

**SOCIAL AND BEHAVIOR CHANGE COMMUNICATIONS (SBCC)
STRATEGIES TO ADVANCE POSHAN ABHIYAAN**

Jan Andolan For Maternal And Child Health: Communication, Beliefs And Practices Among Pregnant And Lactating Women

INTERIM FINDINGS FROM FOCUS GROUPS IN THREE STATES OF INDIA



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Glossary

ASHA	Accredited Social Health Activist
AWC	Anganwadi Centre
AWW	Anganwadi Worker
CD	Community Development
CHW	Community Health Worker
COVID-19	Coronavirus disease
EBF	Exclusive Breastfeeding
FGD	Focus Group Discussion
GOI	Government of India
ICDS	Integrated Child Development Services
IFA	Iron and Folic Acid
IYCF	Infant and Young Child Feeding
KAP	Knowledge, Attitudes, Practices
NOS	Not Otherwise Specified
POSHAN	Prime Minister's Overarching Scheme for Holistic Nutrition
SBCC	Social and Behavior Change Communication

Executive summary

Context

The launch of *POSHAN Abhiyaan* (Prime Minister's Overarching Scheme for Holistic Nutrition) in 2018 has paved the way for a mass movement, *Jan Andolan*. Its focus on social and behavioral change among parents and improving linkages between communities and the health systems aim to promote a transformative change and improve nutritional outcomes. For such a change to take root, it is critical (a) to unearth promising dietary practices shaped by factors such as geographical, cultural, societal and individual considerations, and (b) to develop and implement appropriate social and behavioral change communication strategies to initiate, reinforce and scale them up.

Our Phase I report titled '[The First 1000 Days of Life: Lessons from Social and Behavior Change Communication](#)' summarizes the role of social and behavior change communication (SBCC) campaigns in promoting *POSHAN Abhiyaan*. It also documented promising regional practices and strategies that promote nutrition-seeking behavior among communities. Following our Phase I report, we sought to identify individual, social, and cultural drivers that influence optimal breastfeeding practices, complementary feeding practices, care-seeking practices, and immunization, through communication messaging and platforms. In our Phase II report, we discuss the first set of preliminary findings from our qualitative study with pregnant women and lactating mothers, which will inform the development of effective messages and the choice of key platforms for the promotion of improved nutrition-seeking behaviors among women and children in India.

Methods

To capture perspectives on underlying cultural, social, and individual drivers that influence communication behaviors of our target audiences, we collected data through 26 focus group discussions (FGD) from three different states of India. These FGDs were held with pregnant women and lactating mothers, health workers such as Accredited Social Health Activists (ASHAs) and their supervisors, and family influencers such as mothers-in-law and men. *In this preliminary report we analyzed the FGDs from the pregnant women and mothers' groups.*

Findings and Insights

Knowledge-Attitude-Behavior Gap:

The discussions revealed a knowledge-attitude-behavior gap in pregnancy-related dietary and young child feeding practices. Women in our groups appear to be aware of basic facts about anemia during pregnancy and reported receiving information on anemia and recommended dietary changes during pregnancy from various inter-personal and media sources. Most women said that they incorporated the dietary changes into their practices. All women were also aware of iron tablets and other supplements, yet it appears that they are not complying with the recommendations.

Even though women were aware that they should exclusively breastfeed their child for six months, they felt comfortable giving pre-lacteals such as jaggery water to a newborn or discarding colostrum as per traditional practices and as per the wishes of the family elders. In many cases, respondents mentioned that they confirmed new advice, provided by family members about child

feeding practices, with health workers before following it. Many women felt that their breastmilk was not sufficient for their child's well-being, and hence started animal milk or formula feed.

Even though there are new concerns around the COVID-19 vaccines due to lack of knowledge, respondents continue to get themselves and their children vaccinated with existing vaccines against common childhood diseases, as recommended by the Government of India's Universal Immunization Programme. The women trust the health workers and believe the vaccines given in pregnancy and in childhood protect them and their children against diseases. However, with respect to COVID-19 vaccines, there is either a lack of awareness or they receive conflicting advice from different information sources.

Information Sources (Media):

Amongst our target group, mass media such as television and radio appear to be important sources of health-related information as women recalled and trusted the information received from these sources. Social media such as YouTube, Facebook and WhatsApp are also prevalent sources of information, especially when women need to search for information about the different infant and young child feeding practices. Other sources of maternal and child health information include posters displayed at the hospitals, pamphlets, and *Mamta* cards.

Information Sources (Other):

At an interpersonal level, community health workers (CHWs) such as ASHA and Anganwadi workers, nurses and doctors appear to be the most trusted sources of health-related information amongst pregnant and lactating women, especially for breastfeeding practices. Women said that the CHWs and doctors also advise women on their diets during pregnancy and ways to prevent anemia. Moreover, family members are also a trusted source for women for health-related information. Women reach out to family members, especially those with experience with pregnancy and childbirth, when they need information about diet during pregnancy and breastfeeding practices.

Dietary Customs, Cultural Markers, and Community Events:

Across the states, family elders, religious figures, and places of worship appeared to play key roles in traditional events, rituals, and ceremonies related to pregnancy and feeding practices. The women also discussed restrictions on diet and physical exertion; while the main driver for following these restrictions appeared to be a fear of causing harm to the child if these restrictions were not adhered to, the women also mentioned feeling that these restrictions were beneficial for their health, and their child's health. While the women displayed awareness of key practices related to breastfeeding and complementary feeding, gaps in knowledge and practice were highlighted, particularly in discussions regarding feeding goat's milk as an alternative to breastmilk, feeding colostrum to the child, and pre-lacteal feeding customs.

Cultural and community events such as *Annaprashan* and *Godhbharai* were practiced and widely attended in all the states. Factors such as economic backgrounds, sex of the child, religious community, caste, and access to healthcare and resources, were found to influence care-seeking behaviors and customs. In some cases, women did not attend or were not aware of key traditional events related to nutrition, which may indicate a gap in access to knowledge, resources, and community networks.

Implications for practice and policy

The table below outlines key findings and insights from our focus groups, related to knowledge-behavior gaps and information sources, in the context of the overarching themes of *POSHAN Abhiyaan* and *Jan Andolan*. We also pose strategic SBCC recommendations for implementation by the Ministry of Women and Child Development, categorized by message frame, target audience, and dissemination platform across India.

Jan Andolan Themes	Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)	Strategic SBCC Recommendations for Ministry of Women and Child Development's <i>Jan Andolan</i> program (Messaging, Audience, Platforms)
Dietary Diversity and Anemia in pregnant women	<p>Knowledge</p> <p>Women demonstrated an understanding of the dietary requirements during pregnancy and the importance of consuming iron rich foods for anemia prevention.</p> <p>Many women reported diverse dietary restrictions during pregnancy including opinions on consumption of papaya, pineapple, banana and spices and possible linkages with miscarriage.</p> <p>Some women highlighted that they were not aware of community events like <i>Godhbharai</i> being conducted in their community, possibly highlighting lack of social networks. Moreover, they expressed an intention to attend such community events, in case they were informed in advance.</p>	<p>Messaging</p> <p><i>POSHAN Abhiyaan</i> should prioritize training of AWWs on messaging to reinforce anemia prevention and iron and folic acid (IFA) compliance by pregnant women.</p> <p>Given the awareness-practice gap, AWWs should promote uptake of methods to improve adherence for IFA consumption. They can also help in building a network of support within the family to improve IFA compliance amongst pregnant women.</p> <p>In addition to the focus on anemia, AWWs should give equal emphasis to spreading awareness about the dietary requirements for women during pregnancy. This can also include counselling by AWWs to address the prevalent myths about foods that are safe for consumption during pregnancy.</p>
	<p>Practices</p> <p>While most women confirmed access to IFA tablets in Anganwadi Centers (AWCs), few confirmed their actual consumption or details on compliance.</p> <p>Some women suggested that healthy foods be made more accessible at AWCs, especially during their pregnancy.</p>	<p>Messaging</p> <p>Skill-based training should also be imparted to community health workers for identifying individual barriers to IFA compliance, through inter-personal communication.</p> <p>For future enquiry, Ministry of Women and Child Development could also undertake primary research to unbundle the different barriers that women face in ensuring IFA compliance.</p> <p>Target Audiences</p> <p>Counseling for family members, especially husbands on recommended dietary changes and importance of IFA compliance.</p>

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Practices

While most reported that cultural practices like *Godhbharai* and *Annaprashan* are hosted in AWCs, women from select states pointed towards the need for recognizing and celebrating other diverse traditions related to pregnancy that were common in their area. For example, women in Assam spoke about the tradition of celebrating "Swad"/baby shower at the seventh month of pregnancy.

Platforms

State-level *POSHAN Abhiyaan* units can undertake identification of regional customs and traditions that can be used as cultural platforms to promote evidence-based messaging on nutrition and dietary requirements. These regional customs can also be incorporated into existing community events such as *Godhbharai* and *Annaprashan*.

Dietary Diversity and Anemia in pregnant women

Practices

Some women reported that during *Godhbharai* events held at schools and AWCs, while they received fruits, vegetables and sweets- they were not given any guidance on nutrition and dietary requirements during pregnancy.

Target Audiences

Trainings for AWWs can reiterate the need to impart nutrition education and counseling in culturally inspired community events such as *Godhbharai* and amplify such events in the local community.

Information Sources

While women acknowledged that they have been exposed to multi-modal messaging around anemia, including face-to-face communication with health workers and family members, paper pamphlets, TV ads, mobile videos amongst others; they did not recall any TV ads around diet needs during pregnancy, barring some mobile videos.

