Review

Exclusive Breastfeeding: A Review of Barriers and Enhancers to Practice in Africa and Asia

Freda D. Intiful[1], Edem M. A. Tette[2], Ruth Pobee[3], Juliana Y. Enos[4*]

[1] *Department of Dietetics, College of Health Sciences, University of Ghana, Legon*
[2] *Department of Community Health, College of Health Sciences, University of Ghana, Legon.*
[3] *Emergency Medicine Department, University of Illinois, Chicago, USA.*
[4] *Noguchi Memorial Institute for Medical Research, College of Health Sciences, University of Ghana, Legon.*

ABSTRACT ***Background****:* Although the benefits of exclusive breastfeeding (EBF) are well established, practice rates have declined in many countries, particularly in Africa and Asia, and have been linked to the huge burden of child mortality in the two regions. The decline has been largely attributed to a variety of factors that prevent mothers from effectively practicing EBF. The objective of this review was to identify the factors that influence EBF in African and Asian countries to identify synergies and document experiences and lessons that can be shared to facilitate widespread practice in developing countries.***Methods:*** A literature search was conducted using PubMed, Cochrane Library, Google Scholar and CINAHL Complete. Studies conducted in Africa and Asia and published between 2005 and 2020 that addressed enhancers and barriers of EBF were included. Data on factors influencing EBF were extracted and discussed under four major headings: maternal factors, cultural beliefs and practices, health system factors and government policies. A total of 34 studies comprising 19 from Africa and 15 from Asia were included in the review.***Results:*** The key barriers to EBF identified were maternal factors such as mothers' perception of insufficient breastmilk production, cultural practices such as giving prelacteal feeds, health system factors such as poor or inadequate education on breastfeeding and inadequate governmental policy support such as paid maternity leave for the recommended 6-month period for EBF. The key enhancers identified were family support, pro-breastfeeding governmental policies and provision of adequate information on breastfeeding to families and communities.***Conclusions and Recommendations:*** Successful EBF practice is hampered by various individual, family and societal barriers. At the core of these barriers is inadequate education on the benefits of EBF and poor policy and legislative environment to support the practice of EBF. Strategies to enhance EBF should include universal education on the benefits of EBF, which should instigate family support for EBF, and promotion of legislation such as paid maternity leave for both parents, which would enable EBF by mothers and support by fathers. Emphatic health education and communication messages to discourage and curtail negative cultural practices that mitigate successful EBF, such as the practice of prelacteal feeds, are needed. Broader consultation and stakeholder engagement to ensure community buy-in to remove barriers to EBF practice in both Africa and Asia is critical to achieving global goals from improving young child nutrition.

Key words: exclusive breast feeding, barriers, enhancers, Africa, Asia

INTRODUCTION

The World Health Organization (WHO) defines exclusive breastfeeding (EBF) as the feeding of an infant with breastmilk only, without any other liquids or solids, not even water. However, drugs and oral rehydration solutions could be given [1]. In addition, the WHO recommends exclusive breastfeeding for the first six months of life and subsequent introduction of complementary foods while breastfeeding continues until the child is at least two years old [2]. The benefits of exclusive breastfeeding for both mothers and infants have been well documented [3-9]. These include a reduction in child morbidity and mortality by protecting children against infections and enhancing immunity.

*To whom correspondence should be addressed: jenos@ug.edu.gh

Studies suggest that optimal breastfeeding in the first year and complementary feeding practices reduce approximately 20% of deaths in children under 5 years of age [10]. In 2018, 52% of under-five mortalities in the world occurred in just five countries: India, Nigeria, Pakistan, Ethiopia and the Democratic Republic of the Congo, all located in Africa and Asia [21]. Nigeria and India alone accounted for almost one-third of these deaths, and approximately 45% of child deaths were linked to malnutrition [21]. In both African and Asian regions, malnutrition is strongly associated with poor feedings and hygienic practices that lead to infections.

Most women in Africa and Asia traditionally undertake some form of breastfeeding. However, the practice of exclusive breastfeeding is relatively low. For example, in Ghana and Nigeria, 98% of children are breastfed during childhood [11, 12]. However, in 2016, only 36% of infants were exclusively breastfed in Sub-Saharan Africa [13]. Although breastfeeding is almost universally acceptable to mothers in Africa, the challenge arises when breastfeeding has to be practiced exclusively for the first six (6) months of infancy. Despite the enormous challenges associated with increasing EBF, some African countries have successfully made progress, while others are still lagging behind.

