Behavioural Diagnostic Report on Practices of Early Initiation and Exclusive Breastfeeding in districts of Uttar Pradesh

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EXECUTIVE SUMMARY

The purpose of this report is to share findings from primary & secondary research conducted by the Centre for Social & Behaviour Change, Ashoka University, in rural Uttar Pradesh, to understand the underlying behavioural barriers to the practices of Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding (EBF). Findings from the study, would help to inform design of solutions that could support improved adherence to the practices of EIBF & EBF.

The practice of breastfeeding is a cost-effective and crucial protective measure against the leading causes of morbidity and mortality for children under the age of 5 years. Multiple government initiatives over the years have successfully supported improving rates of breastfeeding. But recent NFHS-V data shows a stagnation (and in some cases a decline) in breastfeeding indicators. In such a case, having a targeted behavioural approach can provide a powerful pathway. A behavioural approach first identifies the underlying decision-making norms, biases & cultural, emotional influences and then helps us specifically design solutions, by applying principle of behavioural science, to help families navigate these barriers to sustain these practices.

Summary of our core findings show:

To initiate greater compliance to Early Initiation to Breastfeeding (EIBF) we need to focus on ways to make EIBF a supported, normative & planned behaviour. The vulnerable nature of the circumstance of EIBF (point of delivery), indicates the need for the woman to be supported which currently is not consistently being provided due to the low staff-nurse to patient ratio in government institutions.

- In this case leveraging the mother/mother-in-law (MIL) companion to provide the needed support to the recent mother could be an effective strategy, especially given their availability, influence and experience with breastfeeding.
- Though, for mother/MIL companions to be most effective, normative counselling that leverages their cultural role as “grandmothers” and the emotional quotient of the moment. This could be done by providing families with new norms or “rituals” which keep EIBF at centrestage without disrupting the larger cultural ecosystem around childbirth.
- Along with this, we also recommend early planning elements to help minimize the risks of return to status-quo and emotional decision-making.

To initiate greater compliance to Exclusive Breastfeeding (EBF) practices, there is a need to focus on ways to change household norms around child-feeding and actively recognize & address the practice of micro-dosing and related triggers. Practice of EBF is dependent on the household norms set by the older women and only through including them can sustainable change be achieved.

- Though households recognize & accept the importance of breastfeeding, they struggle with understanding the concept of “exclusivity” related to breastfeeding. By microdosing supplements (where the households maintain the main meal of a child as breastmilk, but intermittently provide micro-doses of supplements) they rationalize the provision of supplement, with the belief that the intermittent nature & micro quantity of the supplement could do no harm. Furthermore, since the supplements are also foods that are consumed by older children and adults, the mental models from traditional and cultural knowledge associated with these foods are carried over to an infant’s context as well.
- To advocate any change in breastfeeding & child feeding practices, solely targeting the mother alone would be insufficient; instead addressing household norms could be a more impactful strategy with potential for long-term attitudinal and behaviour change. Thus, actively engaging MILs in discussion of breastfeeding, sustained through the 6-months of the child’s life, can be a highly effective pathway to change household norms.

This report provides further details on the context, methods & details around these findings. Section 1 of the report provides an overview of the policy context around the practices of EIBF & EBF and why a behavioural design approach is needed. Section 2 provides details of the secondary & primary research activities; this includes a summary of the literature review, details of the research methodology and findings (journey maps, case studies & barrier listing) for the two rounds of primary qualitative research. Section 3 summarises the key insights and takeaways from the diagnostic research and outlines a way forward in developing solutions for improving adherence to the practices of EIBF & EBF.

LIST OF ACRONYMS

ANC	Antenatal care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWC	Anganwadi Centre
AWW	Anganwadi Worker
CF	Complementary feeding
CSBC	Centre for Social and Behaviour Change
EBF	Exclusive Breastfeeding
EIBF	Early Initiation of Breastfeeding
FLHW	Front Line Health Worker
ICDS	Integrated Child Development Services
IEC	Information, Education and Communication
IYCF	Infant and Young Child Feeding
MIL	Mother-in-Law
MoHFW	Ministry of Health and Family Welfare
MoWCD	Ministry of Women & Child Development
NFHS	National Family Health Survey
PNC	Postnatal care
RCT	Randomised Control Trial
RMNHC	Reproductive, Maternal, Newborn, Child and Adolescent Health
VHND	Village Health and Nutrition Day

SECTION 1:
PROJECT APPROACH

1.1. DEFINING THE BEHAVIOURS

The practice of breastfeeding in a country like India, where malnutrition and mortality rates are high, is very important. Breastfeeding is a cost-effective and key protective measure against the leading causes of morbidity and mortality for children under the age of 5 years[1]. Breastfeeding protects against diarrhoea and common childhood illnesses such as pneumonia, and also has longer-term health benefits for the mother and child, such as reducing the risk of overweight and obesity in childhood and adolescence.

The economic cost of suboptimal breastfeeding is a higher burden on health systems, lost productivity and higher household expenditure. Suboptimal breastfeeding has long term implications on human capital, poverty and equity. The human cost of it translates into preventable cases of diarrhoea and pneumonia. For India, preventable cases of diarrhoea, pneumonia and obesity amount to 3.73 crores [2]- these are the number of cases that could potentially have been prevented had breastfeeding practices been adequate. A recent report from Alive and Thrive estimates that around 1 lakh child deaths (arising from these cases) could also have been prevented[3].

1.1.1 Early Initiation of Breastfeeding (EIBF)

EIBF is the initiation of breast milk feeding within 1 hour after delivery. It is an important start to life and has numerous health benefits both for the child and the mother. Delaying initiation of breastfeeding can increase the risk of neonatal infection and death.Adherence to early initiation here can mean that the mother is more likely to continue breastfeeding for the first 6 months. [4]

Behavioural Context: It is a one-time behaviour, which is time-sensitive and takes place in a highly-emotional and physically-strenuous state. Where the person performing the behaviour (the woman who just gave birth) is in a physically and emotionally vulnerable state, having just experienced childbirth.

[1] Infant and young child feeding

[2] https://www.aliveandthrive.org/en/country-stat/india

[3] Ibid, 2.

[4] Factors influencing exclusive breastfeeding rates until 6 months postpartum: the Japan Environment and Children's Study

Deviation from EIBF can happen in the following ways:

1. **Complete Deviation**: Giving only prelacteal feed to the newborn and no breast milk within the first hour OR giving breast milk after 1 hour of birth
2. **Partial Deviation**: Giving prelacteal feed + feeding the newborn breast milk within 1 hour of birth

Learnings from Indicator Data: From the inception of NFHS data from 1992, at the national level, we find that the EIBF indicator has shown a steady rise from 9.5% in 1992-93 to 41.8% in 2019-20, which translates to a 32.3 percentage point increase over 28 years[5]. While the rise has been significant, it is important to note that even today, less than 50% of children are breastfed within the first hour of birth.

Uttar Pradesh showed an encouraging trend in the starting years, especially between 2005-06 and 2015-16, where the EIBF indicator jumped from 7.2% to 25.2%. However, as per the latest NFHS- V, its EIBF performance has fallen by 1.3 percentage points, which is a cause for concern for the state.[6]

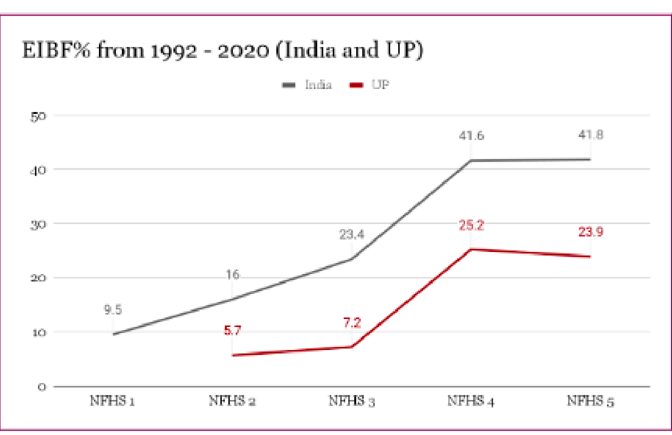

Figure 1 : National & State level NFHS data for EIBF % from 1992-2020

1.1.2 Exclusive Breastfeeding (EBF)

The World Health Organisation describes EBF as feeding the child breast milk exclusively for 6 months, which means that no other foods or liquids should be given to the child with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines. Deviation from the prescribed practice can result in potential infections in the child in the form of diarrhoea, malnutrition, and infant botulism. Giving supplements may also cause the baby to drink less breastmilk or to stop breastfeeding early and therefore result in malnutrition.

