cancer is reduced.¹¹ Adequate BF is not given much importance in many countries and women worldwide do not have the necessary support they need to breastfeed.¹² For women employee, there are limited or non-existent maternity protection policy that refrains them from EBF. A lack of training, knowledge and skills of healthcare workers leads to providing inaccurate knowledge and support to women.¹³ Cultural practices, family, intimate partners and community have a strong influence on women’s BF decisions.¹⁴ Additionally, industries that are marketing to promote breastmilk substitutes are hampering EBF practices.¹¹

Importance of community-based interventions for EBF

BF is not a typical facility-based intervention as it is not only dependent on health facilities or health workers.¹⁵ A WHO report on community-based strategies (2003), reflects that BF can also be promoted and supported through community-based interventions (CBIs) especially in developing countries because communities and families are easily accessible beneficiaries.¹⁶ Also, the communities and families are resourceful in shaping the intervention and extend its coverage where mother, caregivers and infants live.¹⁷ Promotion and support of CBIs for BF can achieve population-level behaviour change regarding BF.

In spite of numerous global initiatives on BF, the global trend data shows EBF rates have been stagnant over the last two decades.¹⁸ In addition, the IYCF program does not address the key challenges to EBF.¹⁹ A UNICEF report (2016) noted that 43% of newborns are fed prelacteal food (PF) or liquid, due to which there can be delay in EIBF and leading to reduced infant’s demand for breastmilk and difficulties in establishing BF.²⁰ A systematic review highlighted another research gap in developing countries that is factors such as socio-

economic, socio- demographic, socio-cultural and health-related factors affect the decisions of lactating women to initiate and terminate BF.²¹ Also, the nutrition status of lactating women needs to be understood because the vicious cycle of undernutrition in children <6 years of age begins with poor EBF practices.²² Before focusing into the undernutrition status of infants, it is important to understand the nutritional status of lactating women because the health and nutritional status of mothers and children are closely linked.²³ Therefore, the purpose of this study is to provide evidence of the effectiveness of various CBIs that promote and support EBF among lactating women with infant <6 m, living in both LICs and LMICs. This study focuses on those CBIs that improve the rates of EBF at six months in infants in LICs and LMICs.

METHODS

The methods for this review follow the criteria of the PRISMA (Preferred reporting items for systematic reviews and meta-analyses) statement.²⁴

Information source and search strategy

The literature search was carried out in two electronic databases-PubMed and Cochrane library. At the initial stage, no filters were applied. For the PubMed database, multiple terms were developed for population, intervention and outcome by using Boolean operator ‘OR’ followed by combining the three concepts using ‘AND’ operator. Similar search terms were applied to Cochrane library as well. The last search was run on May 1st, 2020. Table 1 presents the search strategy.

Table 1: Search strategy.

Population	Intervention	Outcome
Community or lactating women or exclusive breastfeeding women or postnatal or exclusive breastfeeding or mother of infants under 6 months	Community-based education or community-based training or community-based intervention or peer education or early initiation of breastfeeding	early initiation or exclusive breastfeeding or timely initiation or malnutrition or undernutrition or growth faltering or under weight

Study selection

Screening

A two-stage screening process was followed based on pre-defined inclusion and exclusion criteria: 1. First-stage: based on title and abstract and 2. Second-stage: based on full-text.

Inclusion criteria

Inclusion criteria for the study-1. Population: Lactating women with infant <6 m, pregnant women, men and women within the reproductive age group and husbands or male partners. Studies with pregnant women were selected because the intervention involved them but the outcome of the intervention that is EBF was reported after childbirth and follow up until the infant was 6 months old. 2. Intervention: Studies with CBIs for BF wherein women with infants <6 m and other community members such as husband's, served as a target of change. 3. Outcome: Studies reporting EBF during six months postpartum. 4. Study design: All study designs. 5. Countries: Studies from LICs and LMICs. The categorization of the countries is adapted from the world bank-country classification for the fiscal year 2019-2020.²⁵ 6. Studies irrespective of the mode of childbirth, whether vaginal or cesarean.