Platforms

Similar to Anemia, messages on dietary requirements during pregnancy can be disseminated across various mass media platforms such as television and radio, and social media platforms such as WhatsApp coupled with inter-personal counselling by AWCs. Many studies and our findings have reinforced the importance of counselling by CHWs as a critical source of information and persuasion.

Early Initiation of Breastfeeding and Exclusive Breastfeeding

Knowledge

Women's ideas on colostrum varied across different communities with many not aware of the nutritional benefits of colostrum for babies.

Traditional knowledge of colostrum focused on the 'first milk' as harmful for babies.

They also mentioned that while health workers gave them information on early initiation of breastfeeding, they did not emphasize the importance of colostrum.

Messaging

POSHAN Abhiyaan should prioritize messaging that can address the varied beliefs/notions amongst pregnant women, around the need for and importance of colostrum.

While training of AWWs can focus on going beyond generic messaging on breastfeeding, we can look to onboard doctors and healthcare staff present at the time of delivery for targeted messaging on the importance of colostrum.

AWWs should be trained on promotion of exclusive breastfeeding and promotion of mother's milk as the "sweetest milk", thus highlighting the need for exclusive consumption of mother's milk up till six months.

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Early Initiation of Breastfeeding and Exclusive Breastfeeding

Knowledge

While women understood the importance of exclusive breastfeeding, there were gaps in knowledge pertaining to frequency and duration of optimum breastfeeding of children.

Messaging

Skill-based training can be undertaken for AWWs to identify barriers for breastfeeding amongst the women, and to mitigate anxiety related to breastmilk adequacy.

Target Audiences

Inter-personal counselling to target first time and young mothers on early initiation of breastfeeding, importance of feeding colostrum and exclusive breastfeeding for six months.

Attitude

Some women indicated having a positive attitude towards colostrum, after receiving advice from the doctor.

Target Audiences

Inter-personal counselling to target first time and young mothers on early initiation of breastfeeding, importance of feeding colostrum and exclusive breastfeeding for six months.

Additionally, to target secondary audiences like mother-in laws and other women in the family, considering the level of influence they have on pregnant women in households, and to dispel any myths/ superstitions prevalent in the community.

Attitude

Some women said that they knew about the importance of exclusive breastfeeding, yet they were comfortable feeding the newborns with jaggery water, owing to related aspirations and customs around making children's words "sweet."

Messaging

AWWs should be trained on promotion of exclusive breastfeeding and promotion of mother's milk as the "sweetest milk", thus highlighting the need for exclusive consumption of mother's milk up till six months.

Practices

Many women reported the practice of discarding colostrum or first milk in some regions, with many reporting the removal and discarding of colostrum, and cleaning the breast with salt and water before feeding their child, as a customary/ traditional practice.

Messaging

POSHAN Abhiyaan should prioritize messaging that can address the varied beliefs/notions amongst pregnant women, around the need for and importance of colostrum.

Platforms

Some also reported the practice of providing pre-lacteal feeds like sugar, honey or gripe water as opposed to early initiation of breastfeeding and exclusive breastfeeding.

Given that many women considered social media to be a reliable and easy source of information on breastfeeding practices, greater attention can be given to the targeted use of social media platforms like WhatsApp, YouTube, and Facebook for dissemination of evidence-based guidelines on optimum breastfeeding.

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Complementary Feeding

Attitudes

In some cases, women reported the influence of family members on initiating complementary feeding before six months. But at the same time, they also mentioned verifying such guidance with the AWWs and ASHAs, who advise them to start complementary feeding only after six months.

Practices

Feeding formula milk, biscuits, gripe water or cow's milk to children less than six months, by women who were anxious about the insufficiency of their breastmilk. Use of formula milk was also indicated by pregnant women who felt that their child was "hungry" or upon a doctor's advice. Also, some women reported shifting to formula milk in case they had taken the COVID-19 vaccine.

Many women from the three states, highlighted how they had different customs to initiate complementary feeding such as *Annaprashan*.

Information Sources

Most women received information on complementary feeding through various channels though some particularly highlighted that they received phone calls from AWWs when their child turned six months, thus explaining the next steps on complementary feeding.

Messaging

Anganwadi Workers should be trained to reinforce the messaging around the "right time" for initiating complementary feeding, and to discourage feeding formula milk, biscuits, or other substitutes to children less than six months.

Interpersonal Counselling to particularly focus on identifying and addressing myths around early initiation of complementary feedings, especially if a mother has a sense of insufficiency of breastmilk for the growth of her child, or if a mother has taken a COVID-19 vaccine.

Target Audiences

Given the trust that women repose in health workers or doctors, Jan Andolan program to target AWWs and doctors for promoting evidence-based messaging on complementary feeding.

Targeted information for family members who can help with preparation and feeding of complementary feeds.

Platforms

POSHAN Abhiyaan should promote the use of mobile phones amongst AWWs, as a tool for sending reminders to young mothers on the "right timing" for initiation of complimentary feeding. Such interventions should be clubbed with a greater assessment on behalf of the Ministry, to assess the extent of women ownership or use of mobile phones, especially amongst the vulnerable population groups.

Additionally, more studies need to be undertaken to understand the extent of social media penetration amongst pregnant and lactating mothers. Accordingly, these platforms can be used to deliver evidence-based messages on appropriate feeding practices.

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Immunization

Knowledge

While women knew about the importance of COVID-19 vaccination to prevent infections, there was a consistent knowledge gap around the impact of COVID-19 vaccines on pregnant women.

Women knew about the benefits and the side effects of existing vaccines given during pregnancy and childhood to prevent diseases such as Tetanus, Polio, etc., and they were aware that the benefits outweigh the risks.

Messaging

Similar to messaging for pregnancy and childhood vaccines, *POSHAN Abhiyaan* should continue to provide evidence-based messaging on COVID-19 vaccination for pregnant and lactating women. Updated information and guidelines should also be provided to healthcare providers and community health workers to prevent any discordant messaging.

Such efforts should also address the extent of exposure to messaging on COVID-19 vaccination, given some women reported message fatigue.

Beliefs

Women held a negative opinion about the ill effects of vaccination for breastfeeding mothers.

Women were particularly worried about perceived adverse effects of vaccination like death and miscarriage with newer COVID-19 vaccines. In some cases, they reported consulting with the doctor for guidance, but also mentioned mixed messaging from AWWs. Some women also expressed confusion about the safety of vaccines for pregnant women.

Despite the concerns with new vaccines, women expressed trust in existing vaccines against common childhood diseases.

Target Audiences

During inter-personal counselling, AWWs could particularly focus on addressing the myths around safety of vaccination for lactating mothers. Focus should also be placed on evidence-based messaging to demonstrate that the benefits outweigh the risks.

Practices

Most mothers reported not getting vaccinated against COVID-19, especially if they were lactating.

However, women said they continued to get themselves and their children vaccinated as per the existing immunization schedule.

Target Audiences

During inter-personal counselling, AWWs should particularly focus on addressing the myths around safety of vaccination for lactating mothers.

Information Sources

While many women recalled receiving information on vaccination for children through posters in government hospitals and *Mamta* cards, and the television, some women expressed difficulty in reading posters based on their literacy level.

Platforms

While women reported to have been exposed to a high frequency of messages on COVID-19 on TV and social media. *POSHAN Abhiyaan* should also use these platforms for dissemination of messages on promotion of child vaccination.

Additionally, use of text heavy posters and graphics should be carefully considered, given that many mothers reported inability to read and recall the messages. Verbal and video messaging can be developed to mitigate these issues.

Why are we documenting promising practices for *Jan Andolan*?

With the launch of *POSHAN Abhiyaan* (Prime Minister's Overarching Scheme for Holistic Nutrition) in March 2018, the Government of India (GOI) has led large-scale efforts to improve nutritional outcomes among children, and pregnant and lactating women. Through the implementation of a multi-sectoral results-based framework, *POSHAN Abhiyaan* aims at targeted reduction of stunting, undernutrition, anemia, and low-birth weight in children in India. The mission is also unique in its focus on social and behavioral change among parents and improving linkages between communities and the health systems, thus paving the way for a mass movement, *Jan Andolan*, to promote a transformative change. Given that geography, culture, and society influence people's knowledge, attitudes, and practices towards diet and health, tackling undernutrition requires a deeper understanding of how these factors are related to dietary practices and behaviors. In the process, it is critical to document *promising practices* that contribute to healthy diet and positive health outcomes and help in scaling them up for wider adoption. Promising practices are those interventions that have the potential to promote healthy nutrition behaviors that are culturally proximal but require empirical validation and support, and are largely influenced by local social norms, cultural beliefs, and structural conditions. Broader adoption and scaling will require support through social and behavior change communication (SBCC) campaigns.

In our Phase I report titled '[The First 1000 Days of Life: Lessons from Social and Behavior Change Communication](#)'¹, we provided an overview of the role of SBCC campaigns in promoting *POSHAN Abhiyaan* by documenting a range of promising regional practices and key messages in the media that address the challenge of undernutrition, and strategies that promote nutrition-seeking behavior among communities. The report also highlighted the importance of knowledge and behaviors during the first 1000 days of life, which refers to the window of time from a woman's pregnancy until her child's second birthday. Findings presented in the current report focus on the cultural, psychological, and social beliefs and drivers that influence the health and nutritional outcomes of pregnant and lactating women, and children up till the age of five.