[5] NFHS India Level I, II, III, IV and V
[6] NFHS Uttar Pradesh (State level) II, III, IV, V

Behavioural context: EBF is a repeated behaviour that takes place over the course of six months. The behaviour though straight-forward (feeding the child only breastmilk), requires the mother to stay committed to the behaviour of not feeding the child anything else through the multiple points in the day where the child is hungry or she perceives the child to be hungry. Deviations to the behaviour does not only have to come from the mother, they can also come from other household members who are part of the child care process.

Deviation from EBF can happen in the following ways:

1. **One-time Deviation**: Provision of supplements at a one-time cultural event (chatti, pooja)
2. **Intermittent Deviation**: Provision of supplements like water, honey, gutti regularly but in a sporadic manner
3. **Consistent Deviation**: Provision of supplements like water, honey, gutti every day

Learnings from Indicator Data: The EBF indicator has been measured from 2005-06 onwards both at the national and state level. At an all-India level, it has shown reasonable improvement over 15 years with a rise of 17.4 percentage points (from 23.4% to 63.7%), which indicated that more than 2/3rd of children are reported to be exclusively breastfed.

Uttar Pradesh's EBF trend showed a decline from 2005 - 06 to 2015 -16 with a dip of 9.7 percentage points. In the next round of NFHS-V, it showed a 20 percentage point improvement from 2015-16 to 2019-20. The rate currently stands at 59.7%, which is lower than the national average of 63.7%.

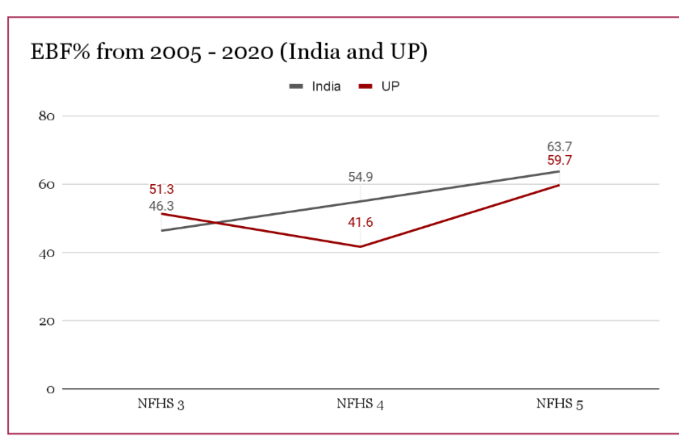

Figure 2 : National & State level NFHS data for EBF % from 2005-2020

1.2. POLICY REVIEW

As part of our diagnostic, we looked at current government support on breastfeeding through schemes and programmes both at the Centre and State level. Analysing the existing touchpoints between the health system and users helps inform our work on methods and principles being leveraged, structural barriers, and behavioural aspects in effective delivery of the schemes and programmes.

EIBF & EBF counselling and promotion are a part of various related schemes like Poshan Abhiyan, Navjaat Shishu Suraksha Karyakram, and Umbrella ICDS among others. The main guidelines on breastfeeding are the Infant and Young Child Feeding guidelines (MoHFW, 2013). These guidelines mention that there should be multiple touch-points for a pregnant (and subsequently, lactating) woman to receive breastfeeding counselling.[7]

Table 1: Key Policy Initiatives for Breastfeeding

PROGRAMME	OBJECTIVE	ACTIVITIES
Mothers' Absolute Affection (MAA)	To promote breastfeeding and provide counselling services for supporting breastfeeding through health systems	• Awareness generation among caregivers (through mass media activities) • Community-level interventions (capacity building of ANMs and ASHAs) • Health facility strengthening
World Breastfeeding Week	Information-Driven Focussed Campaign: • Informing people about the importance of breastfeeding • Providing anchor to breastfeeding as a significant public health responsibility • Engaging all for more impact • Galvanising action to protect breastfeeding for improved public health	Regular peer discussions at the AWC where mothers come together and talk about: • The benefits of EBF • The technicalities of breastfeeding (best positions for secretion of breastmilk) • The emotional bonding between a mother and the infant and its impact on the infant's personality
Sambhav (POSHAN Abhiyaan)	3 months intensive special counselling-based program focussed on MCHN. : July: Focus on pregnant women and increasing awareness among them on getting registered and getting regular ANC check-ups. August: Focus on counselling on EBF via weekly and monthly meetings with mothers + Complementary Feeding September: Focus on young girls and weighing of newborn children	Home visits by FLHWs where they give counselling on EBF (along with immunization and CF) to mothers, they send posters/pictures to women that contain counselling messages.
Dastak Abhiyan (State)	Curative: Identification and prompt management of malnourished children and	Screening children under 5 for common diseases such as diarrhoea,

[7] IYCF Guidelines 2013

	deliver essential health and nutrition services to under-five children	severe anaemia, severe acute malnutrition and providing ORS, Zinc supplements
Bal Swasth Poshan Maah (State)	Curative: Referral of undernourished children, bi-annual supplementation of vitamin A, iodized salt consumption, exclusive breastfeeding, and complementary feeding	Door to door visits by FLHWs to identify children for referral

Figure 3 below outlines how these various initiatives & schemes interact with the user's breastfeeding journey.

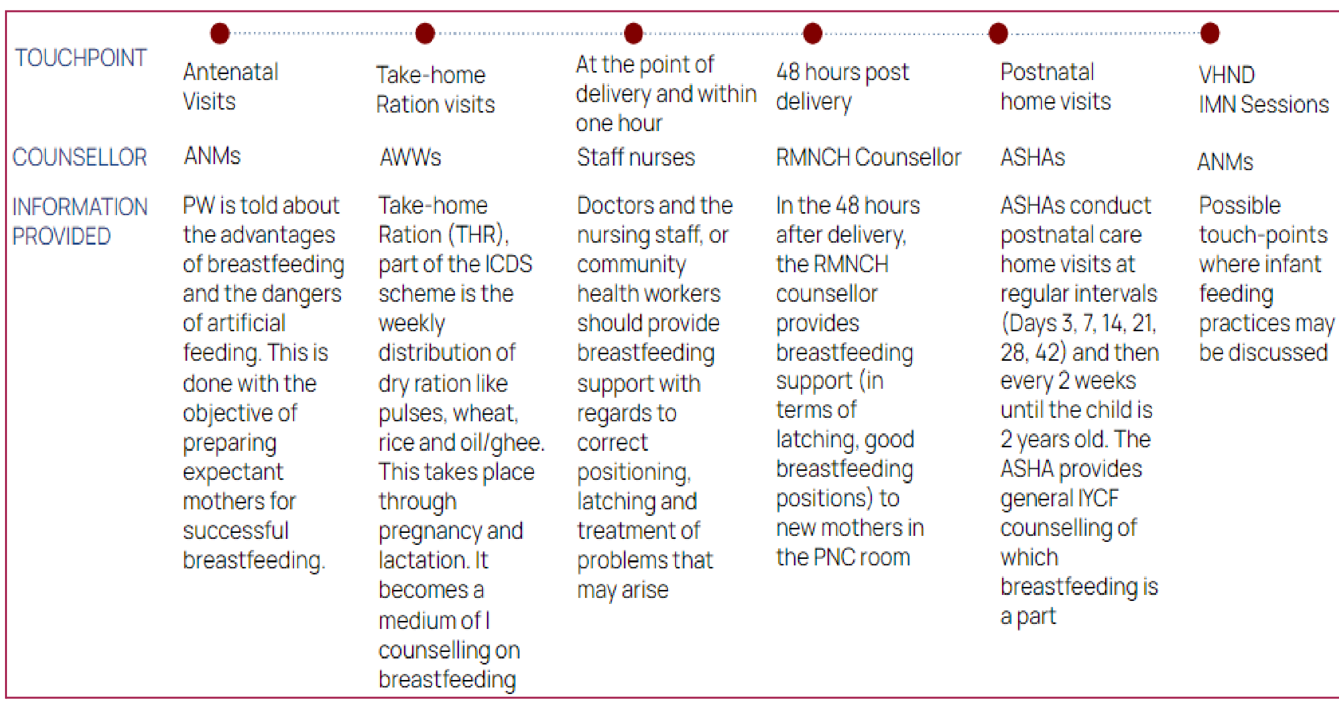

Figure 3: Public health system's initiatives and schemes

Learnings from key stakeholders

We also approached organisations working on efforts to improve breastfeeding practices, to learn from their research and interventions. We had **conversations with six experts across Alive & Thrive, UNICEF and Observer Research Foundation (ORF)** (details in Appendix 4). Listed below are some of the key takeaways from those conversations:

- Recent work from Alive & Thrive emphasize that to ensure an enabling environment for the

lactating mother to breastfeed, interventions should be designed to target both communities and also look at how systems and existing facilities can be strengthened.