In general, the developing world recorded marked improvements in EBF rates, particularly in the early 1990s when the baby-friendly initiative was launched [15]. The greatest improvements were seen across West and Central Africa, with remarkable progress in Malawi and Rwanda in East Africa. In Malawi, EBF rates increased from 3% in 1992 to 71% in 2010 [16], and in Rwanda, the increase was from approximately 38% in 2009 to 86.9% by 2015 [17]. On the other hand, some countries reported very low rates of EBF practice in the region, such as 12% in Cote d'Ivoire, 3% in Chad and 6% in Gabon in 2015 [18]. Unfortunately, countries such as Ghana, which had achieved great gains in EBF practice by 2008, recorded declines from 64% in 2008 to 52% in 2014 [19, 20]. Asia also faces a similar challenge of low exclusive breastfeeding rates even though breastfeeding is generally acceptable and universally practiced. Countries such as Cambodia and Sri Lanka in South East Asia made remarkable progress in increasing their exclusive breastfeeding rates [15]. Between 1995 and 2007, Sri Lanka increased its EBF rate from 17% to 76%. Similarly, within a period of 10 years, Cambodia increased its EBF rates from 11% in 2000 to 74% in 2010 [15]. Hong Kong, Thailand, Vietnam and Myanmar also reported EBF rates ranging from 7% to 24% between 1995 and 2010 [14]. These indicators make it imperative to understand the underlying drivers of these trends to inform step-up actions across relevant sectors to improve EBF rates in Africa and Asia.

Currently, most countries in Africa and Asia have exclusive breastfeeding rates lower than 50% [15]. There is therefore an urgent need to understand the drivers of exclusive breastfeeding by mothers to inform workable solutions to scale up the practice of EBF in Africa and Asia. This review examines the factors that mitigate EBF and those that enhance EBF in some African and Asian countries to inform strategies to increase EBF in countries towards the achievement of the Global Nutrition Target of 50% exclusive breastfeeding rates by 2025 and the Sustainable Development Goals.

METHODS

A literature search was conducted using the search engines PubMed, Cochrane Library, Google Scholar and CINAHL Complete. The initial search was conducted in October 2015 and updated in June 2020. The search words used were exclusive breastfeeding, breastfeeding, barriers, facilitators, enhancers, constraints, Africa and Asia. The search was restricted to articles and abstracts that were published in English, peer reviewed, conducted either in Africa or Asia and published between 2005 and 2020. Research articles that specifically looked at conditions that were contraindications to breastfeeding, such as mothers on chemotherapy, alcohol and drug addiction and alcohol, were excluded, with the exception of HIV. A total of 667 articles were obtained from the various databases. Seventy-nine of the abstracts were relevant to the research topic on enhancers and barriers to breastfeeding and conducted in either Africa or Asia. After full review of the articles, 34 were found to have explored the barriers and enhancers of breastfeeding. Nineteen (19) of these studies were conducted in Africa, and 15 were from Asia (Figure 1).

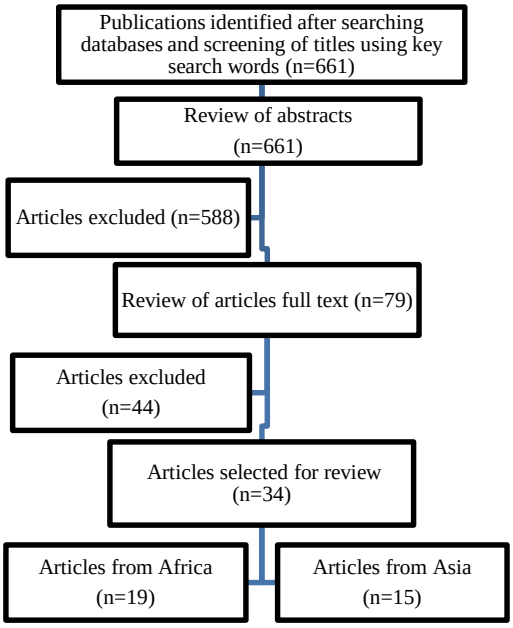

Figure 1. Flowchart of article selection.

RESULTS

A summary of the findings of the 34 studies selected for this review is presented in Tables 1 and 2. Table 1 presents reports on studies conducted in Africa, and Table 2 presents studies conducted in Asia. Based on the data presented in Tables 1 and 2, Table 3 provides a summary of the barriers and enhancers of EBF across Africa and Asia. Papers reviewed from Asia were conducted in Myanmar, Laos Peoples Democratic

Republic (LPDR), Taiwan, Pakistan, Korea, Vietnam, China, Sri Lanka, Indonesia, Malaysia, Hong Kong, Timor Leste, Bangladesh and India. These represent fourteen (14) out of the forty-eighty (48) countries in Asia. The studies included in this review for Africa were from Ghana, Nigeria, Kenya, Ethiopia, Zambia, Cameroon, Zimbabwe, South Africa, DR Congo, Malawi, Uganda and Mozambique, which constitute twelve (12) out of fifty (54) countries in the region. Three of the studies included in this review were conducted among HIV-positive mothers.