To unearth the individual, social and cultural drivers that influence optimal breastfeeding practices, complementary feeding practices, care-seeking practices, and immunization, we conducted focus group discussions with three key target groups: pregnant women and lactating mothers, family influencers such as mothers-in-law and men, and community health workers, in Assam, Gujarat, and Uttar Pradesh. In this report, we provide the first set of preliminary findings from the focus group discussions involving pregnant women and lactating mothers, which will inform the development of effective messages and the choice of key platforms for the promotion of improved nutrition-seeking behaviors among women and children in India. In subsequent reports, we will present the perspectives of family members such as mothers-in-law and husbands, and the perspectives of the community health workers who were a part of our Phase II focus group discussions.

1. Viswanath K., Pinnamaneni R, Awasthi A, Dhawan D, Kumar A, Poddar M. [The First 1000 Days of Life: Lessons from Social and Behavior Change Communication](#). [ebook] Ministry of Women and Child Development, Government of India. 2021.

How did we collect the data?

Given our interest in capturing underlying cultural, social, and individual determinants that influence the nutrition-related communication behaviors of our target audiences, the data were collected through focus group discussions held with pregnant women and lactating mothers, health workers such as Accredited Social Health Activists (ASHAs) and their supervisors, and family influencers such as mothers-in-law and men. The interview guide used at the discussions also included questions on care-seeking behaviors during pregnancy, breastfeeding and complementary feeding practices, and immunization. The focus groups were audio recorded, and transcripts of the discussions were analyzed.

The focus group discussions were conducted in states selected to represent four regions of India- Uttar Pradesh (north), Assam (east), Gujarat (west) and Tamil Nadu (south). Within each state, aspirational² and well-performing districts³ were shortlisted, and from each category of districts, the district with the most socio-demographic diversity was selected. Furthermore, based on Census 2011⁴, within each district, sub-districts, such as villages and towns, with the most religious and caste diversity were shortlisted. Finally, the focus group discussions were conducted in villages or towns that were most geographically convenient for travel and other logistical arrangements (Figure 1). We worked closely with the guidance and advice of the Central Ministry and state departments for Women and Child Development. In-person focus group discussions were conducted in the approved districts in Assam, Gujarat, and Uttar Pradesh in October 2021. Focus groups could not be conducted in Tamil Nadu in view of the increased incidence of COVID-19- Omicron cases - they are now scheduled for the end of March 2022.

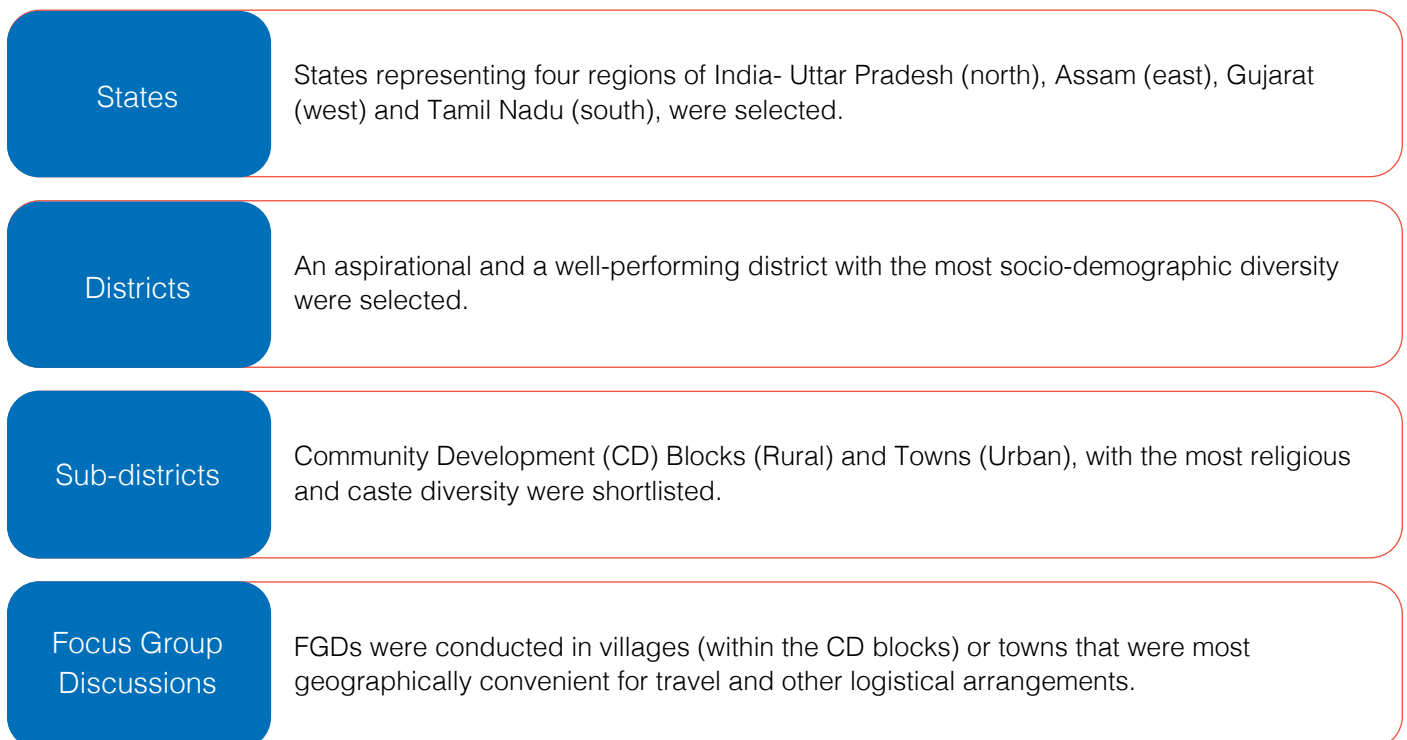


Figure 1: Selection procedure of FGD participants.

2. As determined by the National Institution for Transforming India (NITI Aayog)

3. Based on their performance of nutrition-relevant indicators from the National Family Health Survey (2015-2016). The nutrition-relevant indicators that were considered: Receiving IFA for 100+ days, Anemia in Pregnant Women, Early Initiation of Breastfeeding, Complementary Feeding, Minimum Dietary Diversity, Stunting, Wasting, Under-weight, and Childhood Anemia.

4. <https://censusindia.gov.in/2011census/dchb/DCHB.html>

Given the need for precaution in the COVID-19 era, our data collection efforts adhered to the [Generic Preventive Measures](#)⁵ from the Ministry of Health and Family Welfare. All focus group discussions were limited to six respondents and one moderator, to ensure the safety of the people attending the groups.

The number and participants in the groups are described in Table 1:

States	Districts	Number of Focus Group Discussions (FGDs) per Target Audience Group			Total per district	Total per state
		Pregnant women and Mothers	Health Workers- Anganwadi Workers/ Supervisors/ ASHAs	Secondary Audiences- Fathers/ Men/ Mothers-in-law		
Assam	Baksa	2	1	1	4	8
	Kamrup Metropolitan	2	1	1	4	
Gujarat	Narmada	3	1	1	5	9
	Jamnagar	2	1	1	4	
Uttar Pradesh	Bahraich	3	1	1	5	9
	Balrampur	2	1	1	4	
Total Number of FGDs		14	6	6	26	26

Table 1: Distribution of Completed Focus Group Discussions across States and Target Audience Groups

5. Ministry of Health and Family Welfare, Government of India. [SOP on preventive measures to contain spread of COVID-19 in offices](#). 2021.

How did we analyze the data?

To determine the diverse perceptions on nutrition- and care-seeking behaviors among our target audience groups and what drives them, we adopted a method called *rapid qualitative analysis*. The idea in rapid qualitative analysis is to focus on priority topics/audiences for timely feedback for campaign planning. This analysis included summarizing our data using a notes template, based on the interview guide, describing the outcome variables and the procedure for recording them. Three team members who are familiar with the local culture conducted the rapid analysis of the transcripts. Two team members independently generated summaries of the chosen transcripts using the notes template. The third team member reviewed the summaries and resolved any discrepancies.

For this preliminary report, we used transcripts from the pregnant women and mothers' groups. We sequentially analyzed transcripts from each state till thematic saturation was achieved, i.e., when no new observations were revealed on additional analysis. The rapid analysis ultimately included six transcripts (two each from Assam, Gujarat, and Uttar Pradesh). The final analysis and report will also include family influencers and community health workers. Post the collection of data from the focus group discussions in Tamil Nadu, we will conduct an in-depth, extensive, and systematic qualitative analysis with all four states and all three target groups.



Summary Matrix

Using the discussion guide for the pregnant women and mothers' group, we developed a coding scheme using neutral terms called 'domains', with the goal to summarize each transcript according to the chosen domains. These domains broadly correspond with the themes in the 2018 *Jan Andolan* guidelines⁶. Each interview question was assigned a domain, based on the underlying theme of the question. Subsequently, we generated a notes template, to summarize each transcript and document notes and quotes relevant to each domain (Table 2).

Module Title	Broad Domain	Specific Domain
Module 1: Generic module on women's health-related decision-making capacity and practices in the family/community	General Practices	Decision-making capacity, Information sources, Restrictions, Traditions/customs, Community events, Other general practices NOS*
Module 2: Care-seeking behaviors and practices during pregnancy	Care-seeking practices during pregnancy	Knowledge, Information sources, Feeding practices, Diet, Other Care-seeking NOS*
Module 3: Breastfeeding practices right after birth	Early Breastfeeding Practices	Knowledge, Information sources, Perceptions, Practices, Other Breastfeeding NOS*
Module 4: Breastfeeding practices	Exclusive Breastfeeding Practices	Knowledge, Attitude, practices, Information sources, Traditions/customs, Perceptions, supplements, Family/ community support
Module 5: Complementary feeding	Complementary Feeding	Knowledge, Information sources, Practices, Perceptions, Family/ community input, Other feeding NOS*
Module 6: Immunization	Immunization	Perceptions, attitude, information sources

Table 2: Domains included in the notes template

*NOS (Not Otherwise Specified)

What do the data show us?