- UNICEF's extensive work in the domain of breastfeeding, from a more clinical & system perspective helped to highlight specific challenges that prevent uptake of EIBF & EBF practices - this included inadequacy of the supply of breast milk by mothers, insufficient understanding of hunger cues, lack of planning and preparation for breastfeeding at birth, insufficient understanding of support required during caesarean deliveries, incorrect advice from elder family members.. A key piece of advice from UNICEF was on the importance of exploring the question : "*who are young mothers listening to?"*
- The conversation with ORF focused on the systemic barriers that new mothers face while breastfeeding; some of which include lack of support at workplaces, misleading and false advertisements of breast milk substitutes, lack of extra support given to first-time mothers.

Structural Barriers

Even with the concerted efforts across the Ministry of Women & Child Development (WCD), Health Ministry and multiple non-governmental stakeholders to strengthen breastfeeding practices; there continue to exist structural barriers that need to be addressed. This includes:

- Insufficient availability of staff nurses at points of delivery results in them not being able to prioritize and ensure EIBF at the time of delivery.
- Lack of specialized health support provided to mothers with specific health complications, like a caesarean delivery or difficulties in producing sufficient milk - results in them relying on supplements to feed their child.
- FLHWs are primarily trained around the technical aspects of breastfeeding support. Training on behavioural communication to address behavioural & normative determinants of deviations is limited.
- Breastfeeding counselling is bundled with multiple other topics during ANC & PNC visits losing primary focus and leading to cognitive load.
- For women who work outside the home, there is limited availability of infrastructural support for breastfeeding to either pump or store breastmilk in advance or to bring their child to work.

1.3. BEHAVIOURAL DESIGN APPROACH

Though significant efforts have been made to improve practices of breastfeeding, we do identify that there continues to be structural barriers that hinder breastfeeding practices; additionally the recent NFHS-V data shows a stagnation and in some cases decline in breastfeeding rates. In this circumstance, it becomes imperative to find additional pathways that can support women and household members to sustain their commitment to these practices and a behavioural approach could be key.

> A behavioural approach to this policy, thus can be a powerful pathway by first identifying the underlying decision-making norms, biases & cultural, emotional influences around breastfeeding decisions. This then helps us to design specific solutions, by applying principles of behavioural science,that help families navigate those barriers and sustain their commitment to the practices.

The Centre for Social & Behaviour Change, Ashoka University thus aims to employ an empirical behavioural design approach to strengthen breastfeeding practices. This involves the following aspects:

- Secondary & Primary diagnostic research to explore & identify behavioural barriers & levers
- Use of behavioural frameworks to articulate behaviours of deviations and facilitate ideation
- Immersive & participatory design processes to generate human-centred solutions that combine the empathy of design-thinking with the rigour of behavioural science
- Rigorous experimental research to test the causal efficacy of solutions Evidence-informed recommendations on interventions to scale

A behavioural approach, though holds high potential for changing attitudes, norms & practices around breastfeeding; it might not be able to address challenges where breastfeeding deviations occur due to health concerns of the mother (where she is unable to produce optimal breast milk due to health complications) or where the mother is compelled to spend multiple hours away from the child (due to needing to work out of home in jobs that do not provide childcare services). From our early research, we do diagnose that such cases form only a minority of the population, but yet it is essential for the system-services to account for such cases and provide specific policy solutions (for eg: maternal benefits in the first 6 month, childcare service policies, wet nurse availability etc.) for these cases as the occurring deviations are beyond knowledge, attitudinal or behavioural concerns.

SECTION 2: **BEHAVIOURAL DIAGNOSTIC**

The first step to design behavioural solutions, requires us to understand the current challenges related to performing the desired behaviours of EBF & EIBF through a behavioural lens. To undertake this we conducted a secondary analysis of the literature around EBF & EIBF practices and also undertook a phased field diagnostic study.

2.1. LITERATURE REVIEW

Methodology

A Literature Review was conducted to identify existing learnings around the practice of EIBF & EBF and explore solutions that have been tried. The literature review was focused on:

- Positionality of a lactating mother in the breastfeeding ecosystem;
- Cultural and socio-economic determinants of the uptake of the practices of EIBF and EBF;
- Norms that can affect the practice of breastfeeding;
- Interventions that worked consistently and interventions that did not work

The following articles were included in the review:

- Focus : Early Initiation of Breastfeeding and Exclusive Breastfeeding practices
- Subjects: Pregnant women and lactating mothers
- Context: India-specific (expanded to South Asia)
- Type of studies: Experimental, quasi-experimental, systematic reviews, qualitative studies and policy guidelines.

Findings

A total of 46 studies were reviewed for this exercise. Details of keypapers are provided in Appendix 2.

Based on the review, key take-aways from the literature review are summarized below.

Table 2: Number of studied reviewed according to kind of study

Kind of Study / Intervention	Number
Experimental (RCTs)	8
Quasi-experimental, Cross-sectional & Empirical studies	8
Systematic reviews Meta Analysis & Discussion papers	10
Qualitative Studies, Formative, Prospective Cohort & Observational Studies	9
National Policies, Schemes and Guidelines	6
International Guidelines	5

1. Multiple factors & players affect & influence the breastfeeding journey, many of which might be beyond the control of the lactating mother.

Factors:

- *Education:* Maternal education positively affects early initiation as well as exclusivity of breastfeeding. Higher maternal education leads to better infant feeding practices [8].

[8] The effect of mother's educational status on early initiation of breastfeeding: further analysis of three consecutive Nepal Demographic and Health Surveys. Impact of maternal education and source of knowledge on breast feeding practices in Rawalpindi city

- *Parity:* Multiparous mothers with prior breastfeeding experience have a longer breastfeeding duration compared with primiparous mothers.[9]
- *Socioeconomic status:* Mothers that belong to the lower SES adhere to EBF more than mothers belonging to mid/higher SES - who are more likely to give their child breastmilk supplement. [10]
- *Employment:* Mothers who work at home are more likely to adhere to EBF, as opposed to mothers who are employed outside - especially when they work in settings that are not conducive to optimal breastfeeding.[11]

Influencers:

- *Mother-in-Law and Mother:* There is a significant positive impact on breastfeeding when grandmothers of the infants had their own breastfeeding experience or were positively inclined towards breastfeeding, resulting in more likelihood of EBF and refrain from introducing solid foods.[12]
- *Husband:* Husband's education, knowledge and opinion on EBF is linked to a woman's adherence to it.[13]
- *Frontline Health Workers (FLHW):* Training ASHAs and ANMs on knowledge, attitude and practices of breastfeeding improves the delivery of counselling. [14]
- *Peer group:* Peers who are breastfeeding infants of a similar age can have an important influence on the continuation of breastfeeding to 6 months.[15]

2. Interventions which have targeted the influencers around the lactating mother - Grandmothers, Fathers, FLHWs have proven to be effective in improving EIBF & EBF practices

Interventions that target important actors in the breastfeeding ecosystem like grandmothers, fathers, FHWs, are effective in moving the needle of breastfeeding and nutrition indicators.

- The *positive involvement of grandmothers*[16] in the health and nutrition of the child results in them giving the correct advice to their daughters and daughters-in-law. Acknowledging their importance in this system and not dismissing their earlier practices is crucial for their successful involvement.

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[9] Breastfeeding Outcome Comparison by Parity - PMC

[10] It takes a village: An empirical analysis of how husbands, mothers-in-law, health workers, and mothers influence breastfeeding practices in Uttar Pradesh, India

[11] Regional prevalence and determinants of exclusive breastfeeding in India

[12] The influence of grandmothers on breastfeeding rates: a systematic review I BMC Pregnancy and Childbirth I Full Text

[13] It takes a village: An empirical analysis of how husbands, mothers-in-law, health workers, and mothers influence breastfeeding practices in Uttar Pradesh, India

[14] JCDR - ASHA, Infant feeding, Exclusive breastfeeding, Action cards

[15] The effect of peer counseling on breastfeeding behavior of primiparous mothers: A randomized controlled field trial

[16] Senegalese grandmothers promote improved maternal and child nutrition practices: the guardians of tradition are not averse to change - ScienceDirect

- Literature shows that *joint counselling with the lactating mother and grandmothers*[17] leads to a longer duration of the practice of EBF as well as reduction in provision of supplements to the child. Talking through and solving for difficulties faced during breastfeeding and reinforcing the positive effects of breastfeeding and the ill-effects of supplements have been successful.
- Birth-preparedness programmes do hold promise to positively influence household-level behaviours and birth-planning and increase adherence to EIBF[18]. *Involvement of family members*[19] can be helpful and can lead to more informed choices before and after birth.