Exclusion criteria

Exclusion criteria for the study-1. Studies on facility-based EBF intervention such as hospitals or health centres. 2. Studies in which interventions were given to preterm infants and low birth weight infants. 3. Studies that had EBF intervention for lactating women with comorbidities such as HIV, diabetes, hypertension and others. 4. Studies from high-income and high middle-income countries. 5. Studies that were systematic reviews, meta-analysis, secondary data analysis, case reports and protocols. 6. Studies that had EBF intervention before the year 2000. 7. Studies whose interventions were for infants <6 m but the outcome was not EBF. 8. Studies in which interventions were for infants <6 m but the outcome was seen after six months. 9. Studies that involved children of more than six months of age and 10. Studies that had CBIs but not BF intervention.

Data extraction

The data was extracted in the Microsoft excel sheet. The author screened the results from the included studies and developed codes for extracting the data. Codes are as follow-author and year (name of first author and year of publishing), type of interventions (description), country (LICs or LMICs), study design, population (characteristics), sample size, outcome and study author's interpretation (impact of the intervention).

Analysis

The findings are reported according to PRISMA guidelines including a PRISMA flow diagram. This review examines CBIs having EBF as an outcome, the analyses are presented as a narrative synthesis. Firstly, general characteristics of studies are described including study setting, study design, participants type, sample size, outcome and factors reported. Secondly, measure of effect (odd's ratio/mean difference) and strength of

evidence (p value) wherever reported by authors for significant factors is presented in separate Table.

Ethical approval

The review protocol was submitted to the research ethics committee at Indian institute of public health, Gandhinagar. The committee has exempted the protocol from ethical review.

Software for synthesis

EPPI-reviewer 4 software (version V.4.11.3.0, developed and maintained by EPPI-Centre at the social science research unit of the UCL institute of education, university of London, UK) was used for managing references.²⁶ All stages including importing references, duplicate removing, and screening, was completed in this software.

RESULTS

Study selection

Figure 1 presents the selection process and search results. The search identified 5,530 records. After removing 234 duplicate, 5,296 records were left for initial screening. Initial screening of records was based on title and abstract after which 48 records were eligible for full-text review. Among them, 19 records did not meet the inclusion criteria and 4 records were excluded because their full text was not available. Finally, 25 studies were included in the analysis.

Study characteristics

The studies were geographically diverse representing 7 LICs and 18 LMICs. Out of 25 studies, 12 studies were from Sub-Saharan Africa (orange), 11 studies from South-East Asia (blue), 1 from Middle East (green) and 1 study was a multi-country that involved 20 LMICs across the world (red).^{27,28} Most of the studies were randomized control trials (RCTs) (RCT=6), while others included cluster RCTs=5, pre and post studies (n=5), evaluation studies (n=2), intervention studies (n=2), Longitudinal studies (n=2), combination of in-depth study and FGD (n=1), cross-sectional study (n=1) and descriptive study (n=1).²⁸⁻³⁶ The population characteristics varied for each intervention-interventions for pregnant women but they were followed until infants were 6 m old (n=10), interventions for women with infant <6 m, intervention for both pregnant women and women with infant <6 m (n=3), interventions that provided training to peer counsellors (n=2), interventions for male or fathers (n=3) and there was 1 study which involved both men and women in reproductive age group.^{28,30-32,37,38,40,41} The sample size ranged from 12-26,262.^{39,42} The studies reported five types of outcomes that are, breastfeeding practices (BFP), anthropometry measures (AP), breastfeeding knowledge (BFK), morbidity and mortality. Total number of studies selected from each country are presented in Figure 2.