A total of 15,871 adults were involved in the studies, comprising 14,807 mothers, 284 fathers, 275 grandmothers, 136 health professionals and 84 community members and leaders. One of the studies did not categorically state the total number of persons who participated. Data were gathered using qualitative, quantitative and mixed method approaches. The sampling methods employed were convenient, purposive, random and systematic sampling techniques. One study was a randomized controlled trial. Fifteen of the studies were conducted in urban communities, six in rural communities, ten in both rural and urban communities and two in peri-urban or sub-urban communities.

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DISCUSSION

The barriers and enhancers of EBF identified in the reviewed studies were discussed under four broad domains as follows: maternal factors, cultural beliefs and practices, health system factors and policy environment.

Barriers to Exclusive Breastfeeding

Maternal factors

Most maternal factors identified as barriers to exclusive breastfeeding were similar across the African and Asian regions and countries. These maternal factors include mother's employment status and working outside the home, lack of time for EBF, perception of breastmilk being inadequate for the baby, health status of mother, late decision to breastfeed and anxiety of mother. The employment status of the mother seems to be the utmost barrier to EBF, with similar sentiments expressed among mothers in the studies across both Africa and Asia [24, 30, 36, 37, 43, 44, 54, 55]. Employment outside the home consistently prevents mothers from effectively practicing exclusive breastfeeding even if they had the desire to do so [10, 24, 25, 30, 36, 43, 44, 46, 47, 49, 50, 54]. Considering the level of poverty in both Africa and Asia, it seems plausible that mothers must work to support their families and therefore cannot afford to be at home all the time to breastfeed their babies on demand. In most African and Asian countries, mothers are significant contributors to family income. Therefore, they are unable to practice exclusive breastfeeding for the recommended 6-month period because they have to resume duty after the standard maternity leave period after delivery, which is often less than 6 months. Interestingly, we found that high income was also identified as a barrier to exclusive breastfeeding in Ethiopia [37]. The authors explained that mothers with high income were more likely to be working full-time and tend to be outside the home often. Additionally, these mothers may readily afford infant formula and might not be willing to go through the demands of exclusive breastfeeding when they have to go back to work.

Poor maternal health was identified as a barrier to exclusive breastfeeding in some studies [54]. Mothers who went through caesarean delivery or vaginal delivery with episiotomy were likely to forgo exclusive breastfeeding [37, 48]. The pain mothers go through generally can lead to delay in initiation of breastfeeding and sometimes early introduction of other feeds apart from breast milk. Some mothers expressed fears of possibly dying as a result of breastfeeding when they themselves were not well [29]. Mothers also indicated that health problems affecting the breast, such as cracked nipples, sores and pain in the breast, often posed a challenge to exclusive breastfeeding [54]. It is clear from these studies that mothers' perception of their general wellbeing is fundamental to continuous, successful exclusive breastfeeding.

The perception that milk production was insufficient and that babies were unlikely to be satisfied with breastmilk alone were also identified as major barriers to exclusive breastfeeding [10, 24-25, 27-29, 34-36, 38, 48-50, 56]. These concerns were echoed by most of the participants across the various studies conducted in both Africa and Asia. Mothers perceived their babies to be hungry even after breastfeeding [24]. In Nigeria and Kenya, there were perceptions that babies could be addicted to breastmilk; therefore, they should be introduced to other foods in addition to breastmilk to increase their exposure to different kinds of food and taste [10,24]. In Cameroon, breastmilk was perceived to be an incomplete meal, thus justifying the need to supplement it with other foods [30]. Similarly, Vietnamese mothers would give water because they felt the child was thirsty [48]. They also believed that the mouth of the child should be cleaned with water after breastfeeding to prevent oral thrush.