Our learnings from the literature review provide us with a clear direction in thinking about interventions to improve EBF and EIBF practices i.e. to target the larger ecosystem of actors around the women, who influence the breastfeeding decisions. But what remains elusive is the thinking around *the approach or ways to target the actors & influencers* for sustainable behaviour change.

Recent work by Cristina Legare et. al (2021) outlines one such pathway to influence medical/health behaviours, that is to *engaging traditional medical rituals of local populations*[20]. The authors outline that *rituals are able to promote health, collective action and have a reinforcing element about them* - and leveraging ritualization can be an effective tool to increase behaviour uptake.

Given how universally child-birth & feeding are highly ritualized activities, influenced by cultural norms - our diagnostic research focussed on understanding the current socio-cultural ecosystem around EIBF & EBF - the beliefs, the practices & the influencers.
Such an approach then potentially provides us a pathway to design solutions that leverage & build-off existing rituals for driving behaviour change, rather than disrupting or dismissing the existing culturally-ingrained rituals around these vital moments.

The next section delves deeper into field research conducted in rural Uttar Pradesh to outline findings around the existing social & cultural norms and beliefs related to EBF & EIBF.

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[17] Counselling sessions increased duration of exclusive breastfeeding: a randomized clinical trial with adolescent mothers and grandmothers | Nutrition Journal

[18] Are Birth-preparedness Programmes Effective? Results From a Field Trial in Siraha District, Nepal

[19] Birth Preparedness and Complication Readiness (BPCR) interventions to reduce maternal and neonatal mortality in developing countries: systematic review and meta-analysis | BMC Pregnancy and Childbirth

[20] Leverage the power of ritual to improve community health worker efficacy and public health outcomes:Lessons from Bihar, India

2.2. FIELD DIAGNOSTIC STUDY: APPROACH & FINDINGS

We have conducted two rounds of diagnostic research.

- Phase 1: Qualitative study to explore & understand the socio-cultural ecosystem, beliefs, influences and barriers related to the EBF & EIBF behaviours.
- Phase 2: A prioritization exercises to identify "top barriers" impeding EBF & EIBF practices

We outline below the core findings across the different phases of research.

2.2.1. PHASE 1: IDENTIFYING NORMS, BELIEFS & INFLUENCES

Methodology

An ethnographic & exploratory mode of research was followed, and discussions with samples were in the form of in-depth interviews & Focus Group Discussions.

Enumerators from Fatehpur district were hired through a local agency, trained and then spent fourteen days doing data collection. The project team joined calls remotely, since travel was restricted due to the ongoing COVID-19 pandemic

Table 3: Site & Sample for Phase 1 of the Field Diagnostic study

Sample size	Site
Total sample size = 36 - **Lactating Mothers**: 12 IDIs - **ASHA workers**: 2 FGDs - **ANMs**: 2 FGDs - **Husbands**: 4 IDIs - **Paternal Grandmothers**:4 IDIs - **Maternal Grandmothers**: 4 IDIs - **Government Officials**: 8 IDIs	**Chitrakoot and Fatehpur** The site selection was based on the factors: - Performance of EIBF & EBF indicators using NFHS-V data - Filtering to aspirational districts[19] of Uttar Pradesh Fatehpur : both the EBF & EIBF rates were in the lowest quartile. Chitrakoot : relative performance of EIBF practice was higher than that of EBF, which fell in the lower quartiles.

Findings

The findings from this phase of work are presented & summarized into 4 key areas:

A. Journey Map: outlining the points of potential risks & deviations from pregnancy till 2 years
B. Belief Map: Identifying the underlying perceptions & triggers around deviations
C. Social Map: Identifying the various influencers in the decision-making process
D. Barrier Listing: summary of key behavioural barriers that impede EIBF & EBF practices

The findings are further supplemented with quotes & case studies from the field.

A. JOURNEY MAP

A mother's breastfeeding-related decision-making and behaviours are seen to evolve over the period of the first 6 months, where EIBF and EBF are relevant. **At different stages during this journey, there is variation in the health system support, level of deviation, reasons for deviation, and nature of influences. Hence, understanding the mother's journey is crucial to designing impactful interventions to influence decision-making around breastfeeding.**

The following visual highlights the important points of a woman's breastfeeding journey. It begins with her receiving breastfeeding counselling during pregnancy and ends around the time the child turns two years old. Trigger situations where the chances of deviations are maximum are highlighted in orange.

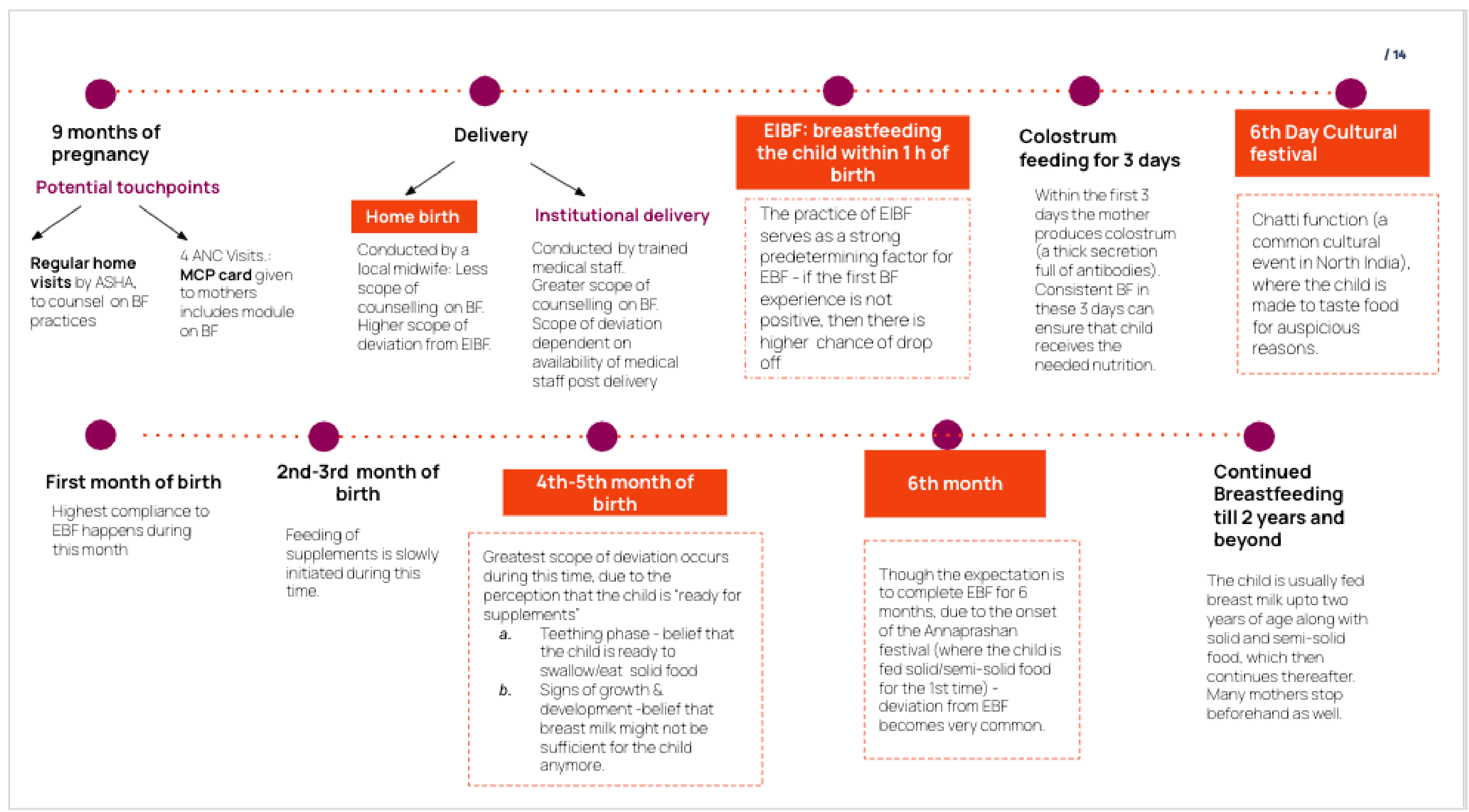

Figure 4: User's breastfeeding journey

B. BELIEF MAP

Supplements, as part of a child's feed, are significantly influenced by experiential and cultural contexts. Since these supplements are also foods that are consumed by older children and adults, the mental models from traditional and cultural knowledge associated with these foods are carried over to an infant's context as well. These foods that are perceived to have specific positive health benefits upon consumption by older children and adults are also perceived to have similar benefits for children under the age of 6 months.