The findings from the focus groups conducted for pregnant women and lactating mothers in three states are described under knowledge, attitudes and beliefs, practices, information sources (media), information sources (others), cultural markers and community events.

Knowledge

Diet during pregnancy and Anemia

In all three states in our study, women said that they were aware of recommended dietary changes during pregnancy and had knowledge about anemia. In addition, the women also said they had knowledge of why these modifications in diet were recommended. For example, women said that “*eating jaggery and chickpeas will increase blood flow*” [FGD23] or “*green vegetables boost blood flow*” [FGD15]. The women knew that the dietary changes made during pregnancy help “*keep the baby healthy*” [FGD19].

“When I was pregnant, doctor asked to eat more fruits. That would be beneficial for my as well as child’s health. Asked to eat more vegetables. Vegetables are rich in vitamin C.” [FGD1]

“Yes, you should consume a lot of fruits and green vegetables. It is thought that eating green vegetables boosts blood flow.” [FGD15]

Some women also reported understanding the link between maternal nutrition and breastmilk production.

“Earlier [during pregnancy] we were told to eat more. Eating many eggs, vegetables will help to keep health good and after delivery, we will have more breast milk. There will be no problem in this regard.” [FGD1]

Some women referred to anemia as “*blood deficiency*” [FGD7]. Women were aware that anemia causes pallor, weakness, and fatigue due to low hemoglobin levels, leading to “*decreased oxygen in the blood*”. Women were aware that eating green leafy vegetables improves the iron content in their blood which in turn improves their hemoglobin levels.

“The problem of lack of blood as nails become pale, (doesn’t it?) All these [deficiencies]... have such symptoms. These all are included in it. What things should be eaten so that there is no shortage, [and] there is no problem.” [FGD9]

“If there is weakness then there is weakness. Due to hemoglobin. Then we the oxygen that we take in our body do not get hemoglobin in the blood. If there is no oxygen, then there is no oxygen.” [FGD19]

And they knew that suffering from anemia can cause “*weak*” or low birth weight babies, and early or preterm delivery.

“And it can happen that due to lack of blood, the child will be born soon. Or the child will be weak inside or anything can happen.” [FGD15]

Along with dietary changes, women were aware of supplements that can help prevent and treat anemia such as iron tablets and folic acid tablets (“*pill of strength*” or “*white pills*” or “*red pills*”), and their recommended dosage.

“Two folic acid tablets.... Gives for morning and evening. Gives for a month” [FGD19]

“Iron tablet mostly given for blood. [More] blood is needed during delivery. That’s why these are given to eat for the whole nine months of pregnancy.” [FGD1]

Breastfeeding practices

With respect to breastfeeding practices, pregnant and lactating women in our study groups were mostly aware that breastmilk is better than any other animal or supplemental milk for the child. Some women were also aware that breastmilk can protect their newborn from jaundice.

"He [doctor] said that the breast milk will protect it [newborn] from jaundice. This milk [mother's milk] will keep the baby warm which protects it from disease like jaundice, it should be given as much as possible" [FGD7]

In some cases, women said that they understood that cow's milk could be injurious to the child's health.

"Cow's milk should not be given to babies since it causes colds, bloated stomachs, gas, laxatives, and other problems." [FGD15] and another respondent followed with "That's also what we were told. Do not feed all of these [animal milk] to the child until the child reaches the age of six months." [FGD15]

Across all three states in our study, in line with the POSHAN Abhiyaan recommendations, most pregnant women and lactating mothers had knowledge of optimal breastfeeding practices such as initiating breastfeeding immediately after birth (within an hour), and exclusively breastfeeding for six months.

"Kids may get sick, get sick. Can't digest [food] and it [baby] gets sick. [FGD23]

When asked what can happen if a child is fed anything but breastmilk before six months of age, a woman responded:

Some respondents understood that breastmilk satisfies the water requirements for a child less than six months old, and thus the child did not need anything over breastmilk, not even water for the first six months.

"There is ninety percent water in breast feeding, then the water deficiency is completed [during hot months], then no water has to be given from above." [FGD19]

There was no consensus around the optimum breastfeeding frequency, and women reported that they should feed on demand, or every half hour, or 12 times in six hours or they were not aware.

"Twelve times in six hours is compulsory" and another respondent followed with "Twelve times [or] as much as is mandatory [needed], the doctor gives such advice" [FGD19]

Although women were aware that they should breastfeed immediately after birth, the knowledge around colostrum or the first milk was variable amongst the women across and within the various regions in our focus groups.

"It is harmful, so take it [first milk/ colostrum] out and clean it [breasts] before drinking it. It can cause gas and other problems for the infant since it remains thick. The kid won't enjoy it, and he won't be able to drink it. Give it to him if the milk turns a little thin. As a result, this is why we take out some of this first milk and do not give it directly." [FGD15]

Some women believed that colostrum was harmful for the baby and should be discarded.

Some women were aware that colostrum is best for the baby's health and immunity.

"It [first milk/ colostrum] is a natural thing, everyone knows about the fact that the baby should be fed with breast milk after the baby is born." [FGD1]

"That mother's first milk is called best [milk]" [FGD23]

"Milk which comes out immediately after delivery, has to be fed. That is best for the baby's health." [FGD1]

Complementary food and continued breastfeeding practices

With respect to complementary feeding, most women were aware that children's needs increase as they turn older, and that breastmilk should be supplemented by solid or semi-solid food at 6-8 months of age.

"Only mother's milk should be fed for up to six months. And after seven months biscuit, moong dal, dal should be prepared and fed." [FGD1]

"In earlier days, people didn't know [about waiting till six months to start complementary foods], since they were not educated and then hence don't know anything. [They] fed water, etc. I have just heard [the practice of feeding before six months], have not seen, but there were saying about it. Now no one does." [FGD23]

"You feed the baby with mother's milk, then after six months started cerelac." [FGD7]

However, the knowledge around how long to continue breastfeeding the child widely differed amongst the women. Most women reported that breastfeeding can be continued until 10 months to one year of age, while only some knew that it should be continued for two years as per *POSHAN Abhiyaan* recommendations.

"Someone gives for ten months, eight months, twelve months, you need to breastfeed, someone who has a business, if you live at home, you feed less, twice, if you grow up in an area like ours, you feed him, if he grows up, if he grows old, he will come" [FGD19]

Immunization

Pregnant women and mothers in the focus groups were aware that vaccines keep infections at bay for both women and children and help keep them healthy. There is an understanding of diseases and the long-term consequences of those diseases that can be prevented by vaccinations, for example paralysis caused by polio.

"It's merely that they claim that if the child isn't vaccinated, anything can happen to him while still in the womb: he could become lame, contract polio, or contract tetanus, for example. As a result, all of these are solely used to keep infections at bay." [FGD15]

"I heard that [by being vaccinated] the child will not have paralysis." [FGD1]

They are also aware that vaccinations in pregnancy can help prevent infections during childbirth and in children, for example tetanus.

When asked about the benefits of vaccination, a woman responded,

“Because of this [pregnancy vaccine- Tetanus vaccine] the caesarean section does not react to the operation with a metal plate [prevents tetanus infection].” [FGD19]

Mothers were also aware of the side effects caused as a result of vaccination such as fever and pain.

“...I feel afraid on the vaccination day as the baby suffers from fever for three days, that’s the only problem otherwise I have no issue with vaccination rather it is good, it helps the baby to fight with disease” [FGD7]

There is some lack of awareness around the COVID-19 vaccines.

“Don’t know. I wanted to take it [COVID-19 vaccine], but they [family and health workers] did not let me so I did not” [FGD1]

“In the beginning there was a thought that [COVID-19] vaccination should not be given during pregnancy, then I saw it on TV and then I was vaccinated” [FGD23]



Attitudes and Beliefs

Diet during pregnancy and Anemia

Most women had positive feelings towards the recommended dietary changes in pregnancy irrespective of the source of information. They believed that the changes were for their benefit and for the benefit of their unborn baby. Most women appreciated the advice they received from family and health workers regarding the changes made to their diet during pregnancy.

“If we take good food, if our baby is in the womb, we [both] will get good nutrition.” [FGD19]

“If you don’t have iron tablet and folic acid tablet, your health and your child’s health will not improve. And if you eat then it is good for yourself and also good for health. And good for the kid too. Why it’s good? Because where the child is 1 kilo or 1.5 kilo, the child will be 2 or 3 kilo. The child becomes fat. Your body is also good. You do not feel dizzy. Headache is also relieved. The body does not feel weak – All this if you have iron and folic acid on time.” [FGD1]

A respondent expressed a feeling of fear and shame linked to anemia.

“How does it [anemia] happen and how do we get relief [from anemia] after all? We [women] do not want to feel shameful if we have concept about that [knowledge about anemia]... then we get fear otherwise not.” [FGD19]

Women expressed feelings of worry and fear with respect to the harm that they can cause to their baby by not following the dietary recommendations from the elders or health workers.

“At that time [during pregnancy] a fear haunts us that if we eat this or that [restricted food items such as papaya and pineapple] it may harm our baby, that’s why we didn’t eat those things and followed whatever the elders said.... That makes us little tensed.” [FGD7]

They felt that they should obey their elders in order to prevent any harm to their baby.

Women were worried and afraid of causing harm to their unborn child if they had anemia during pregnancy.

“I was not worried about myself [with respect to anemia in pregnancy], but was worried about the baby only. I feel afraid when I hear about blood deficiency, the baby may suffer for this during pregnancy.” [FGD1]

Breastfeeding practices

When it came to breastfeeding their children, almost all the women in our focus groups were aware that breastfeeding is best for the child’s health.