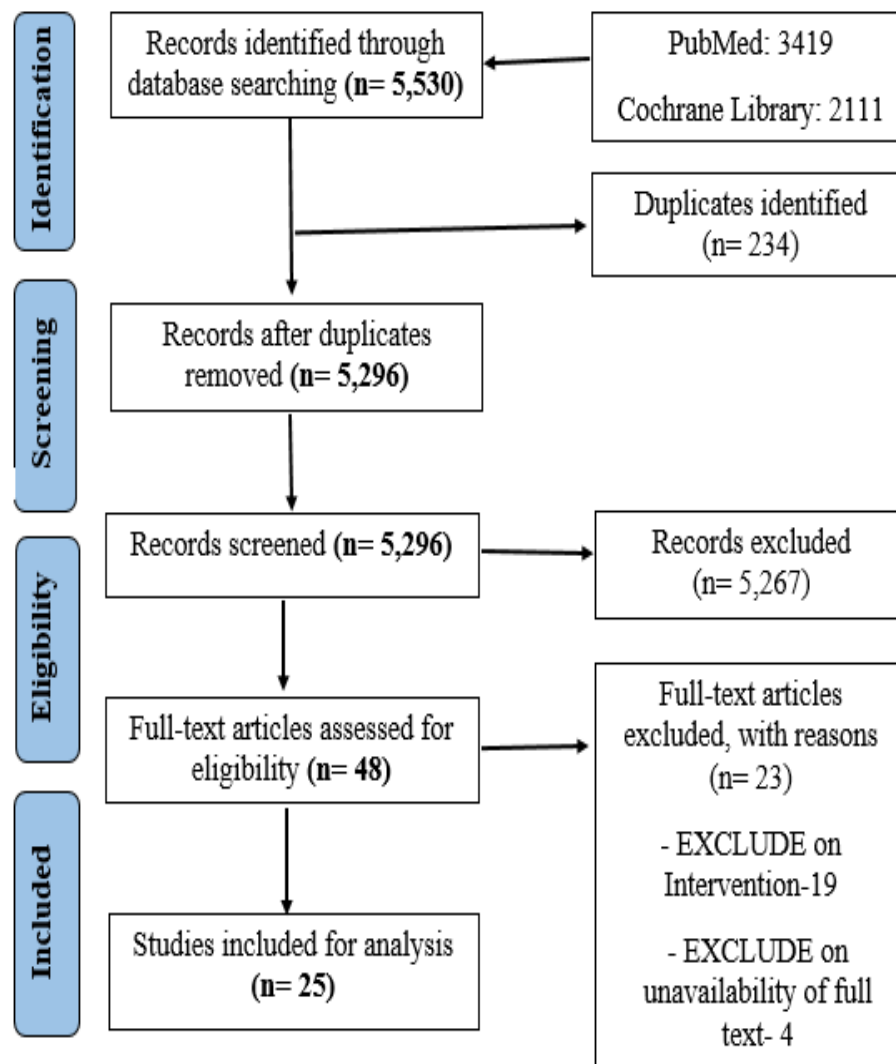


Figure 1: Flow chart of included and excluded studies.

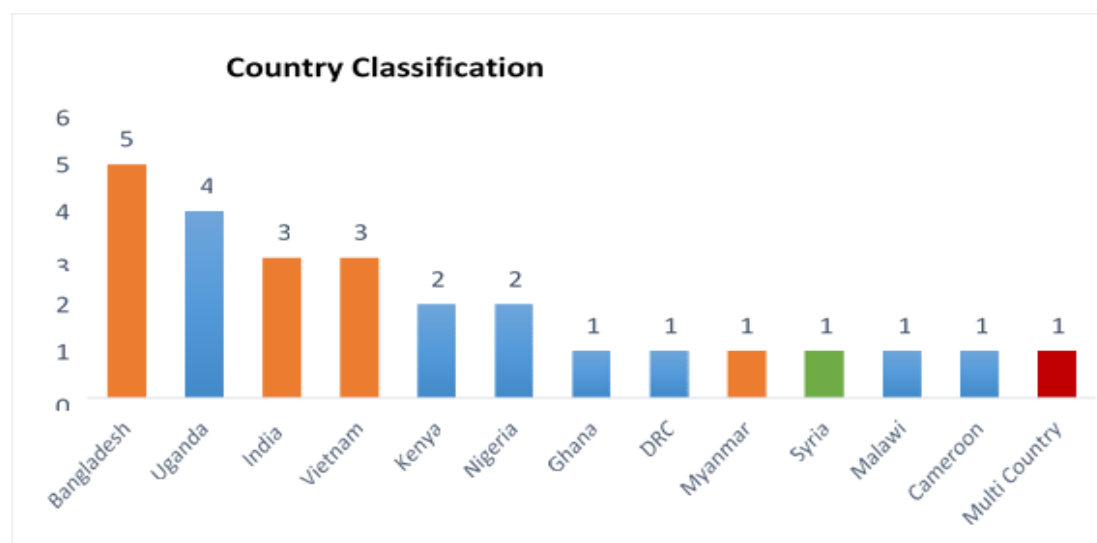


Figure 2: Selected studies from various developing countries.