SInce these mental models are deeply rooted in experiential and cultural aspects, it has been noticed that mothers and grandmothers continue to provide these supplements for the perceived health benefits despite contrasting information provided by FLHWs and nurses/doctors. Furthermore, these supplements that are believed to contain specific benefits, are often provided in response to certain triggers, with the rationale of addressing a specific need. They are also provided as part of cultural rituals.

Stories from the Field : Quotes from Mothers & Grandmothers on Child Feeding practices

"I gave honey to my baby when he was born. I believe that honey helps teeth to grow well and skin to be soft. I began giving water to the baby when he was 4 months old. I started giving daal water at 4 months as well. It helps make the baby strong and keeps him full for long"
- Lactating Mother, 22 yrs, Chitrakoot

"As the child's Annaprashan date is nearing, I will make kheer, puri for her. It will happen when she turns 5 months " *- Grandmother, 55yrs, Fatherpur*

"We had a 'chatti' function at home, where the child was given kadhi, kheer, and daal to lick. This is a celebration of the 6th day of the birth of the child - food is made in this function and generally a pooja is done for the child. "
- Lactating Mother, 23yrs, Fatehpur

The table below provides a listing of key triggers & misconceptions related to some of the more popular supplements that we came across during our fieldstudy.

Table 4: Key supplements, triggers, and common misperceptions associated with them

Supplement	Triggers & misperceptions
Water	Trigger: Heat Belief that water protects the child from **heat and dehydration**, especially during summer months. ***"I mix water with my breast milk as my child's throat gets dry in the summer and this will keep him hydrated. " - Lactating Mother, Sewapuri***
Honey	Trigger: Child coughing, Cultural occasions Belief that honey has health benefits like **protecting against colds/coughs** and helping in **teething** and keeping the gums healthy. Honey is also seen as giving *"mitha"* (sweet) to the child, which is seen as a loving & auspicious act. ***"Honey should be given when the child is born so that its teeth and gums are healthy. It can also be given if the child is teething." - Lactating Mother, Fatehpur***
Gutti	Trigger: Child falling sick Belief that gutti strengthens **immunity** and protects the child against pneumonia and colds. ***Gutti keeps the child's body warm and helps in the fast digestion of breast milk - Lactating Mother, Sewapuri***
Animal Milk	Trigger: low breast milk production This is usually given when the mother is physically not able to produce milk and/or for caregivers to feed the child when the mother is not available to do so. ***"When the mother can't lactate, animal's milk can be given to the baby." - Lactating Mother, Chitrakoot***
Ghee and Jaggery	Trigger: Given as prelacteal feed as they are culturally significant Ghee and jaggery are common prelacteal feeds - they are regarded as an auspicious beginning for the child's life and are therefore fed right at birth.

C. SOCIAL MAP

As identified from the literature review, the practice of breastfeeding takes place in a complex environment with multiple actors - each with varying influence and decision-making powers. The whole ecosystem around breastfeeding includes the woman's mother-in-law, husband, mother, other family members, and Frontline Health Workers. Our field diagnostic further outlines the influence and emotional & behavioural impact that the ecosystem imposes on a woman's breastfeeding decision-making.

Table 5: Influencers on mothers' breastfeeding decisions

Role	Nature of influence
Mother-in-law (MIL)	The mother-in-law is usually the most powerful influencer. She sets up household norms on child feeding, which are difficult for the new mother to challenge. The MIL is also usually the proponent of other religious, social, and cultural norms around feeding practices.. Older female relatives also exude a similar kind of influence. ***"My main source of information is my MIL, who had told me to give breastmilk, honey and water to the child. I listen to my MIL and am able to follow her instructions. My husband also asks me to follow my MIL's instructions."*** **- Lactating Mother, 26yrs, Chitrakoot**
Husband	The woman's husband's involvement in childcare is usually limited and distanced. They usually deflect their power & influence they have on child care to their mothers (the lactating mother's MIL in this case). They usually ask their wives to follow what their mother is saying as they believe them to be right - further advocating the MIL's influence. ***"My wife speaks to my mother. I believe that my mother's advice is correct and should be followed, so my wife follows my mother's advice."*** ***- Husband, 29, Fatehpur***
FLHWs	Frontline Health Workers positively influence a new mother. They are able to establish regular communication with her and provide breastfeeding support and counselling at regular intervals. Most of the times when EBF was followed, it was because of an ASHA worker's regular visits and counselling. ***" The ASHA worker comes 2-3 times a week and asks about my health even when the ASHA worker meets my husband or MIL outside the house."*** ***- Mother, 25yrs, Fatehpur mother***

Our findings also suggest that the child's health is seen to be the ***sole responsibility*** of the mother, whereas the decision-making power that she actually has over her own health and the child's health is extremely limited. The two key players that make decisions about the mother and the child's health are the mother-in-law and husband. This results in a form of ***distant decision-making*** where decisions are made for the mother by an external agent; who is not directly experiencing any of the benefits or challenges of the decision.

Stories from the Field

The team met Pooja Devi who had just delivered her two month old daughter Priya. When we asked Pooja about her delivery experience, she spoke very graciously of the ASHA didi who she said would come by almost on a weekly basis to check on her health and give advice to have a safe delivery.

Pooja's mother-in-law, used to keep informing Pooja of multiple do's and don'ts related to her pregnancy. Though Pooja was not always fond of the "nok jhok" (nagging) she always followed through as she cannot really argue with her mother-in-law.

Pooja told us that the ASHA didi had helped to facilitate an institutional delivery for her, and when her labour had started she, along with her husband and mother-in-law, went to the district hospital.

Pooja said that once her baby was born, her mother-in-law insisted that they quickly "chatao" (touch the child's mouth) with some honey, as she believed that it would be an auspicious start to the child's life. This was an age-old practice that Pooja's mother-in-law had performed during her child birth as well. She and her husband listened to her and performed the needed ritual, it was only after this that they started breastfeeding. She reported that the child did not consume too much breastmilk at that moment and only suckled for a few minutes.

D. BARRIER LISTING

The following table illustrates this list of barriers Phase 2 of the field diagnostic research was then conducted to prioritise key barriers within this set.

Table 6: List of barriers that prevent adherence to recommended breastfeeding practices

First Level Barriers	Sub-barriers within them
1. Beliefs that only when the child has both breastmilk & supplements will they grow up to be healthy	a. Marketing of supplements (like Cerelac) as a healthy choice and something that city/urban folk do b. High normalization of supplements as an age-old practice c. Breastmilk is not perceived as adequate for child nutrition and supplements are hence seen as a requirement d. Fear of dependency on breastmilk if supplements are not provided
2. Pressure from MILs to rely on their advice & experiences of child feeding which included feeding supplements	a. MILs are not engaged by FLHWs and don't understand the risks of supplements b. MILs from their experience have not seen visible risks of supplements - and don't agree with the risks of deviations c. Supplements allow MILs to be involved in the child feeding directly d. The high influence of MIL makes it difficult to challenge her views
3. Breastfeeding is not always convenient to practice - so sometimes supplements become necessary	a. Child does not easily latch for breastfeeding but easily consumes supplements b. Mother has multiple household duties which take up her time and makes it difficult for her to breastfeed so many times in a day c. Mother has to step out of the house for work/chores so then the child has to be left at home and fed supplements d. Breastfeeding can be physically difficult for the mother to conduct due to health conditions
4. Limited support from the FLHWs & other govt. systems to explain & support childcare practices	a. Lack of consistent FLHW support leads to greater reliance on MIL advice b. Deviations are not always stopped, even when conducted in front of staff nurses, FLHWs c. Lack of trust in FLHWs results in not considering them a credible source of information d. Private doctors & midwives do not provide the same advice about the exclusivity of breastfeeding as FLHWs

2.2.2. PHASE 2 : PRIORITISING AMONG BARRIERS

To sharpen the scope of the problem, we undertook an empirical approach, by asking lactating mothers themselves to prioritise barriers that most significantly impede their adherence to breastfeeding practices.