Table 1: Summary of findings from studies in Africa

Author (Year) [Ref] COUNTRY	Study Design	Population/ Sample Size	Setting	Key Findings on Barriers and Enhancers of Exclusive Breastfeeding
Agunbiade et al., (2012) [24] NIGERIA	Mixed method	N=210 Mothers (n=200) Nurses (n=10)	Urban	*Barriers* • Perception of breastmilk insufficient for baby • Fear of baby becoming addicted to breast milk • Pressure from in-laws to stop EBF • Mother's employment • Inadequate support from spouse • Conflicting information from opinion leaders such as grandmothers, mothers-in-law • Lack of support to initiate EBF after birth due to busy schedules of nurses, which prevents them from adequately assisting mothers who have challenges initiating EBF
Alutu et al., (2006) [25] NIGERIA	Mixed method	N= 536 Mothers (n=536)	Urban/Rural	Barriers • Perception of breastmilk insufficiency • Mother's employment • Myths and beliefs that breastfeeding cannot be practiced for a long time since milk turns into blood
Arts et al., (2011) [26] MOZAMBIQUE	Qualitative/ focus group discussions	N=342 Mothers (n=95), Fathers (n=85), Grandmothers (n=82), Nurses (n=80)	Urban	*Barriers* • Negative family influence (fathers, grandmothers) • Belief that water should be given to baby • Lack of support from family and healthcare providers to initiate and continue EBF when there are challenges
Cherop et al., (2009) [10] KENYA	Cross sectional	N=384 Mother- infant pair (n=384)	Urban	*Barriers* • Perception of inadequate breastmilk production and breastmilk insufficiency • Perception that babies need to be introduced to the taste of other foods • Mother's employment • Lack of time for mothers working outside the home
Maduforo et al., (2013) [31] NIGERIA	Mixed method	N= 128 Mothers	Urban	*Barriers* • Perception of breastmilk insufficiency • Lack of time due to mother's employment • Lack of knowledge about EBF • Lack of support from husband and family members
* Maman et al., (2012) [32] DR CONGO	Qualitative /In depth interview	N=40 Pregnant and post-partum women	Urban	*Barriers* • Financial constraints • Breast health issues and concerns • Misinformation about HIV transmission • Prior feeding experiences *Enhancers* • Knowledge about HIV transmission through breastfeeding • Information from clinical staff • Support from clinical staff • Other support networks
Muchacha et al., (2015) [33] ZIMBABWE	Mixed method	N= 24 Mothers (n=20) Health workers (n=4)	Rural	Barriers • Belief that boys eat more than girls and so will require more milk • Cultural practices such as nhova where traditional medicine is given to the baby • Grandmothers and mothers-in-law opposing EBF • Gender inequalities - influence of fathers. • Low income of mothers which impacts on mother's nutrition Enhancers • High level of formal education of mother • High income
*Nor et al., (2012) [34] SOUTH AFRICA	Qualitative	N-17 Mothers (n=17)	Rural /Urban	Barriers • Erroneous understanding of EBF • Perception of milk insufficiency • Perception that babies need water and other Zulu traditional medicines Enhancers • Perception of a breastfed baby as "healthy baby" • High cost of formula milk • Perception of formula milk fed to HIV babies

Table 1: continued

Author (Year) [Ref] COUNTRY	Study Design	Population/ Sample Size	Setting	Key Findings on Barriers and Enhancers of Exclusive Breastfeeding
* Østergaard et al., (2014) [35] MALAWI	Qualitative In-depth Interviews and observations	N=21 Mothers	Urban	Barriers • Perceived insufficiency of milk • Poor counselling by HIV counsellors right after testing mothers of their HIV status • Stigma of breastfeeding • Lack of control over breastfeeding because mothers/ grandmothers dictate what should happen Enhancers • Stable relationship with a man/husband rather than living alone • Older age of mothers and therefore more experienced • Mothers not living in the same house with grandmothers/mothers-in-law
Otoo et al., (2009) [36] GHANA	Qualitative/ focus group discussions	N=35 Mothers	Peri-urban	Barriers • Perception of milk insufficiency • Child refusing to breastfeed • Breast and nipple problems in mothers • Mother's employment • Lack of support from spouse. Fathers prefer to provide money for formula than to feed mother. • Cultural practices such as not wanting to expose breast in public • Influence from other family members such as mothers and grandmothers who prefer mixed feeding Enhancers • Positive EBFF experiences such as reduced morbidity with older children • EBF is inexpensive and convenient
Shifraw et al., (2015) [37] ETHIOPIA	Cross sectional	N=648 Mothers	Urban	Barriers • Mothers with high income can afford formula • Mother's employment • Cesarean section (poor health status of mother) Enhancers • Low income (complementary /alternate feeding not affordable. • Vaginal delivery (good health status of mother)
Webb-Girard et al., (2012) [38] KENYA	Qualitative/ focus group discussions/ interviews	N=148 Mothers	Urban	Barriers • Perceived milk insufficiency • Food insecurity informs maternal confidence in ability to EBF
Goosen et al., (2016) [39] SOUTH AFRICA	Qualitative, focus group discussions/ purposive	N=91	Urban	Barriers • Perception of milk insufficiency • Perception of infants needing water • Poor education on breastfeeding at antenatal and postnatal clinics • Lack of support from the community • Local beliefs: a stressed mother could pass on the stress to the baby being breastfed.
Rujumba et al., (2020) [40] UGANDA	Qualitative, informant interview	N= 15	Urban/rural	Barriers • Perceived breastmilk insufficiency • Heavy work load • inadequate education on EBF at health facilities Enhancers • Supportive health team with requisite knowledge in breastfeeding • Community breastfeeding support groups • Media • Professional Associations
Mohamed et al., (2020) [41] KENYA	Qualitative, Focus group discussions/ key informant interviews	N=72	Urban/rural	Barriers • Perceived breastmilk insufficiency • Belief that baby needs water • Negative grandparents/mother-in-law's influence • Negative maternal attitude towards EBFF • Home delivery • Caesarean section delivery Enhancers • High knowledge on EBFF • Positive maternal attitude towards EBFF. • Attendance to maternal and child health clinics • Supportive husband • Islamic teaching that breastfeeding is a child's right • Self-confidence of mothers to breastfeed