Results of studies

Of 25 studies, five types of interventions were identified, that are counselling intervention (n=14, 56%), mass media interventions along with other interventions (n=5, 20%), promotion and education intervention (n=3, 12%) training to peer counsellors (n=2, 8%) and mobile phone intervention (n=1, 4%). Total five outcomes are reported, breastfeeding practices (n=18, 72%), knowledge on EBF (n=7, 28%), anthropometry (n=4, 16%), morbidity (n=2, 8%), mortality (n=1, 4%). One of the objectives of this study was to assess the effects of CBIs on EBF, however, other additional outcomes were also analyzed as secondary outcomes (EIBF, PF, morbidity, mortality, AP and BFK).

Effect of counselling intervention

Fourteen studies (56%) reported breastfeeding counselling intervention to have an effect on BFP until 6m. The interventions were initiated during either pre, peri or post-natal period. Thirteen studies had IG and CG except for one study in which the intervention was home-based counselling and group counselling at 300 Anganwadi centres.³¹ Ochola et al study, the intervention was the combination of facility and home-based intensive counselling that means the first counselling session was given when women were admitted to hospital for childbirth and later, they were followed for home-based EBF counselling. The findings of the study showed that HBICG mothers had four times increased EBF practice as compared with CG (ARR=4.01; 95% CI: 2.30, 7.01; p=0.001) and no significant difference between EBF rates in FBSICG and CG was reported.⁴⁹ In Qureshi et al study, the prevalence of EIBF is 53% (IG) vs 49% (CG) (p=0.6), and prevalence of EBF at EL (6 m) is 31% (IG) vs 22% (CG) (p=0.1). Two studies reported the impact of counselling on prelacteal feeding. In both the studies, the percentage of infants who had prelacteal food were very low in IG vs CG. In Ara et al study, 4.2% (IG) vs 12.2% (CG) (p=0.018).⁴⁴ Whereas, in Haider et al study, 31% (IG) vs 89% (CG) (p<0.0001).⁴⁷ In Balaluka et al study conducted in DRC, the counselling was given to lactating women living in endemic malnutrition area, the prevalence of EBF was 57.7% in IG than 2.7% in CG at EL (6 m), p<0.001 (95% CI, 50.9 to 64.5).²⁹ Bashour et al have reported EBF prevalence at 4th month, wherein, 28.5% of mothers in IG1 continuing EBF and they received counselling on 4 different days during postnatal period, as compared to 30% of mothers in IG2 continuing EBF and they received counselling only on 3rd day.²⁷

Four studies had reported the impact of counselling intervention on anthropometry as an outcome. In Balaluka et al study, at EL (6 m) weight of infants (weight in kg mean (SD)) was 6.73 (IG) vs 6.61 (CG) (p=0.404).²⁹ In Chanani et al study, weight for height in EBF infants (n=572) was reported as wasting (<-2SD)=57.1%, normal (-2SD to 2SD)=65.5% and overweight (>2SD)=66.7% (AOR: 1.57, 95% CI: 1.00,

2.45).³¹ In one of the Haider et al studies, the mean body weight is measured for both boys and girls at 6m, 6.8±0.8 kg (boys) vs 6.5±0.6 kg (girls) (WAZ<-2 Z-score).³³ Whereas, in another study, the mean birth weight of infants at BL was 2.96 kg (0.36 SD) vs 7.61 kg (0.89 SD) at EL.³⁴ Two studies reported that the effect of counselling has helped the mothers to have correct knowledge about BF. In Gupta et al study, out of 150 mothers, 57% of mothers in IG had correct knowledge about EIBF whereas, 93 % mothers had corrected knowledge about EBF until 6 m.⁴⁶ While, in Kimani et al study, out of 799 mothers, 61.71% mothers had corrected knowledge of EBF (p=0.861).⁴⁸ Two studies reported morbidity and mortality as an outcome. In Chola et al. study, the counselling intervention had an impact on both IG and CG as 10% of 329 infants (IG) and 9% of 368 infants (CG) reported diarrhea prevalence (prevalence ratio 1.13).⁴⁵ Whereas, Lewycka et al study reported MMR, NMR, and IMR outcomes, but larger effects were seen in NMR (0.85, 0.59-1.22) and MMR (0.48, 0.26-0.91).⁴²

Effect of training to peer counsellors on their EBF knowledge

Two studies by Nankunda et al from Uganda selected peer counsellors with the consent of the community, 15 peer counsellors from 15 communities from Iganga district were trained for 5 days using La Leche league curriculum and 12 peer counsellors from Mbale district were trained for 6 days using WHO breastfeeding counselling course. The intervention was to select and train the counsellors to assist and support pregnant and BF women in their respective communities. The authors reported that their respective training interventions had a positive effect on the participants/ community.^{32,39}