Methodology

A paired comparison analysis exercise, was conducted using vignettes, where women were first presented with a short story on a case of deviation. They were then asked to select between two pairs of barriers, with the intention of identifying which of the two barriers they think is more likely to have caused the deviation and also how to score "how much more important" their choice is compared to the other option, by assigning a numeric value. Based on scores of the top barrier, the second level of prioritization was done within that barrier, to arrive at a level deeper on the insight.

Such a method helps participants rank through a range of alternatives, where priorities may not be immediately apparent, and where evaluation criteria are subjective.

The barriers used are the same as listed above in Table 6. Details of the tools can be found in Appendix 3

Table 7: Site & Sample for Phase 2 Diagnostic Field Research

Sample size	Site
Total sample size = 23 Since the exercise was conducted as a way to corroborate and prioritize findings from Phase-1 , a smaller convenient sampling frame was used. This also aligned with maintaining COVID-19 safety measures.	Sewapuri, Varanasi This study took place in December 2021, when COVID-19 cases were on the rise. To align with safety measures, the site was shifted to Sewapuri where the local field team was based.

Findings

Choices & Scores were analyzed at an individual level for each respondent - first selecting the answer which got picked most often. If the choice frequency was the same, then, we selected the option which had a higher relative importance score. We then looked at the most frequent winner across respondents.[21] Out of the 23 respondents:

- 9 (40%) respondents chose Option 2 *(Pressure from MILs to rely on their advice)*
- 7 (30%) respondents chose Option 3 *(Breastfeeding not always a convenient practice)*
- 4 (17%) respondents chose Option 1 *(Belief that only with supplements will the child be healthy)*
- 3 (13%) respondents chose Option 4 *(Limited counselling support from FLHWs)*

[21] Other methods of analysis which included looking at collective relative scoring of stars also provided the same result of Option B being the highest scored barrier.

From the above the *"**Pressure from mothers-in-law to follow their advice**"* was noted as the **'top barrier'** by the sample.

For the 9 respondents that chose Option 2, the same exercise was conducted for the second-level barrier. :

- 5 respondents chose Option 4 *(The high influence of MIL makes it difficult to challenge her views)*
- 2 respondents chose Option 2 *(MILs experience make them believe deviations are not risky)*
- 1 respondent chose Option 1 *(MILs don't understand the risks of supplements)*
- 1 respondent chose Option 3 *(Supplements allow MILs to be involved in child feeding)*

From the above the second-level barrier of *"**High influence of MIL makes it difficult to challenge her views**"* was selected as the **top secondary barrier.**

Stories from the Field:

Meeta Devi, a grandmother from Karvi in Chitrakoot, talked to the team about how today's mothers are feeding their children. She mentioned that her daughter-in-law, Riya delivered her first child four months back. She enjoys being a grandmother and spends her days playing with her grandchild.

However, there is one thing that annoys her deeply - which is how Riya keeps going to the doctor for every issue with the child. Meeta says that she feels that running to the doctor for even small problems is not good and that she doesn't see a point of it. She herself has raised three children, and therefore knows how to take care of children. Meeta says that she has better advice to provide as she knows what to do when children fall sick.

Meeta told the team that her home remedies include giving the child ghutti when they have a cough, honey for a cold and jaggery when the child is crying. In most cases, Riya listens to her but when she doesn't, Meeta asks her son to tell Riya to listen to her

2.3. CONCLUSION

To identify & design behavioural solutions, we first need to be able to deconstruct the decision-making process that underlies the desired behaviours. Our initial literature review helped to (a) identify the need to expand beyond the individual (lactating mother) and account for the larger ecosystem & players that heavily influence the EIBF & EBF behaviours (b) focus our field diagnostic research to understand the specific socio-cultural norms & beliefs as a potential approach to driving inclusive behaviour change.

The first phase of our diagnostic research helped us deconstruct the normative influences on EBF & EIBF behaviours in the form of journey maps, belief maps & social maps. Each of these provided us with deeper insights into the various points of risks & deviations from the desired behaviour. It also provided a more empathetic understanding of the existing cultural beliefs & perceptions and of the familial interactions & power dynamics that tend to create opportunity barriers for compliance to EBF & EIBF practices.

The final prioritization exercise conducted with a small sample helped us corroborate & prioritize our findings in an easy way; so as to target our solutions & insights to the 'top barrier' identified by the lactating mother themselves.

In the next section, we synthesize our findings from the diagnostic activities to present a consolidated overview of the core behavioural insights & pathways for strengthening compliance to practices of early initiation & exclusive breastfeeding.

SECTION 3.

BEHAVIOURAL INSIGHTS & PATHWAYS

3.1 BEHAVIOURAL INSIGHTS & PATHWAYS

The following section presents a synthesised understanding of the core behavioural insights & solution pathways for practices of EIBF & EBF. The synthesis draws from the earlier sections of the Policy Review, Stakeholder Discussions, Literature Review & Field Diagnostic Research.

3.1.1 Early Initiation of Breastfeeding: Insights & Pathways

To initiate greater compliance to EIBF we need to focus on ways to make EIBF a supported, normative & planned behaviour

1. Mother-in-law or mother of the woman are usually her birth companions, who support the delivery process. **The mother/MIL companions, thus could play a crucial role in initiating & supporting the EIBF,** given their availability, influence and experience with breastfeeding. Though currently we find these women are not adequately counselled or prepared to support EIBF, which results in them disregarding the practice and resorting to cultural practices/beliefs which usually tend to be related to delaying breastfeeding or providing prelacteal feed to the child.

2. Counselling & preparing the mother/mother-in-law (MIL) in advance could be a significant pathway to provide the required EIBF support. Counselling on EIBF though cannot purely be pursued from a knowledge-building perspective. There exist **deep cultural & ritualistic aspects related to child birth,** which would be hard to shift only using rational arguments. Instead counselling needs to be followed from a more normative aspect that leverages the emotional quotient of the moment - by **providing families new norms or "rituals" which keep EIBF at centrestage** without disrupting the larger cultural ecosystem around childbirth.

3. Including **a planning element** for the time of delivery could also be an effective tool **to prevent return to status-quo and emotional decision-making.** Our findings reveal that currently there is minimal planning or discussion around steps post delivery. Actively including in steps for families to plan (i.e. identify steps, and then assign roles) can help them stick to their plan & judgements made in a cold-state rather than act impulsively during the "hot-state" of decision-making in the delivery room.

3.1.2 Exclusive Breastfeeding:Insights & Pathways

To initiate greater compliance to EBF we need to focus on ways to change household norms around child-feeding and actively address practices of micro-dosing of supplements

1. Younger married women in the household are **heavily guided by existing household norms & practices for decisions around childcare.** Household norms stem from the experiential knowledge of the older woman in the household and are influenced by cultural practices of the community. These norms set the precedent of what the child should be fed, how to treat illness of a child, among others. These norms usually promote practices that are focused on age-old wisdom & home remedies, contradicting a lot of the medical advice that is provided by FLAWs.

It is difficult for recent mothers to **deviate from these norms - as they are driven by their MIL and validated by the male members of the household**. During our interviews, recent mothers even discussed cases where they tried to push back on the practices (based on knowledge they had received from FLHWs) but due to their limited agency within the household they found it difficult to drive any change.

So for advocating any change in breastfeeding and child feeding practices, it is imperative to address household norms, through targeting mothers-in-law/paternal grandmothers, with potential for long-term implications of attitudinal and behaviour change.

2. Our findings show that current norms (within households) acknowledge the importance of breastmilk for child's health.Many mothers & MIL actively spoke of the value of breastfeeding for the child's health and for emotional bonding between the mother & the child. But interestingly, when it came to the **concept of "exclusivity" related to breastfeeding, there exists significant gaps in the way it was understood & internalized.**

Though caregivers acknowledge breastmilk as the main meal for the child, that **doesn't restrict them from feeding the child small quantities of supplements intermittently** within the first 6 months. This intermittent feeding of small quantities of water & food, as a supplement and not as a

substitute to breastfeeding is what **we term as "microdosing"[22].** We use this particular term to describe existing supplement feeding behaviours, so as to highlight the complexity of the underlying motivations :

a) belief that feeding of supplements is the only choice in certain circumstances for the baby's well-being

b) strong internal rationalization that supplement feeding of this nature (small quantities provided intermittently) would not cause any harm to the child's well-being.