Table 2. Summary of findings from studies in Asia

Author (Year) [Ref] COUNTRY	Study Design	Population/ Sample Size	Key Findings on Barriers and Enhancers of Exclusive Breastfeeding
Khanal et al., (2014) [46] TIMOR LESTE **Setting** Rural/urban	Cross sectional	N=975 Mother infant pair	Barriers • Mother earning income • Perception that new born baby is below average size, Residency in the capital city Enhancers • Mothers with ability to decide on health-related matters
Lee, et al., (2013)[47] LAO PDR **Setting** Urban	Qualitative/ focus group discussions/interviews Purposive sampling	N=47 Mothers, Health workers Community elders	Barriers • Mother's employment • Conflicting information from different sources • Health status of mother i.e. HIV infection • Lack of information on exclusive breastfeeding
Nguyen et al., (2013) [48] VIETNAM **Setting** Rural/urban	Qualitative/interviews	N=6068 Mother/child dyad	Barriers • Perception that baby will be thirsty • Perception that breastmilk is not nutritious enough for baby • Infants mouth needing to be cleaned with water to prevent oral thrush • Caesarean delivery • Vaginal delivery with episiotomy
Perera et al., (2012) [49] SRI LANKA **Setting** -	Prospective observational	N=500 Infant mother pair	Barriers • Mother's employment • Growth faltering of baby between 2-4 months • Maternal anxiety • Advanced maternal age >30 years
Premani et al., (2011) [50] PAKISTAN **Setting** Urban	Qualitative/ In-depth interview	N=6 Mothers	Barriers • Cultural norms • Lack of privacy to breastfeed at home due to joint family system • Concerns about breastfeeding in public • Lack of time Enhancers • Maternal knowledge • Self-motivation • Early decision to breast feed • Support from family/husband • Support from health care professionals
Susiloretni et al., (2015) [51] INDONESIA **Setting** Rural	Quasi experimental	N=599 Mothers (n=163) Fathers (n=163) Grandmothers (n=163) Community leaders (n=82) Midwives (n=28)	Barriers • Breast engorgement • Lack of support from grandmothers • Provision of sample of formula sample at discharge from hospital Enhancers • Maternal knowledge
Tan (2011) [52] MALAYSIA PENINSULAR **Setting** Rural/urban	Cross sectional	N=682 Mothers	Barriers • Mothers' employment • Unsupportive husbands Enhancers • Living in a rural area • Non-working mothers Non-smoking mothers • Mothers with more than one child • Supportive husbands
Tengku et al., (2012) [53] MALAYSIA **Setting** Rural/urban	Qualitative/ In depth interview	N=30 Mothers	Barriers • Perceived milk insufficiency • Perceived low nutritional quality of breast milk • Mother's employment
Thet et al., (2016) [54] MYANMAR **Setting** Rural/urban	Qualitative/ In depth interview	N=44 Mothers (n=24) Fathers (n=10) Grandmothers (n=10)	Barriers • Perceived insufficient production of breast milk • Mothers working outside the home • Cracked nipples • Poor maternal health • Belief that breastfeeding makes mother look unattractive • Concerns about breastfeeding in public Enhancers • Support from fathers and grandmothers
Tsai et al., (2015) [55] TAIWAN **Setting** Urban/sub-urban	Qualitative	N=300 Mothers	Barriers • Older age of mother • Living in a metropolis • Mother's employment Enhancers • High level of health literacy • Intention to breastfeed for a long time • Greater self-efficacy • Rooming-in • Early initiation of breastfeeding
Khatun et al., (2018) [56] BANGLADESH **Setting** Urban	Mixed method	N= 342 Mothers 18 in-depth interviews	Barriers • Milk insufficiency • Maternal employment • Caesarean delivery • Lack of support from grandmother • No crèche at work place • Doctor prescribed formula Enhancers • Education on breastfeeding • Family support • Advice from doctors • Free cost of breastmilk

*studies with HIV-positive respondents

Table 3: Summary of barriers and enhancers of exclusive breastfeeding in Asia and Africa