“... you can get this nutrition from breastfeeding for six months, so breastfeeding is best for six months.” [FGD19]

Most of the respondents believed that they should listen to elders and other women with experience when it came to breastfeeding practices. For example, when discussing discarding colostrum and advice from elders, a woman responded-

“We don’t know what to do because this is our first child, so they tell us to do this and that. As a result, we must act properly.” [FGD15]

Some women expressed positive views about the first breastmilk, i.e., colostrum and compared it to nectar.

“Yes, first milk is like nectar. The time the child is born, after one or two hours, the child has to feed our own milk. We feed our own milk...we feed all the milk....whether it is thick or thin.” [FGD9]

Amongst the participants, there were varying levels of belief in the sufficiency of their breastmilk to feed their child. Some mothers believed in their ability to breastfeed their child. And some were anxious that their breastmilk was not enough for their child, and usually reached out to a doctor for alternative milk options to feed the child.

“It’s natural thing, everyone knows about the fact that the baby should be fed with breast milk after the baby is born. Someone has less milk, then the mother is given to eat more things, which will lead to production of more milk. Fish or whichever thing, that is eaten by someone, or whatever they think like “if I eat this, more milk will be produced”, is given. And even after this the milk is not produced enough, then people start feeding lactogen, ‘naan’ or other things like that.” [FGD1]

“I will feed breast milk. If the stomach is not full, will think or will ask someone else which thing will be better to feed. There’s doctor, I’ll ask him too.” [FGD1]

The women believed that the doctor is committed to their well-being and followed their advice.

“That’s the thing, if doctor has advised that is definitely for our wellbeing, [and] good health.” [FGD7]

Some women mentioned that they did not feel anxious about their breastfeeding capacities since they were aware of recommended breastfeeding practices. However, most pregnant women and lactating mothers reported feelings of worry and anxiety if they were or would not be able to breastfeed. This was especially expressed by first time mothers. The participants felt that the women around them worried about their breastfeeding practices, and this frequently made them more anxious and afraid that their child will be underweight.

“Yes, there is a great deal of anxiety in our minds about not being able to provide our milk. Our child will not grow in strength, nor will he gain weight.” [FGD15]

When asked how women who are unable to breastfeed are perceived-

“Yes we start worrying about that woman.” [FGD15]

Even though women were aware that they should follow exclusive breastfeeding as per the health workers' advice, they felt comfortable giving jaggery water or grains of sugar to a newborn since they believed that this would make their "child's words sweet".

"There we have belief that children will talk sweet, the voice will be good, so we give. Fed milk as soon as it was born, and immediately made him taste honey. Just a little bit." [FGD1]

"The doctor prohibits it [giving anything other breastmilk]. The doctor says no, but some persons believes that if the child is crying, they give Jaggery water for drink." [FGD23]

Mothers who preferred privacy while breastfeeding thought it was bad luck to feed in front of others.

Complementary food and continued breastfeeding practices

Some respondents mentioned that people around them asked them to start complementary feeding early (before the child was six months old), but they checked with their family members or community health workers and decided to wait till six months.

"My child's health was not good, weight was not normal, then many people advised me to start complementary feeding.... Nearby people have told me.... Then I discussed with my sister-in-law and other family members, they advised me not to do so, whatever you can feed with your own milk, just do that, then I searched it in social media, there I got the information not to feed the child that way." [FGD7]

"I thought the baby is too thin, others are too healthy, the people use to say to start the complementary food, sometimes I feel like starting, then I asked Sonu mama [Community Health Worker] over phone, she advised me not to start so soon, then I waited till six months, now seventh month have started, now I don't have any such thoughts." [FGD7]

Some women mention that their family members such as their husband believed that if a child is drinking milk, there is no need to start or force solid food.

"My husband says that if he doesn't eat, no need to forcefully feed. Feed biscuit something else. He is drinking milk." [FGD1]

Most respondents feel that quantity of breastmilk remains sufficient for up to a year.

Immunization

In general, women had positive attitudes towards vaccinations. They believed that vaccines prevent sickness and benefit their child.

“[Vaccines are] good for the mother and the child. It is better to inject while pregnant, because of some kind of illness might come when it [baby] grows.” [FGD1]

“I think it [vaccination] is for good only, that’s why I am not afraid of this. The baby will not be weak, if vaccinated properly.” [FGD7]

Even though they were aware of the side effects of vaccination such as fever and pain, they knew that the benefits outweigh the risks.

“Let’s give it [childhood vaccinations] because it is healthy. So come on like a little fever. We have to be a little bit careful but we have to give it to keep it [child] healthy.” [FGD19]

“But I feel afraid on the vaccination day as the baby suffers from fever for three days, that’s the only problem otherwise I have no issue with vaccination rather it is good, it help the baby to fight with disease.” [FGD7]

There was a strong belief that a lactating mother should not get vaccinated while breastfeeding.

“People whose children drink breast milk, those too cannot take [the COVID-19 vaccine].” [FGD1]

“I stopped breastfeeding when my boy was five months old. I took two [COVID-19] vaccines. If the child is breastfeeding, then we should not take vaccine. That’s why I stopped breastfeeding when my boy was five months old. [FGD1]

When it comes to pregnancy and childhood vaccinations, the women express a trust in their doctors and their advice.

“As per the doctor, vaccination is good for both the baby and the mother. That’s the thing, if doctor has advised that is definitely for our wellbeing, good health.” [FGD7]

However, a lack of knowledge about the COVID-19 vaccine was a cause for concern for the respondents and made them hesitant about getting the COVID-19 vaccine. For example, while talking about the COVID-19 vaccine for pregnant women, a respondent said-

“We haven’t heard anything about it [COVID-19 vaccine] publicly yet, and no one has been vaccinated. As a result, we’re a little concerned. I’m not sure how I’m going to get it done. If some women get vaccinated, it will be known that the answer is yes!! Let’s acquire it as well. That is why we are unable to do so on our own.” [FGD15]

Women heard about the “adverse effects” of COVID-19 vaccines, such as possible death and “miscarriage”, and this made them afraid of getting the vaccine. In some cases, women overcame this hesitation against COVID-19 vaccines because their doctors told them about the vaccines, and they trusted these doctors. The women however mentioned that they are receiving mixed advice about COVID-19 vaccination from the health workers.

“Someone said we shouldn’t take it [COVID-19 vaccine], said there would be damage. I wanted to take it, but they [family members and ASHA] did not let me so I did not.” [FGD1]

“He [husband] is worried about our child, as after taking the [COVID-19] vaccine I will definitely be suffering from fever, that may affect my child too, and if I become ill there will be no one to take care of the baby, it can’t even feed, so he refused.” [FGD7]

“Initially it was said that vaccine should not be given, vaccination causes fever, body aches. Then everyone was vaccinated, so we also got it.” [FGD23]

“We thought that we should get vaccination as we are pregnant. But many people forbid to take vaccine as it will be harmful. But we have got vaccination.” [FGD15]

There is a general feeling of confusion around why the new vaccines are being given and the women are looking to other information sources such as the television for answers.

“In the beginning there was a thought that vaccination should not be given during pregnancy, then I saw it on TV and then I was vaccinated.” [FGD23]

This hesitation and discomfort seen with the newer COVID vaccine is not seen with older childhood and pregnancy vaccines.



Practices

Diet during pregnancy and Anemia

Dietary changes in pregnancy were similar across all three states. Participants in the focus groups said that during pregnancy they ate more nutritious foods, ate more in quantity and restricted certain foods from their diet. For example, women said that during pregnancy they increased their intake of milk, eggs, green leafy vegetables, and fruits. In some regions, women said they had jaggery and chickpeas to improve the iron content and prevent anemia.

“Eggplant, galka, chola, guar, even if you eat less before, after pregnancy [and] after delivery ... you have to eat these for two months.” [FGD19]

In some cases, women mentioned that they were served healthy food items at the Anganwadi center.

“So, if there is a requirement for food and drink goods every month, and those items that you do not take, then that facility might be accessible in an Anganwadi. If you inquire about the eating and drinking facilities provided to pregnant women and children.” [FGD15]

Additionally, some women also shared their concerns about lack of access to resources when it comes to following the recommended diet during pregnancy.

“Yes, I felt the benefit [of media messaging], and I also understood after listening, but we will only do all of this if we have food to eat; if we do not have food to eat, we will not do it.” [FGD15]

In some regions, women said that their doctors advised them to eat locally available food items, in lieu of concerns about fertilizers and chemicals in other foods.

“Now a days fertilizers are used while planting, which may result in serious diseases, our doctor says. So I do not eat items other than locally available items.” [FGD7]

In all states, iron tablets were made available to the women but there is no mention of if they took the supplements. Some women reported that they ate meat and fish if they have difficulty with ingesting iron or calcium supplements.

“...As I could not eat any kind of tablets, so I was advised by my mother-in-law to eat calcium rich food items.” [FGD7]

Breastfeeding practices

Women said that they initiated breastfeeding early, right after birth in many cases.

“It’s a natural thing, everyone knows about the fact that the baby should be fed with breast milk after the baby is born.” [FGD1]

“Breastfeeding is initiated early right after delivery in the hospital itself” [FGD19]

However, according to the participants there are varying practices around colostrum or the first breastmilk that is beneficial for the newborn and that should ideally be given to the newborn as per *POSHAN Abhiyaan* recommendations. Many women said they discarded it.