Understanding this complex practice of microdosing of supplements, we recognize that any campaign or effort on EBF counselling, cannot rely solely on a rational approach of informing on the risks of deviations (as that is already recognized and reconciled through the microdosing practice). Instead EBF campaigns need to tactically recognize & address the practice of the microdosing (and related triggers) so as to disrupt the internal rationalization that such practices cause no harm.

3. The practice of EBF also has the additional complexity of being a prolonged behaviour,which **requires caregivers to stay committed to the idea of EBF on a daily basis for 6 months.** Our findings show that even if there is an early dedication to the practice of EBF, with time there tends to be a reduction in motivation and by the 3rd or 4th month supplement provision increases. This fall in motivation is further compounded by beliefs that the child is now "ready" for foods/liquids due to their growing size or with the indication of teething.

Any effort on EBF thus requires **a sustained intervention through the 6-months of EBF** and needs to provide pathways to keep the mother and other caregivers motivated through it.

[22] In the medical context, the term *microdosing* involves taking a very small dose of popular hallucinogenic substances for beneficial purposes. However, we are looking at it more from a behavioural lens than a medical one

3.2 WAY FORWARD

Strengthening practices of EIBF and EBF requires both reinforcing the systemic support and a behavioural approach in supporting women and families in adhering to recommended behaviours.
A behavioural approach for EIBF & EBF targets barriers to adherence relating to mindsets, norms, decision-making mechanisms and influences.

Our findings through a behavioural approach to strengthening EIBF & EBF practices, reveal that interventions require:

1. **Greater targeting & involvement of the mother/MIL** in the counselling process, since she is the one who sets the household norms, which are difficult to challenge by the lactating mother independently.

2. **Leveraging existing cultural norms** rather than displacing them, by providing 'new rituals' which keep EBF & EIBF at the centrestage. This leads to a more inclusive and sustainable approach to change in attitudes and behaviours.

3. Tactically **addressing the practice of microdosing supplements** (which is the strong internal rationalisation that feeding small quantities of supplements intermittently leads to no harm), and increasing saliency of its negative effects.

4. **Sustained support & counselling through the 6-month journey** of EBF to reduce the likelihood of drop-off by the 4th/5th month when motivation levels can fall.

The Centre for Social & Behaviour Change, Ashoka University aims to use the insights & pathways provided in this document to design effective behavioural solutions, that focus on

- Normative counselling & messaging, providing culturally relevant stories (using mythical/folk storylines) that easily integrate within the ecosystem of childcare/feeding norms.
- Actively recognising deviation triggers and practice of microdosing and providing alternative pathways for the same
- Targeting the grandmothers in an inclusive manner, by acknowledging their influence and experience.

CSBC is currently working closely with government partners to evaluate the causal efficacy of the designed interventions. The findings from the same would be disseminated and used for providing recommendations on scale-up of solutions.

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APPENDIX

APPENDIX 1 : BIBLIOGRAPHY

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APPENDIX 2 : LITERATURE REVIEW

Paper Title	Kind of Intervention/ Study	Key Idea / Insights	Mode of Operationalisation	Findings
Breastfeeding Outcome Comparison by Parity	Understanding "Breastfeeding Practices & Influences"	Multiparous mothers with prior breastfeeding experience have a longer breastfeeding duration compared with primiparous mothers	A secondary analysis was conducted of data collected in a randomized, controlled trial with mothers and "well" newborns ≥34 weeks of gestation comparing two post-hospital discharge care models. Mothers completed an in-person interview during the postpartum stay and phone surveys at 2 weeks, 2 months, and 6 months where questionnaires related to breastfeeding were completed	1. Women who have breastfed previously have significantly different breastfeeding experiences than primiparous women. Pre- and post delivery breastfeeding support should differentially target primiparous women to improve breastfeeding outcomes.
Regional prevalence and determinants of exclusive breastfeeding in India	Understanding "Breastfeeding Practices & Influences"	There are wide variations in regional prevalence and determinants of EBF in India. Improving EBF participation in India would require multifaceted national and subnational efforts that include dedicated funds and the establishment of appropriate policy and interventions that are consistently monitored and evaluated.	This study used a total weighted sample of 21,352 from the 2015–2016 India National Family Health Survey. EBF was measured as the proportion of infants 0–5 months of age who received breast milk as the only source of nourishment, based on mother's recall on feeds given to the infant 24 h before the survey	This study indicated that wide differences in the prevalence of EBF and other childhood feeding practices exist across regions of India, where Southern India had the highest EBF prevalence (79.2%) and the North-East reported the lowest (68.0%). EBF prevalence decreased with infant age, dropping faster in the South (43.7% at 5 months) compared to the North-East region (54.0% at 5 months). Similarly, substantial variations in key determinants of EBF were evident by region, where higher birth order was the only common factor associated with non-EBF across all regions

[The influence of grandmothers on breastfeeding rates: a systematic review]	Understanding "Breastfeeding Practices & Influences"	This review found evidence that demonstrates that grandmothers have the capacity to influence exclusive breastfeeding. Programs that seek to influence exclusive breastfeeding should include grandmothers in their interventions to achieve maximum impact.	A systematic review using Web of Science, Scopus, and Medline databases using search terms for grandmother and breastfeeding was conducted. Eligible studies reported on the duration of exclusive breastfeeding and included estimates of effect of a grandmother's influence including whether or not the grandmother lived with the infant's family, the grandmother's education, and the grandmother's attitudes towards and prior experience with breastfeeding.	Eight studies examined the effects of attitudes or experiences of older generations with respect to breastfeeding and five of the eight found a significant positive impact on breastfeeding when grandmothers of the infants had had their own breastfeeding experience or were positively inclined towards breastfeeding, resulting in effects of between 1.6 to 12.4 times more likely to exclusively breastfeed or refrain from introducing solid foods.
"Comparison of Breastfeeding Practices between Primigravida and Multigravida - Chennai "	Understanding "Breastfeeding Practices & Influences"	Breastfeeding experiences differ between those who have previously nursed an infant and those who are primiparous. This analysis contrasted breastfeeding outcomes between primiparous women and those with previous experience from maternity stay through 6 months postpartum.	A comparative study with mothers and newborns ≥ 34 weeks of gestation comparing two post-hospital discharge care models. Mothers completed in-person interview during the postpartum stay and surveys at 6, 10, 14 weeks and 6 months (during the course of vaccination) in a tertiary care hospital Chennai where questionnaires related to breastfeeding were completed. All participants intended to breastfeed.	Among 200 mothers available for analysis, 98 (49%) were primiparous and 102 (52%) were Multiparous. Longer intended breastfeeding duration was observed in multiparous. Following delivery, primiparous mothers had a longer time to first breastfeeding attempt and were more likely to have fewer feeding attempts in the first 24 hours. Primiparous women reported earlier breastfeeding problems during hospital discharge. Multiparous women were more likely to breastfeed through 6 months and had a significantly lower hazard of stopping breastfeeding than primiparous mothers
Use of multiple opportunities for improving feeding practices in under-twos within child		Effectiveness of training health workers for effective counselling + increasing counselling touchpoints	Health and nutrition workers were trained to counsel mothers at multiple contact on breastfeeding exclusively for 6 months	1. Increase in the number of channels of counselling is positively associated with exclusive breastfeeding 2. The most frequent sources of counselling from birth to 3 months were immunization

health programmes				sessions and home visits , followed closely by weighing sessions; from 7 to 12 months, home visits became more important than the other two.
Prevalence and determinants of exclusive breastfeeding among urban mothers of Central Kerala	Counselling	Maternal education, advice on exclusive breastfeeding during antenatal visits and length of breastfeeding session were independently associated with exclusive breastfeeding. Inadequacy of breast milk was the major reason for non-exclusive breastfeeding.	A cross-sectional study was conducted among all mother infant pairs of 6-12 months age enlisted in the updated MCH register of KMCH center, Ettumanoor. Data was collected using a semi structured interview schedule. Factors related to exclusive breastfeeding were analysed by bivariate and multivariate analysis using SPSS	1. Advice on exclusive breastfeeding during antenatal visits was a found to be a significant factor 2. The practice of EBF was less among working mothers. 3. EBF for six months was seen more among those mothers who breastfed their child more than 15 minutes during each session during their initial days of breastfeeding 4. The major reasons for non-compliance to exclusive breastfeeding were mother's feeling of insufficient breast milk, followed by the misconception of mothers that water can be given during first six months and medical problems
It takes a village: An empirical analysis of how husbands, mothers-in-law, health workers, and mothers influence breastfeeding practices in Uttar Pradesh, India	Complex Ecosystem of Breastfeeding	EBF has a complex ecosystem; various behavioural and demographic characteristics of the mother along with her family & community have a strong influence on EBF	The survey was carried out in two districts (Unnao & Kanpur Dehat) and 26 rural blocks, including 1,838 recently delivered women (RDW) with infants under 6 months of age. Within the household, 1,194 husbands and 1,353 MMILs of RDWs were also interviewed as part of the survey. Data from RDW were used to assess maternal, health service, and community factors related to breastfeeding practices, and data from husbands/MMILs were used to assess the role of family members to support women for breastfeeding practices.	1. A stepwise progression of higher maternal knowledge increasing the odds of EBF in the first 6 months of life 2. Women with high maternal beliefs and self-efficacy were twice more likely to EBF 3. Women with high levels of stress were less likely to EBF Women who experienced domestic violence in the last 12 months were also less likely to EBF their infant 4. Women of higher SES were more likely to provide breastmilk substitutes to their infant