	AFRICA	ASIA
	Maternal Factors	
Enhancers	• Formal education • Older age • Low income • Vaginal delivery • Home delivery • Attendance to maternal and child health clinics • Self-confidence /motivation	• Higher formal education • Unemployed mother • Mother with more than one child / previous experience • Planning and commitment to breastfeed • Rooming in • Married woman/ living with spouse • Self-motivation • Living in rural area • Non-smoking mother
Barriers	• Mother's employment • Poor health status of mother • Perception of insufficient breastmilk production • Inadequate time • High income to purchase formula • Caesarean delivery • Reduced physical attraction	• Mother's employment • Health status of mother • Perception of insufficient breastmilk • Perceived poor quality of breastmilk • Lack of time • Caesarean delivery • Physical attraction • Older age of mother • Late decision to breastfeed • Living in an urban area • Maternal anxiety
	Cultural Beliefs and Practices	
Enhancers	• Family support • Leaving away from grandmothers/mother's-in-law	• Family support from husbands, grandmothers, mother's-in-law • Presence of domestic helper
Barriers	• Lack of family support (Influence of grandmothers/mother's-in-law) • Myths and beliefs about breastmilk and practice of breastfeeding • Effect of gender inequality	• Lack of family support (husbands, grandmothers/mother's-in-laws) • Lack of privacy to breastfeed due to extended family system • Cultural norms
	Health System Factors	
Enhancers	• EBF Education from health workers	• Education on breastfeeding • Support from healthcare professionals
Barriers	• Lack of education on EBF • Lack of education on breastmilk composition	• Lack and inadequate education • Conflicting EBF educational information
	Policy Environment	
Enhancers	• Cost of infant formula	• Workplace provision to breastfeed • Storage facilities at the work place
Barriers		• Maternal leave less than 6 months • Increased workload after maternity

In Africa (Ghana) and Asia (Myanmar), a mother's view of her physical looks and attractiveness and her perception of how others view her was also identified as a significant issue that posed a challenge to exclusive breastfeeding [36, 54]. Some of the mothers felt that continuous breastfeeding would make them look less attractive. Others felt uncomfortable breastfeeding in public places [36, 54]. These perceptions are influenced by women's assessment of how society perceives mothers breastfeeding in public and likely to be a reflection of changes in societal values over time. New adjustments are needed to support women when they have to breastfeed in public places.

Cultural beliefs and practices

Culture or tradition tends to govern the way people live. Breastfeeding itself is an art that thrives on a complex interaction between biology and culture [57]. Several of the difficulties that arise with exclusive breastfeeding tend to be entrenched in cultural beliefs, which usually conflict with the science of breastfeeding [57]. This assertion was observed in some of the studies reviewed, ranging from beliefs regarding the breastmilk itself to specific roles that needed to be played by individuals in the family or community. These beliefs and behaviours were so culturally entrenched that mothers had difficulty overlooking them. For example, in some societies, colostrum was considered "bad milk" or "does not contain any nutrients" and therefore should not be fed to babies [27, 50]. In some cultures, babies were expected to be fed certain "foods" that are believed to be beneficial. In Zimbabwe, for example, it is believed that feeding babies cooking oils and water prevents or treats colic and sunken fontanel [24]. There is also a belief that newborn babies need to be fed with solids within a week after birth to signify genetic connection to their ancestors [30].

In some cultures, as obtains in Kenya, South Africa and Ghana, babies are fed with certain 'concoctions' to protect the baby because of religious beliefs, particularly the belief that others might cast evil spells on the baby [33, 53, 55]. In one study in Cameroon, a substance called Viindi, which is a solution prepared from washing

off passages of the Koran that have been written with charcoal on a wooden slate, is given to the infant for protection [27]. Similar practices were reported in Zimbabwe, where the baby is given concoctions usually composed of tree barks, roots, juices, herbs, cooking oil and wild fruits to treat a condition known as nhova (which is the administration of traditional medicines to babies to prevent sunken fontanel and death) [29]. In Cameroon, a breastfeeding mother does not engage in sexual intercourse. This is because it is believed that sexual intercourse "spoils the milk" and has the tendency to "spoil the child" [27]. This belief implies that a breastfeeding mother cannot engage in sexual intercourse. She would have to avoid sexual intercourse to successfully breastfeed her baby. This belief therefore discourages breastfeeding of the baby for a significant period.

Culturally, the contribution of fathers, grandmothers, in-laws and sometimes elderly persons society in decision-making at the household level cannot be understated. The influence of extended family and opinion leaders in African and Asian societies is still upheld to a very large extent. In Cameroon, mothers indicated that to "avoid confrontation" with husbands or other relatives whose opinion cannot be ignored, they succumbed to the pressures of introducing other feeds [27]. Similar concerns were expressed by mothers in Ghana, Nigeria, Lao PDR, Vietnam and Mozambique, where grandmothers were found to be very influential in offering advice on breastfeeding [20, 33, 42, 49, 52]. This implies that a decision to exclusively breastfeed would have to be endorsed by all revered family and community members in order not to incur their wrath. This happens especially in societies where opinions of the elderly are very highly regarded. In conclusion, therefore, the whole community needs to be well informed and educated to ensure that women receive the needed support to breastfeed successfully.