Effect of mass media intervention

Two studies had reported impact of mass media intervention combined with other intervention on EBF. In Bich et al study, for the intervention married couples were selected, out of 361 couples, 34.8% mothers breastfed during 1st m (BL) and by 6th m only 1.9% of mothers had continued with breastfeeding (p<0.001).⁴¹ In Menon et al study, Bangladesh and Vietnam were compared based on intensive and non-intensive groups. Prevalence of EBF in Bangladesh was 87.62% (IG) vs 76.66% (NIG) (p<0.001), whereas, the prevalence of EBF in Vietnam was similar (57.76%) in both IG and NIG (p<0.001).³⁸ In Gupta et al study out of 122 women, 121 (p<0.01) had breastfed their infants until 6 m due to BCC messages through multiple mass media platforms.³⁰ Mass media along with other interventions have influenced the knowledge of participants. In Bich et al study, fathers were the participants in the intervention. Out of 239 fathers, 86.7% gained knowledge on EBF, 75.7% understood the importance of EBF until 6 m and 88.1% gained knowledge on EIBF (p<0.001). Reinsma et al recorded the retention rate of participating women and

their male partners, wherein, 89% of women and 82% of male partners had retained the information on EBF provided through audio programs ($p<0.05$) and these women were also likely to intend EBF until 6 m ($p<0.001$, OR 21.53, CI=8.70-52.99). In Gupta et al study, men and women were selected for intervention and the results were that 42% of women and 40% of men gained knowledge on EBF through one message type whereas, 51% of women and 44% of men gained EBF knowledge through multiple message type ($p<0.5$).³⁰

Effect of mobile phone intervention on EBF

Only one study reported mobile phone intervention, the intervention was, to give one mobile to each women's group so that they can receive SMS text messages to improve EBF practices and reduce the other adverse feeding practices of infants <6 m. After the intervention, all the groups conducted FGDs. The author reported that the intervention had increased the knowledge on EBF as 64% of 195 participants reported that the SMS has worked well for them, 58% had trust upon the SMS due to which they were motivated to try recommended EBF practices, 35% of women were supported by other group members and 44% felt that group discussions on shared SMS had helped them in practicing EBF. Women's group that met weekly had higher odds of EBF at 6 m (OR5.6, 95% CI1.6, 19.7) than women's group that never met.³⁵

Effect of promotion and education intervention

Bhandari et al reported that 50% mothers in IG initiated EIBF within 3 hours than 24% of mothers in CG and by 6th m, 42% mothers continued EBF than 4% CG ($p<0.0001$). The study also reported 31% of infants <6 m had prelacteal food in IG as compared to 75% of infants in CG ($p<0.0001$). Thet et al reported that prevalence of BF within 24 hours in IG was 89.6 vs 93.1 in CG ($p=0.214$), but 46.6% of infants <6 m in IG had EBF until 6 m than 42.5% of infants in CG ($p=0.453$).³⁶ And, in Yourkavitch et al study, men participated in 28 EBF promotion and education across 20 LMICs. The results reported that 21 (75%) projects were statistically significant in increasing EBF practices in all geographic regions.²⁸ Bhandari et al study reported effect on morbidity that is 43% of infants <6 m had ≥ 1 diarrheal episode in 6 m in IG as compared to 52% in CG ($p=0.012$).

DISCUSSION

In this systematic review, 25 studies were analyzed and these studies reported five different interventions, that are: counselling, mass media, promotion and education, training to peer counsellors and mobile phone messages and these interventions had an effect on five different outcomes, that are: breastfeeding practices, anthropometry, knowledge on EBF, morbidity and mortality. The overall effects of these five interventions on outcomes were that, first, there was increase in the percentage on lactating women initiating EIBF and

continuing EBF until 6 m. Second, infants having normal weight for height status (as compared with wasting). Third, decrease in the mortality rate. Fourth, decrease in morbidity, that is, less percentage of infants in intervention group had diarrheal episodes. Lastly, reduce in the percentage of infants being non-exclusively breastfed, that is, less infants in intervention group had pre-lacteal food.