Facilitators and challenges to exclusive breastfeeding in Belagavi District, Karnataka, India	Complex Ecosystem of Breastfeeding	EBF is impacted by multiple personal, family, cultural and structural factors. Knowledge, health conditions, the attitudes of immediate and extended family, traditional practices, the availability of peer or community health worker support, and workplace policies such as the time and privacy to feed or pump breast milk, all influence a woman's ability to initiate and maintain EBF	Eight focus groups incorporating 75 women and their support networks were conducted in the Belagavi District, Karnataka State, India. A directed content analysis was used to guide the analysis.	1. A challenge to EBF was the mixed practices described about the use of colostrum which reflected older, traditional views and were contrary to providers' recommendations 2. More troubling was the apparent widespread use of a variety of supplemental feeding practices which seemed to exist for many concurrently with the idea of breastfeeding as best for babies
Interventions promoting exclusive breastfeeding up to six months after birth: A systematic review and meta-analysis of randomized controlled trials	Breastfeeding Support via healthcare services	Intervention effectiveness increases when a protocol is available for provider training, when interventions are conducted from the pre- to postnatal period, when the hospital and community are connected, and when healthcare professionals are involved.	A total of 27 RCTs were reviewed, and 36,051 mothers were included	1. The effectiveness of breastfeeding support interventions to promote EBF for 6 months was significant. 2. A further subgroup analysis of intervention effects shows that a baby friendly hospital initiative (BFHI) intervention a combined intervention, a professional provider led intervention, having a protocol available for the provider training program and implementation during both the prenatal and postnatal periods increased the rate of EBF for 6 months.
Effect of community-based promotion of exclusive breastfeeding on diarrhoeal illness and	Breastfeeding Support via healthcare services	In the intervention communities, health and nutrition workers were trained to counsel mothers for exclusive	Promotion of exclusive breastfeeding until age 6 months in a developing country through existing primary health-care services is feasible, reduces the risk of diarrhoea, and does not lead to growth	1. At 3 months, exclusive breastfeeding rates were 79% in the intervention and 48% in the control communities The 7-day diarrhoea prevalence was lower in the intervention than in the control

growth: a cluster randomised controlled trial		breastfeeding at multiple opportunities	faltering	communities at 3 months
Effectiveness of the Training Course of ASHA on Infant Feeding Practices at a Rural Teaching Hospital: A Cross Sectional Study	Counselling	Training health workers for effective counselling + increasing counselling touchpoints	ASHA Workers were trained on breastfeeding modules and were later assessed on them	The training on the knowledge, attitude and practices of breast feeding was found to be effective. The difference in the pre and the post test score of the participants was found to be statistically significant ($p < 0.05$).

APPENDIX 3: PHASE 2 STUDY TOOLS

Vignette:

I. Mamta is a 21 year old, first time mother from Panwar village, in Jhalawar district. She and her husband, Rajesh recently had a baby girl, Anjali, who is now 3 months old. The delivery was done in the nearby district hospital, the nurse explained all the do's and don'ts around childcare - including about breastfeeding, immunization and hygiene. The whole family is very excited about Anjali's birth and pays her loads of attention and care.

Mamta's routine is quite set. She wakes up early everyday, around 5 am and starts doing household chores. She first cooks for all family members and then starts cleaning the house. Around 8 am, she wakes up Anjali and breastfeeds her. Afternoons can get very hot in Panwar, so after breastfeeding Anjali for the second time, Mamta feels that her mouth will get dry, so she gives her a little bit of water.

Later in the day, Mamta gets busy washing and drying clothes. As she does that, Anjali is in care of her mother-in-law, Rekha ji. Rekha ji loves being with her granddaughter, she prepares gutti to feed Anjali just like she used to do for Rajesh when he was a baby.

In the evening, once she is done with her chores, Mamta sits with Anjali and gives her a nice oil massage. Usually after this she tries to breastfeed Anjali again, but sometimes she refuses to latch, and starts to cry a lot - at this time Mamta sometimes gives her honey or gutti, and Anjali tends to calm down.

PAUSE

1. Does Mamta's routine and decision seem familiar to you ? Have you had experiences similar to Mamta?
1a. If not - How have your experiences been different from Mamta's?
1b. If yes - What do you find most familiar between you and Mamta's story?

II. The ASHA worker of their village visited their house one day to check on Mamta and Anjali's health - there she found Anjali's stomach was quite bloated and that Anjali was having digestion problems. Everyone in the household was quite worried about this.

PAUSE

2 . Why do you think this happened to Anjali?
2a. If answered "giving other foods" (deviation) - Do you think such deviations are avoidable? How?
2b. If didn't know or answered other - Do you think Anjali's stomach bloating has anything to do with her being fed water or gutti? Based on yes/no - Why?

III. When ASHA worker [name] started asking more questions about what Anjali has been eating she learnt that she had been getting water and gutti on top of breastmilk. Asha Worker [name] then explained how giving these foods can lead to this problem.

PAUSE

3. Do you agree with this assessment of the ASHA's? Have you heard this before about the dangers of giving other food to the child in the first 6 months?
3a. If yes - then can we play a quick exercise to understand why you think Mamta & her family still made these decisions to feed other foods?
3b. If no - then take a minute to explain why deviations are dangerous + now can you help us think of reasons how decisions around what to feed a child are made?

Paired Comparison Analysis

TABLE 1	Belief that only when the child has both breastmilk & supplements will they grow up to be healthy	Pressure from MILs to rely on their experiences of child feeding which included feeding supplements with breastmilk	Breastfeeding is not always convenient to practice - so sometimes supplements become necessary	Lack of support from the govt. to explain & support childcare practices
	Option A	**Option B**	**Option C**	**Option D**
Belief that only when the child has both breastmilk & supplements will they grow up to be healthy **Option A**		Option A - Option B - By how many stars : 1, 3, 5	Option A - Option C - By how many stars : 1, 3, 5	Option A - Option D - By how many stars : 1, 3, 5
Pressure from MILs to rely on their experiences of child feeding which included feeding supplements with breastmilk **Option B**			Option B - Option C- By how many stars : 1, 3, 5	Option B - Option D - By how many stars : 1, 3, 5
Breastfeeding takes time and is not always feasible option - so sometimes supplements become necessary **Option C**				Option C - Option D - By how many stars : 1, 3, 5
Lack of support from the govt. to explain & support childcare practices **Option D**				

Stars for A: **Stars for B:** **Stars for C:** **Stars for D:**

APPENDIX 4: LIST OF EXPERTS

The following table details the experts we had conversations with in 2021, to understand their organizations' efforts in improving breastfeeding practices, and to learn from their research and interventions.

List of experts

Name	Organisation
Dr. Sebanti Ghosh *Program Director*	Alive & Thrive
Dr. Shoba Suri *Senior Fellow*	Observer Research Foundation
Alka Malhotra *Specialist, Social and Behaviour Change*	UNICEF
Lopamudra Tripathy *Programme Officer*	
Dr. Gayatri Singh *Child Development Specialist*	
Cheshta Gulati *NUNV Monitoring and Evaluation Officer*	

About CSBC

At the Centre for Social and Behaviour Change, we are focused on bringing new capabilities such as behavioural science, design thinking, advanced data analytics and responsive feedback to governments, practitioners and donors to help better design and optimise behaviour change interventions. We work closely with Central and State Governments as well as other stakeholders in the areas of nutrition, sanitation, financial inclusion, maternal & newborn care, data privacy and agriculture.

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