“It is harmful, so take it [first milk/ colostrum] out and clean it [breasts] before drinking it. Give it to him if the milk turns a little thin. As a result, this is why we take out some of this first milk and do not give it directly.” [FGD15]

In some regions, women believed in the benefits of colostrum and mentioned that they fed it to the newborn.

“[Colostrum is] good for the health of the child. Baby drinking that [first] milk means it will be very good. Everything we ate before, all the nutrients will come out with it.” [FGD1]

Some women said that discarding colostrum was an older practice that was not followed anymore.

“This was the first time that the first yellow milk was removed. It was two, three, two generations ago, not long ago, now we have to drink.” [FGD19]

“Oh, yes, it was in the time of mother-in-law but not in our times. We are said that it does not happen in our time.” [FGD9]

Despite knowledge about early initiation of breastfeeding, some women said they or women they knew fed their newborns grains of sugar or honey right after birth or when they come home from the hospital. This is done despite the doctor’s advice. And gripe water is given sometimes on the doctor’s advice. Such pre-lacteal feeds given before breastfeeds are mentioned multiple times in our focus groups.

“Fed milk as soon as [the baby] was born.. Later when [the baby] goes on someone’s lap, then they gives the baby a little bit [honey] there. Doctors don’t let them eat. But it is our belief, so we do it.” [FGD1]

“They are not given much sugar. Only sugar grains – maybe one or two.” [FGD1]

Most of the pregnant women and lactating mothers in our focus groups were aware that they should exclusively breastfeed for six months and said that they followed it in practice.

“Not even water. Not for six months.” [FGD19]

“I myself do exclusive breast feeding.; I try to feed the baby as much as I can, except the sleep time; our Anganwadi madams advised us about how to do exclusive breast feeding; after every half an hour, when the baby was too small, I used to feed it after every half an hour.; when the baby was little older then the frequency was about once in every one hour.” [FGD7]

However, some women said that they feed their children other liquids such as honey, black tea, gripe water or water even before the child is six months old.

“Yes, honey can be given, black tea can also be given.” [FGD15]

“Yes I am still giving [gripe water]. Doctor advised to give gripe water. It [gripe water] helps in digestion, it reduces stomach pain, gas, acidity. [FGD7]

Some women mentioned that they strictly followed the recommendations from the health workers and did not give the child anything but breastmilk till six months of age, not even water, while other women mentioned that they would feed jaggery water to soothe a baby (against the advice of the doctor).

“If there is no breastmilk coming, then jaggery water shall be given. Some person feed jaggery water. If the baby is crying, then also jaggery water given” followed by another respondent “The doctor says no [to giving jaggery water], but some persons believes that if the child is crying, they give Jaggery water for drink. Some people only feed it and those who do not get breastmilk consult a doctor. Then got the milk powder after consulting a doctor.” [FGD23]

Despite being aware of the benefits of breastmilk, the concept of alternative milk, such as cow’s or goat’s milk or powder formula milk in case the child is hungry seems to be prevalent in many women across all three states. Women who thought their breastmilk was insufficient for the child, said that they often fed the child lactogen, formula milk, biscuit, gripe water or goat/cow’s milk even before six months.

“Those who do not have sufficient breast milk, they need to be fed with other animal milk such as cow, goat etc.” [FGD7]

“Yes, they feed it [cow’s or goat’s milk]], if breastmilk does not come, then they feed it.” [FGD23]

“If mother’s milk is very less, then [goat milk] is given. When the baby’s stomach is not full with mother’s milk, then goat milk is given.” [FGD1]

The women said that they usually consult a doctor before starting formula milk but not for other forms of animal milk. Some women also mentioned shifting to formula feed if the lactating mother took a vaccine.

“Some people only feed it [breastmilk] and those who do not get breastmilk consult a doctor. Then got the milk powder after consulting a doctor.” [FGD23]

Complementary food and continued breastfeeding practices

Most women in all the focus groups mentioned that they started complementary feeding around six months of age. Among the different states, the types of food items women claimed to introduce to supplement breastmilk varied, for example it was cerelac, semolina, *payokh*, ‘nestum’ in Assam, *khichdi*, *daal* rice and *kshiro* in Gujarat, *roti*, and rice in Uttar Pradesh.

“Thin lentils, sweet or salty porridge, upma, semolina, etc., or Cerelex or Parle Biscuit, for example. They do everything at first.” [FGD15]

In practice, women said they continued breastfeeding their child for a variable period from six months to up to two years, depending on their knowledge and their need to go out for work.

“Someone gives for ten months, eight months, twelve months, you need to breastfeed, someone who has a business, if you live at home, you feed less, twice, if you grow up in an area like ours, you feed him, if he grows up, if he grows old, he will come” [FGD19]

“I have only two children, for six months I have only fed my own milk...When they start eating, I will feed my milk for three years or two years.” [FGD9]

Immunization

Most respondents across all states mentioned that they get themselves and their kids vaccinated and will continue to do so with existing vaccines (views were different for the newer COVID-19 vaccine). The women also mentioned that they get the children vaccinated despite knowing about side-effects.

“Vaccines are provided to prevent sickness, therefore this is solely for the benefit of the child. All this is for good only.” [FGD15]

“Let’s give it [vaccines] because it is healthy. So come on like a little fever. We have to be a little bit careful, but we have to give it to keep it [child] healthy. [FGD19]

Most women do not get vaccinated when they are lactating. Even though the doctors did not advise the COVID-19 vaccine, some women have started taking it.

“I’ve heard that I should take it [the COVID-19 vaccine], that’s why I’ve taken it.” [FGD1]



Information Sources (Media)

Participants acknowledged that they receive health related information from media sources such as television, news media and social media. They seemed content with their options of information sources and believed that even if they missed information from one source, they would get it from another.

“We miss one thing from somewhere, we get information from another. It is good if we get friendship from everyone.” [FGD19]

On being asked about WhatsApp sources for anemia information, a respondent said

Some participants mentioned that the information they receive through television increases their awareness and clarifies confusion.

“Yes it [television] helps us in learning something which is good for us.” [FGD7]

However, some women find it hard to remember the information they receive through television and prefer interpersonal communication.

“Anganwadi to Asha behen because those people tell us face to face... all this is forgotten on TV.” [FGD19]

Access to television was found to be a barrier for some women. For example, when asked if they had heard something on the TV or radio, a respondent said,

“There is no TV, now we live in a kutcha house, even if there is no pucca house, then we stay awake all night then how is it possible?” [FGD9]

Additionally, some women seek their husband's help to look up information on social media like YouTube.

“Ma'am I don't know too much about mobile, my husband did it [searching on YouTube]. Then I saw that the baby should be fed with mother's milk, as much as she can” [FGD7]

Diet during pregnancy and Anemia

The participants did not recall receiving much information related to their diet during pregnancy on television. However, they mentioned that they had received some messages related to diet during pregnancy through other sources such as mobile phones and other devices.

“I remember at the time of hearing it [messages on anemia and dietary recommendations], but I don't remember it now.” [FGD15]

Some women mentioned that they received the information related to anemia through pamphlets that were distributed to their homes, advertisements on TV and radio, posters, and videos on their mobile phones. However, they did not recall the messages.

When asked specifically about the messages they received through TV or radio, a woman responded

“Yes, I felt the benefit, and I also understood after listening [to the mass media messages about anemia and dietary recommendations], but we will only do all of this if we have food to eat; if we do not have food to eat, we will not do it.” [FGD15]

Some women recalled watching TV advertisements that mention folic acid pill distribution to middle school students. However, they did not recall the messages received through radio.

“According to me we should watch [videos on the ill-effects of anemia on the mother and the child], then only we will know, what may happen and what may not?” [FGD7]

Few respondents appreciated the dissemination of messages in the form of videos as they found this information increased their knowledge, especially when these messages revolved around the ill-effects of anemia.

“If we see [videos on the ill-effects of anemia on the mother and the child] we can also differentiate between the wrong and right, the experienced doctors produce their opinion in these videos, we can learn from them and can understand too.” [FGD7]

They also mentioned that some of these messages made them anxious.

“I didn’t watch [videos on the ill-effects of anemia on the mother and the child] too much; If we see these things, negative thoughts haunt us all the time” [FGD7]

Breastfeeding practices

Some participants mentioned that they benefitted from the information about breastfeeding practices disseminated through posters at the hospitals. They also recalled receiving information about exclusive breastfeeding practices and introduction of complementary feeds through television and radio.

“Then I discussed with my sister-in-law and other family members, they advised me not to do so, whatever you can feed with your own milk, just do that, then I searched it in social media, there I got the information not to feed the child that way.” [FGD1]

Some women were unable to remember the messages about breastfeeding that were seen on television whereas others remembered the messages, such as those which specified that early breastfeeding is good for the baby. Some women stated that they have seen videos related to pre-lacteal feeding on mobile phones, specifically that honey should not be fed to the newborns.

“I have got it in WhatsApp, I didn’t know much about mobile, my husband find[s] out these things and let me watch.” [FGD7]

Although, sometimes women needed help from their husbands to navigate the mobile phones, social media such as YouTube, Facebook and WhatsApp were mentioned as reliable sources of information on breastfeeding.

Some women were confident that they can find breastfeeding related information on Facebook and YouTube.

“If we search [on Facebook], everything comes” [FGD1]

“Yes I have seen [breastfeeding related information] on mobile, now a days these are available on YouTube, Facebook search list.” [FGD7]

However, some women stressed that even though they usually saw videos on their mobile phones, they did not remember seeing any videos about breastfeeding.

Overall, women find media to be a helpful and trusted source of information. Moreover, they would reach out to ASHAs from time to time to confirm the information they received through the media.