The counselling interventions were in majority, which could imply that counselling is an effective strategy and all the counselling sessions were home-based that means the method of one-to-one interaction with lactating and pregnant women has helped them in improving BF practices especially continuing EBF until 6 m. However, three studies reported that women have not continued EBF until 6 m.^{31,44,49} Studies in Bangladesh and Nigeria focused on working mothers and reported that factories with women workers must employ outreach peer counsellors and must have ways for the sustainability of such programs and developing support systems for nursing mothers who are working.³⁴

Two studies from Vietnam emphasizes that fathers must be mobilized in supporting EBF, this could be done by encouraging and including them in the BF education. Increase in BF knowledge amongst fathers have changed their attitude towards their role in supporting EBF until 6m. In one of the studies, due to BCC intervention, fathers were encouraged to form the 'Father's club'.^{40,41} A study on mobile phone intervention, in which the women's groups received SMS met participant's needs and the messages were often shared outside the groups to those who were not participants of the intervention. The study reported that the group cell phone messaging to promote BF is feasible and acceptable by women.³⁵

Similar studies on impact of CBIs on EBF were conducted whose results support the findings of this review. Shakya et al, analyzed the effectiveness of community-based peer support for mothers to improve their breastfeeding practices. The study involved both HICs and LMICs, the results indicated that for LMICs, the intervention increased EBF at 3 m (RR: 1.90, 95% CI: 1.62-2.22), at 5 m (RR: 9.55, 95% CI: 6.65-13.70) and at 6 m (RR: 3.53, 95% CI: 2.49-5.00). Peer support increased the EIBF within the first hour of life (RR: 1.51, 95% CI: 1.04-2.21) and decreased the risk of prelacteal feeding (RR: 0.38, 95% CI: 0.33-0.45). McFadden et al, analyzed the counselling interventions to enable women to initiate and continue BF. There was a significant effect of counselling interventions on EBF at 4 to 6 weeks (RR 0.79, 95% CI 0.72, 0.87) and 6 m (RR 0.84, 95% CI 0.78, 0.91). Imdad et al, assessed the effect of BF promotion interventions on BF rates. The promotion interventions had a greater impact in developing countries with 1.89- and 6-folds increase in EBF rates at 4-6 weeks and at 6 months, respectively. Haroon et al study reported that BF education increased EBF rates and decreased prelacteal feeding rates at birth, <1 m and 1-5 m.

Table 2: Characteristics of included studies (n=25).

Author, Year	Country	LICs or LMIC	Study design	Intervention	Population	Sample size	Outcomes						
							BFP			Morbidity	Mortality	AP	BKF
							EIBF	EBF	PF				
Counselling intervention (n=14)													
Aidam (2005) (43)	Ghana	LMIC	RCT	Lactation counselling on EBF behaviour	PW (3 rd trimester)	123		✓					
Ara (2018) (44)	Bangladesh	LMIC	C-RCT	Peer counselling by promoting EBF and EIBF	PW (3 rd trimester) and mothers (infants <6 m)	175	✓	✓	✓				
Balaluka (2012) (29)	Democratic Republic of Congo	LIC	ES	Community volunteers promoting EBF from birth in an area of endemic malnutrition.	Mothers (infants <6 m)	386		✓				✓	
Bashour (2008) (27)	Syria	LIC	RCT	Postnatal counselling by home visits through midwives	Mothers (infants <6 m)	876		✓					
Chennai (2018) (31)	Mumbai, India	LMIC	IS	Home based counselling and group counselling	PW (3 rd trimester) and mothers (infants <6 m)	888		✓				✓	
Chola (2015) (45)	Uganda	LIC	RCT	Community based peer counsellors	PW (3 rd trimester) and mothers (infants <6 m)	697		✓		✓			
Gupta (2019) (46)	Rajasthan and Uttar Pradesh, India	LMIC	RCT	BF counselling and support by trained counsellors during ante-natal post-natal period	PW (3 rd trimester)	300		✓	✓				✓
Haider (2000) (47)	Bangladesh	LMIC	RCT	Peer counsellors	PW (3 rd trimester)	573		✓	✓				
Haider (2016) (33)	Bangladesh	LMIC	LS	Community based peer counsellors	PW (3 rd trimester)	994	✓	✓				✓	
Haider (2019) (34)	Bangladesh	LMIC	LS	Home-based peer counsellors	PW (2 nd and 3 rd trimester)	201	✓	✓				✓	
Kimani-Murage (2017) (48)	Nairobi, Kenya	LMIC	C-RCT	Home-based nutritional counselling and support on EBF	PW (2 nd trimester)	900		✓					✓
Lewycka (2013) (42)	Malawi	LIC	C-RCT	Health edu to women groups by peer counselling	PW	26262	✓	✓					
Ochola (2013) (49)	Kenya	LMIC	RCT	facility-based semi-intensive and home-based intensive counselling	PW	265		✓					
Qureshi (2011) (50)	Nigeria	LMIC	P-P	Peer counselling by community volunteers	Mothers (infants <6m)	179	✓	✓					

Continued.