Health system factors

Breastfeeding is an art that is surrounded by many myths and misconceptions. Several of the challenges that arise during breastfeeding occur when information given about breastfeeding conflicts with the individual's own cultural beliefs [57]. Inadequate knowledge on the subject of exclusive breastfeeding was identified as a key barrier to exclusive breastfeeding across the various studies. Studies in Ethiopia, Zambia, Nigeria, the Democratic Republic of Congo, South Africa and India clearly identified a lack of knowledge on exclusive breastfeeding as well as a general lack of education on appropriate infant feeding practices as barriers to EBF [25-26, 28-29, 31, 36]. When people are well educated on the composition of breast milk and how it helps to protect the child against infectious and other diseases, then it is likely to be well utilized.

The perception expressed by some mothers that breast milk is insufficient can be successfully addressed when well-structured educational messages and strategies tailored to meet the needs of specific populations are provided, preferably through the health system and during antenatal care, which is well patronized by mothers in Asia and Africa for at least one visit.

Health education programmes should aim at providing consistent messages and avoid ambiguity, which tends to confuse mothers and significant others who support breastfeeding. These key messages were among the sentiments expressed by mothers in some studies [24, 49]. The mothers expressed concern about conflicting messages they receive from the hospitals and significant members of the community whose opinions matter in breastfeeding a baby. These include basic issues such as the definition of exclusive breastfeeding and the addition of water to breastmilk [34, 49]. Inadequate education on exclusive breastfeeding was not only limited to mothers but also to healthcare professionals. For example, healthcare workers were quick to advise mothers to switch to formula when mothers reported challenges with exclusive breastfeeding [52]. Other mothers lamented about the lack of support from healthcare professionals when they needed clarification due to their busy work schedules [24, 26].

Policy-related factors

The absence of strong policies and political will to support breastfeeding can be a major barrier to EBF. A major barrier to EBF is the duration of paid maternity leave. In all countries studied, maternity leave is often less than 6 months. This makes it difficult to continue to breastfeed exclusively when mothers have to return to work. Mothers bemoaned the absence of facilities in the workplace that could enable exclusive breastfeeding and make breastfeeding more comfortable for working mothers [43]. Mothers also expressed their reservations about breastfeeding in public due to lack of privacy [50, 54]. Some policies could be enacted to ensure that mothers are provided with private and convenient places that could support breastfeeding in public.

Enhancers of Exclusive Breastfeeding.

Maternal factors

Enhancers to EBF were varied and included the health status of the mother following vaginal delivery as well as other health and breast concerns, motivation to breastfeed, higher formal education, being married and older age of mother with previous breastfeeding experience. In Kenya and Ethiopia in Africa and Bangladesh and Lao PDR in Asia, mothers who delivered vaginally and in good health were more likely to exclusively breastfeed compared to those who went through caesarean sections [37, 47, 39, 56]. Additionally, those with intent, preparedness and commitment to breastfeed exclusively for a long time had an enhanced ability to breastfeed [55]. Younger mothers and those with low income who could not afford milk formula were also more likely to exclusively breastfeed [37, 55]. Similarly, mothers with high formal education were more likely to EBF compared to those with lower education. This could be attributed to the benefits of higher education and a better understanding of the benefits of exclusive breasfeeding [32]. In Zimbabwe, older women were more likely to exclusively breastfeed [32], probably due to their previous experiences with breastfeeding [33].

Maternal knowledge on breastfeeding as well as formal education also contributed to enhancing exclusive breastfeeding in Zimbabwe, Cameroon and Kenya [27, 30, 39]. Similarly, in Asian countries such as Bangladesh, Indonesia, Pakistan and Hong Kong, these observations were found to be true [43, 45, 38, 56]. In Hong Kong, being married enhanced exclusive

breastfeeding [45], while higher income in South Africa was found to be an enhancer to exclusive breastfeeding. However, the opposite was true in Ethiopia, where mothers with higher income were less likely to breastfeed [34, 37]. Older maternal age proved to be an enhancer of exclusive breastfeeding among women in Malawi. In contrast, young maternal age enhanced exclusive breastfeeding in Taiwanese women in Asia [35, 55]

Cultural beliefs and practices

The principal cultural factor that enhanced EBF across both regions was support from family members. The traditional roles of every member of the family are well defined. It is not the norm for mothers across Africa and Asia to receive support from their spouses, though studies from this review show that support from fathers and sometimes from other members of the family, such as grandmothers, provided an impetus for EBF [29, 32, 47]. In some cultures, babies are separated from mothers to allow mothers to rest. However, when babies and mothers are not separated but rather allowed to be in the same room (i.e. rooming-in), mothers' chances of breastfeeding were enhanced [38, 48]. Rooming-in also contributes to enhancing the early initiation of breastfeeding and tends to increase the chances of exclusively breastfeeding [48].