“By watching these videos we may learn some things or can be aware of such facts which we can confirm by asking our ASHA worker and then we can do accordingly.” [FGD1]

Complementary feeding

Women received information on appropriate complementary feeding practices via WhatsApp from the ASHAs and the Anganwadi Workers (AWWs). They also mentioned learning about it from TV and radio. Additionally, posters at the hospitals and anganwadis also informed them about complementary food with images of age-appropriate complementary foods.

“Yes, it [information on complementary feeding] is also shown on television that it should be done in this manner. Now I don’t remember the ad.” [FGD15]

“The family members had told me that it [complementary feeding] should be like this, so I used my brain to convince myself that it should be like this. This information was given to me in the first child. After that, I was once again aware. [...] Yes, it is also shown on television that it should be done in this manner.” [FGD15]

Some women also mentioned that they receive a phone call from community health workers when their child completes six months, informing them about the next steps in the child’s diet.

“A call comes, called KILKARI, they advise us that your baby has completed six months, now you have to start semi solid food, they also said about what kind of food to be given? They told us like that.” [FGD7]

Immunization

Participants recall receiving vaccine related information from television, radio, and magazines. They also learn about the different recommended vaccines for children from posters in the government hospitals and *Mamta* cards distributed by Anganwadis. Women found the messages disseminated through television helpful. However, women who were not literate expressed that they were not able to understand the information given on the posters.

“No sir, we are not literate and we don’t know how to read” [FGD9]

COVID-19 vaccine related information was disseminated through news channels and advertisements on television and Facebook. Women found the information to be helpful in convincing them to get vaccinated.

“In the beginning there was a thought that [COVID-19] vaccination should not be given during pregnancy, then I saw it on TV and then I was vaccinated.” [FGD1]

Some women also mentioned that they do not pay attention to the COVID-19 vaccine related information on television.

“Earlier these [COVID related information] were shown on TV, but now a days we do not watch these things, even if shown we change the channel immediately.” [FGD1]



Information Sources (Other)

Family is a trusted source of information for women for health-related issues like those during pregnancy, where the women reach out to family members such as mothers-in-law, mothers, husbands, sisters, grandmothers and sometimes fathers-in-law.

“I mostly ask my mother [questions about my health]. When I call at my home, I ask my mother. Or my husband is there, so I ask him. Now slowly what new experiences I am getting, like why some pain occurs in the right side, left side, upper side or lower side of the belly. Such type of questions I have, so I ask them.” [FGD1]

“There are guardians of the house, will ask them. [...] If there is any problem or we do not understand anything, then we ask them. If it feels right, then they obey them, otherwise they ask Didi.” [FGD15]

“I’ll consult the house’s elders. If there aren’t any, go to the doctor’s clinic.” [FGD15]

Women also reach out to community health workers such as ASHA and Anganwadi workers or their doctors for health-related information. Women (in Gujarat) also mentioned that they can go to health centers every Monday while they are pregnant to consult a nurse or AWWs. In addition to receiving health related information from Community Health Workers (CHWs) such as ASHA/ AWWs, women also get advice on which hospitals to go to, what medicines to take from them.

“Yes we have our Anganwadi madams, and doctors too who advises during check-ups, do this way or don’t do that etc, they make us understand like that” [FGD7]

Diet during pregnancy and Anemia

Women usually rely on their family members like mothers-in-law and parents for information about their diet during pregnancy. Sometimes, people like neighbors and community elders also give them advice. However, for professional advice, women seek guidance from healthcare workers like AWWs and ASHAs, or their doctors. Such advice include eating or avoiding certain foods and maintaining general hygiene and sanitation.

Doctors and healthcare workers like ASHAs and AWWs educate women about anemia and raise awareness about the signs and symptoms of anemia as well as its consequences. Doctors advise the women to get tested for anemia, consume iron and folic acid supplements, and eat more fruits and vegetables. Women also learn about anemia from their experienced family members, relatives, and other members of their community.

“My husband’s elder brother’s wife [suffered from anemia]; her blood reduced too much, doctor advised to admit her, but finally revived by consuming medicine. As she was a family member I got to know about [the ill-effects of anemia] properly.” [FGD7]

“They [doctors] all tell that go for a test for anemia or lack of water. Then they tell eat beetroot, eat apple.” [FGD15]

[When asked about iron pills] “Yes, Anganwadi also explains that, ASHA sister also explains that.” [FGD9]

Breastfeeding practices

When women need information about breastfeeding practices such as benefits of early initiation of breastfeeding, exclusive breastfeeding for six months, and breastmilk in general, doctors, ASHAs, AWWs are their most trusted sources. Some women mentioned that they recall seeing informational videos on breastfeeding shared by the CHWs. Additionally, they said they are also informed about appropriate breastfeeding practices by the medical professionals before or at the time of delivery.

When asked where they receive information on what to feed at the time of delivery: “We are told in Anganwadi and by sister” [FGD9]

Family members such as mothers-in-laws and sisters-in-laws are also trusted sources of information about breastfeeding practices. Sometimes, women seek advice from husbands, other women, and neighbors if they have questions.

“... my elder sister told me that I should feed the child with breast milk only, if it doesn't satisfy its hunger then I can start cereals after completion of seventh month but feeding the baby with breast milk till six months is good. They advised me so.” [FGD7]

“It is said here that mother's milk is beneficial to the child's health.” [FGD15]

“It is simply said that Chagdi (goat) milk should not be given; instead, feed your own milk and no one else's.” [FGD15]

While women learnt about colostrum mainly from family members like mothers and elders, they were not aware of its benefits. Hence, some women discarded it or followed traditions like ‘*kheen*’, which emphasizes discarding colostrum followed by cleaning of breasts before feeding the child. When women were informed about colostrum and its benefits by doctors and nurses, they had a more positive attitude towards colostrum.

“Doctor does not allow to feed anything else. Only breast milk. The milk that comes out first, white in color, that is good for kids.” [FGD1]

A few women mentioned that their CHWs gave them generic information about breastfeeding such as exclusive breastfeeding but did not put any emphasis on the benefits of colostrum.

Complementary Feeding

Women stated that they received advise about complementary feeding primarily from their doctors, AWWs, ASHAs and nurses.

“I thought the baby is too thin, others are too healthy, the people use to say, to start the complementary food, sometimes I feel like starting, then I asked [the CHW] over phone, she advised me not to start so soon, then I waited till six months, now seventh month have started, now I don't have any such thoughts” [FGD7]

“A call comes, called KILKARI, they advise us that your baby has completed six months, now you have to start semi solid food, they also said about what kind of food to be given? They told us like that.; they say it over phone about your baby has completed six months, what should be done on seventh month?” [FGD7]

“The family members had told me that it [complementary feeding] should be like this, so I used my brain to convince myself that it should be like this. This information was given to me in the first child. After that, I was once again aware.” [FGD15]

They also felt comfortable reaching out to the doctor or going to the hospital if they had questions. Additionally, some women shared that they relied on their family members like mothers-in-law and women in family with kids for guidance, especially at the time of their first child. Other people such as husbands, house members and neighbors were also sources of information for some women.

Immunization

Women mentioned that they received pregnancy and childhood vaccine related information from doctors, nurses, AWWs and ASHAs and that they are the trusted sources.

“Doctor said. Asha madam said [that vaccines are beneficial for the child]. Septic or something like these will not happen. That's why we have not missed any of the child's vaccine.” [FGD1]

“ASHA sister told [us] about it [that the COVID vaccine is not harmful].” [FGD9]

“No, these sisters who come here tell them to get the child vaccinated, and we've heard from them.” [FGD9]

Some women also got their vaccine related information from other women in the family, especially those with kids. A few women mentioned that they trusted the ASHA workers and their families when it comes to mixed messaging, especially in the case of COVID-19 vaccines. For COVID-19 vaccines, women also considered their neighbors experiences with the vaccines. A few women reiterated that they prefer receiving face-to-face communication about vaccines from “Anganwadis” and “ASHA”. They find the “routine” in-person communication to be more effective because they are more likely to forget the information they receive from television.

Dietary Customs and Cultural Markers around Mother and Child Nutrition

General traditions and customs related to feeding practices

While the women in Uttar Pradesh did not discuss feeding-related traditions and customs in detail, they appeared to rely on family elders to guide and instruct them regarding the relevant rituals and ceremonies. For example, in response to whether they believe colostrum should be removed and cleaned, they said:

“No, no, as soon as it is recognized that we are now married, someone senior informs us that the culture there is similar to this, a ceremony needs to be performed. So this is how it goes when the first child arrives.” [FGD15]

In some communities, religious leaders distribute sweets or food after a ceremony called ‘*Chhakki Chhilla*’, which takes place 1-2 months after birth. Another custom mentioned is *Barahi*, which involves individuals partaking of milk, curd, and food for twelve days to ensure the child’s health.

“Suppose the baby is born today, and after seven days have passed, be it in Hindu or Muslim - there is a ritual where the baby is shown for the first time. For us too, the ritual is done in seven days. Then everything in the house is washed clean and people are called after seven days.” [FGD1]

In Assam, the women mentioned that it is customary to show the child to non-family members only once seven days since birth have passed. This coincides with a feast which is held for the mother, so she may eat previously restricted food such as meats and fish. Another custom is ‘*Haju*’, where the child’s hair is cut at ten months of age, in temples or mosques.

Restrictions during pregnancy

In Uttar Pradesh, the women mentioned a mix of physical restrictions, dietary restrictions, and restrictions rooted in superstition. They were instructed to avoid lifting heavy weights, climbing stairs, and eating papaya – the latter was considered a cause of bleeding. Superstitions focused on avoiding activities that were believed to impact the child – these included not going out in the 8th month of pregnancy or walking in certain directions at certain times of the day.