Author, Year	Country	LICs or LMIC	Study design	Intervention	Population	Sample size	Outcomes						
							BFP			Morbidity	Mortality	AP	BFK
							EIBF	EBF	PF				
Training to peer counsellors, (n=2)													
Nankunda (2006) (32)	Uganda	LIC	IS	Training of peer counsellors	Peer counsellors	15							✓
Nankunda (2010) (39)	Uganda	LIC	P-P	Training of peer counsellors	Peer counsellors	12							✓
Mass media interventions along with other interventions, (n= 5)													
Bich (2017) (40)	Vietnam	LMIC	P-P	Mass media communication, Group counselling, Individual counselling, Game show-style community events	Married couples (7 and 30 weeks pregnant)	492							✓
Bich (2019) (41)	Vietnam	LMIC	P-P	Mass media communication, Group health education and counselling, Individual counselling, social public activities	Married couples (12 to 27 weeks pregnant)	757	✓	✓					
Reinsma (2016) (37)	Cameroon, Central Africa	LMIC	P-P	Entertainment Education through television, movies, and radio programs	PW, mothers (infants<6 m) and their male partner	226	✓						
Gupta (2004) (30)	Uganda	LIC	ES	Mass media-communication programme (radio, television or videos, posters and print media)	Men and women of reproductive age group	2823	✓						
Menon (2016) (38)	Bangladesh and Vietnam	LMIC	C-RCT	Intensive interpersonal counselling, Mass media, community mobilization	PW and mothers (infants <6 m)	Bangladesh 998, Vietnam 1002	✓	✓					
Mobile phone interventions (n=1)													
Flax (2017) (35)	Nigeria	LMIC	IDI, FGD	Group cell phone msg.	Mothers (infants <6m)	195							✓
Community based promotion and education intervention, (n=3)													
Bhandari (2003) (51)	Haryana, India	LMIC	C-RCT	Educational intervention to promote EBF	Mothers (infants <6 m)	1775	✓	✓	✓	✓			
Thet (2018) (36)	Myanmar	LMIC	CSS	Community-based BF promotion programme	Mothers (infants <6 m)	610	✓	✓					
Yourkavitch (2017) (28)	LMICs in sub-Saharan Africa, Asia and Latin America	LMIC	DR	EBF promotion and support intervention	Men	Men selected in 28 projects (sample size in not available)		✓					

Limitations and strengths of the study

The finding of the study must be interpreted in line with the following limitations. First, initially, 29 studies were selected for full-text screening, but due to unavailability of four studies, only 25 studies were included in this review. Second, double blinded process was not followed for the screening of article based on title and abstract and even for screening full-text articles. Third, due to time limit, other databases and grey literature were not searched. Fourth, studies in which interventions were given only to preterm infants and LBW infants were excluded but only one study was included with LBW infants because the comparator were NBW infants. Fifth, studies with CBIs on EBF for lactating women with comorbidities such as HIV, diabetes, hypertension and other similar conditions were not analyzed.

Despite these limitations, this study attempts to report multiple effective CBIs in LICs and LMICs. The included studies are heterogeneous as there is a difference in study populations, type of interventions, training methods of peer counsellors and outcome measurement methods. The interventions have not only affected the EBF but have also affected other outcomes which could be helpful for future studies who are trying to focus on CBIs for lactating women. The results of this study could be generalized to LICs and LMICs and can be helpful for policymakers to design low-cost and sustainable strategies to improve BF practices in locations where effective programming is needed.

CONCLUSION

This review identified five different types CBIs that improved EBF practices such as counselling, mass media, promotion and education, training to peer counsellors and mobile phone messages. Counselling have been a community-based intervention that was most effective.

ACKNOWLEDGEMENTS

Authors would like to thank the Eppi reviewer team for their unconditional support.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Misra H, Shivani C, Sirwani B, Rana R. Effects of community-based interventions on exclusive breastfeeding among lactating women: a systematic review. *Int J Community Med Public Health* 2021;8:4550-60.