Health System Factors

Some mothers alluded to the benefits of receiving breastfeeding information from healthcare professionals and reported that it enhanced their ability to exclusively breastfeed [27, 44]. For example, among HIV-infected mothers, knowledge about HIV transmission through breastfeeding enhances their chances of breastfeeding [32]. This was possible because they could appreciate the circumstances under which transmission was most likely to occur and make an informed decision on the risks and benefits of breastfeeding under the circumstance. A high level of literacy appeared to enhance breastfeeding because literate mothers were found to be more compliant with exclusive breastfeeding guidelines when compared to illiterate mothers [30]. Lessons learned from success stories from Sri-Lanka, Malawi and Cambodia demonstrated the impact of public education on breastfeeding as an enhancer to exclusive breastfeeding [15]. The use of mass media and targeted home visits also greatly improved exclusive breastfeeding rates.

Enabling policy environment

The baby-friendly initiative in countries promotes EBF. However, some health facilities do not adhere to this initiative because there is no strong political will to enforce the recommendations. In Indonesia, for instance, mothers were provided with formula samples at discharge, which prevented them from exclusively breastfeeding [20]. Policies that provide an enabling environment in healthcare facilities and workplaces to support breastfeeding also enhance the ability of mothers to breastfeed exclusively [43]. Places of work that provided spaces for mothers to conveniently breastfeed during working hours were useful in motivating mothers to continue to breastfeed [43]. Countries that have made gains in EBF have done so through collaborative efforts from all stakeholders, including government, healthcare professionals, commercial entities, mothers and the community [15]. According to the WHO, countries that have programmes and policies in line with the recommendations of the WHO/UNICEF Global strategy for infant and young child feeding have made the most gains in enhancing EBF [16]. Therefore, the ultimate facilitator to EBF lies with governments taking the lead in creating the enabling environment by enacting policies and legislations such as longer paid maternity leaves for mothers and making it compulsory that workplaces create facilities that are conducive to breastfeeding.

Based on the findings from this review, recommendations to improve breastfeeding include i) addressing maternal perceptions of exclusive breastfeeding through adequate education; ii) ensuring that key decision makers and opinion leaders in the family and community, such as fathers, grandmothers and in-laws, are educated and encouraged to support exclusive breastfeeding; iii) enacting policies to protect working mothers and ensure that they have adequate time to dedicate to breastfeeding should be considered; iv) those in the formal sector could be provided with adequate duration of paid leave and those in the informal and low income settings could be supported with a stipend to ensure they abstain from work to enable them breastfeed adequately. Additionally, health professionals should regularly be updated on their role to educate mothers and the community and the need to provide support for mothers during difficult and confusing times. Some of these can be achieved by using breastfeeding support groups.

LIMITATIONS

This review has some limitations. There could be some level of bias since not all the studies included in this review primarily sought to investigate the barriers and enhancers of exclusive breastfeeding. Nonetheless, the relevant information was extracted from their findings, regardless of their study objectives. Second, most of the studies reviewed used qualitative data collection methods rather than quantitative approaches. Qualitative data collection approaches tend to be more subjective compared to quantitative approaches. However, the qualitative approach is very useful in providing depth and bringing to the fore the real reasons why people do what they do to inform the development of effective interventions.

CONCLUSIONS AND RECOMMENDATIONS

The key barriers to exclusive breastfeeding identified in this review were perceptions about the adequacy of breastmilk produced by mothers to meet the nutritional needs of their babies, poor maternal health, especially following caesarian delivery, lack of adequate information on EBF for mothers and family members, negative cultural practices such as proving teas and concoction for babies for medicinal and spiritual or protective purposes, issues regarding maternal employment and government policies such as brief maternity leave and lack of enabling environment that were not in consonance with the practice of exclusive breastfeeding. We found that the enhancers of breastfeeding were related to adequate information, support from family and some government policies that sought to improve breastfeeding. The involvement of all stakeholders in promoting the practice of exclusive

breastfeeding is paramount to the success of achieving global goals regarding the health, nutrition and survival of children. All stakeholders, especially governments, have to be committed to achieving global goals through constant communication and education strategies aimed at removing the specific barriers. In addition, governments must provide leadership and the resources needed to educate and empower all stakeholders to play their respective roles towards the achievement of success. Further studies could investigate EBF promotive intervention strategies that work. These strategies should not only emphasize the benefits of exclusive breastfeeding but also address the barriers that mitigate successful breastfeeding.

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