“Yes, that means don’t go [to] any place in the eighth month, don’t go to the west, don’t go in the afternoon, and don’t walk very far. The remainder work can’t be avoided, but it must be completed.” [FGD15]

The women mostly found these restrictions acceptable and beneficial for their child. When asked why they found these restrictions acceptable, they said:

“It’s only for our own good.” [FGD15]

Some women also mentioned that there was no obligation to follow traditions. When asked about customs or traditions that they may have to conduct even during pregnancy, they said:

“It is not so that something is happening, [one] is forced to do so. It is not like that” [FGD9]

The women in Assam also highlighted dietary and physical restrictions - these included avoiding consuming papaya, pineapple, and seafood and limiting travel extensively. In some cases, the woman was instructed not to eat cucumber during the earlier months of pregnancy. The women mentioned feeling afraid of harming the child if these restrictions were not followed.

“At that time a fear haunts us that if we eat this or that it may harm our baby, that’s why we didn’t eat those things and followed whatever the elders said.” [FGD7]

They also expressed feelings of boredom due to limited movement but showed respect for elders’ opinions and concern for their and the child’s wellbeing.

“We don’t feel bad. We respect them for these things because they are saying for our good - anything bad can happen. So we accept their advice.” [FGD1]

“The elders say that in such a situation, one should not come out of house, mostly at night, after dusk. They say it’s bad. It has been accepted since before. Now that we’ve grown, they tell us these things. They have experienced such thing, so we listen to them, and don’t go out after dusk, stay at home.” [FGD1]

“...there is a belief that if we want to eat something and can’t eat that may result in excessive fall of saliva of the baby... That makes us [a] little tensed” [FGD7]

The women in Gujarat also shared similar restrictions on diet, household work, lifting weights, and travel. Dietary restrictions included avoiding mango, papaya, pineapple, and spicy food – some of these were believed to generate heat in the body and affect pregnancy. There were mixed opinions on consuming bananas. Long-distance travel was prohibited due to sitting for many hours at a stretch and the possibility of bad roads. The women expressed positive feelings towards these restrictions, since they felt these were to be followed for their wellbeing.

Traditions/ customs related to pregnancy

According to the women, baby showers took place in all three states. In Uttar Pradesh, baby showers mostly took place at home or schools.

In Assam, the women held baby showers in the seventh or ninth month of pregnancy, for family members. Maternal and paternal sides of the family play different roles in traditions and customs. While the paternal family provides food for the baby shower, the maternal family performs the *Panchamrit* ritual. The ritual involves feeding the woman *pitha*/rice, with or without celebrations. The maternal family also performs *Swad/Swadbhokon/Swadbhog* in the seventh month of pregnancy.

“We also have swad, it is performed on seventh month of pregnancy.; from matriarchal family.; that’s the thing, if you have money you can celebrate it a huge manner, otherwise it is performed as custom.” [FGD7]

In Gujarat, baby showers took place in the seventh month of pregnancy. The women mentioned that it is customary to be in the maternal home for the first delivery, but this was only done if there was a hospital in the area.

“It is the first delivery custom to be at mom’s house for years. The first delivery was to go to mom’s house. If there is a small village, then there is no government hospital, so we have to take it to the compulsory hospital. [then] No one goes to the village” [FGD19]

Breastfeeding practices

In Uttar Pradesh, the women mentioned that breastfeeding traditions from their mothers-in-law’s generation are now outdated. For example, when the women were asked if they feed goat’s milk to their babies, they responded:

“Oh, yes, it was in the time of mother-in-law but not in our times. We are said that it does not happen in our time. ...” [FGD9]

However, in Assam, some women still feed goat’s milk to the baby, when they feel that mother’s breastmilk has been insufficient. The women also believe that they should not get vaccinated while breastfeeding and should switch to formula feed when they take vaccines.

“People whose children drink breast milk, those too cannot take [the COVID-19 vaccine].” [FGD1]

I stopped breastfeeding when my boy was 5 months old. I took 2 [COVID-19] vaccines. If the child is breastfeeding, then we should not take vaccine. That’s why I stopped breastfeeding when my boy was 5 months old. [FGD1]

“I stopped breastfeeding when my boy was 5 months old. [] took [the COVID-19] vaccine and [started] feeding lactogen to my baby.” [FGD1]

In Gujarat, women practice the *Chhathi* ritual 6-12 days after birth. These involved relatives giving prepared food to the baby’s family, as a blessing. The women were aware that earlier practices like giving water before the age of six months are not beneficial to the child.

“At six days or twelve days from delivery day there shall be ritual of Chhathi... In it, relatives gift prepared food items or provide raw grain to baby’s family to feed the baby... The child is blessed. And for the baby some gifts shall be brought by either aunt (paternal aunt) and other relatives.” [FGD23]

In Uttar Pradesh, some women discussed traditions around ‘*kheenj*’, which emphasize on removing the colostrum, discarding it, and cleaning the breast with salt and water before feeding other items.

“Yes, it should be removed by squeezing it, then after cleaning it with salt and water, then feed the milk to the infant.” [FGD15]

The women also indicated that women from the Muslim community do not give colostrum to their children or are advised not to do so by others.

In Assam, the women indicated that it is customary for the child to be fed sugar or honey as soon as they are born or as soon as they arrive home. This is done because it is believed to make the child’s words sweet, despite doctors advising against it.

Complementary feeding

The women mentioned *Annaprashan* events taking place at 6-7 months from birth.

In Assam, rice is fed to the child for the first time at *Annaprashan*, either at home or among the community with health workers. The women highlighted that this event is linked to the sex of the child and economic background of the family – boys often have grander celebrations, and the richer the family, the more grandiose the event.

“..., but when a girl is born, function is not done in a grand way. When it is time to give rice or solid food, say at around 7th month, even if the person is poor, still they do a function with family members or at least calling some people from the village. Don't make too big. Also have some fun during that function.” [FGD1]

However, some women indicated that they have not performed this event for their child.

“No. I have not seen such ritual in my family before marriage and have not seen such even after marriage.” [FGD1]

In Gujarat, *Anuprastha Sanskar* was held at six months of age, where the child is fed sweet foods. *Shreemant*, which appeared to be a caste-specific culture practiced only by some in the present day, is also performed. It involves soaking rice in water, typically done by the sister-in-law, and feeding it to the baby, seemingly to prevent the baby from experiencing a sore throat.



Community Events around Mother and Child Nutrition

In Uttar Pradesh, ‘*Godhbhara*’ or baby shower ceremonies were conducted by health workers in schools on behalf of the women. At these ceremonies, attendees were given fruits, vegetables, gram, sweets, ghee, and porridge; however, no instructions related to the benefits of nutrition and diet were given. When asked if they received information from the CHWs regarding the purpose of the baby shower and its relevance to their and their child’s health, the women said:

“No, it was just mentioned that there is a baby shower ceremony.” [FGD15]

“All of this happens, she used to say, because it’s a custom. She was only taking pictures.” [FGD15]

Some women also indicated that they were unaware of such events being conducted but would be interested in attending if they were informed. This was the case for *Annaprashan* events at the health center as well.

“There was no baby shower, if someone called, we would have gone there.” [FGD9]

“We didn’t even know about the “baby shower” ceremony because we were unaware of it” [FGD15]

In Assam, *Annaprashan* events took place either at home or among community members. An event for women who were pregnant for the first time also took place with other mothers and babies, where *payokh* and *suji* were given to eat.

“We also have these customs but that are not performed by the family... We are economically weak, being poor we do the custom only, without any kind of celebration... Yes I have experienced [Annaprashana events at Anganwadi centres]” followed by “They will call all the pregnant ladies, along with the mothers with their babies... some payokh, suji etc were given.” [FGD7]

In Gujarat, *Annaprashan* events took place in the seventh month, at Anganwadi centers. However, from the conversations, it appears this may be considered a custom for Brahmins only. *Sukhadi*, which is a food item, is typically provided to babies when they turn six months, usually the first baby. An event called *Kholo Bore* was also mentioned. The women also highlighted *Mamta Diwas* as a significant event – the event involved vaccinations, health-checkups and growth monitoring conducted by community health workers and nurses, either at health centers or homes.

“They call each child one by one and then feeds them... Baby is having six months age... They provide breakfast and feeds to babies.” [FGD23]



Insights from preliminary findings

Knowledge-Attitudes-Practice Gaps

Knowledge about dietary changes in pregnancy and anemia was widespread across all three states in the study. The source of this information varied from doctors, healthcare workers, to family members and other women with children, to mass media. Most women said that they incorporated the dietary changes into their practices, since they were worried that not following the suggestions will cause harm to their baby, or since they knew that following them will benefit their child. Some women were motivated to follow the dietary recommendations for pregnancy from family members and from health workers, since having anemia was deemed shameful. Most women improved their intake of nutritious food and restricted certain food items such as papaya, although some women did mention resource constraints to follow through on the dietary recommendations given by the health workers. Some women received healthy food items such green leafy vegetables from the Anganwadi centers. All women were aware of iron tablets and other supplements and received them for either their doctor or the community health workers. However, the discussions did not provide us any insights into their compliance with the supplements.

Even though women were aware that they should follow exclusive breastfeeding as per the health workers' advice, they felt comfortable giving pre-lacteals such as jaggery water or sugar to a newborn or discarding colostrum as per traditional practices. Against a doctor's advice, the women's behaviors are influenced by customs and by family members. The advice received from the elders is not questioned. Women believe that these people have gone through pregnancy and have raised children, so they are experienced to give them advice. In many cases, respondents mentioned that they confirmed any new advice they received about complementary feeding and other child feeding practices from family members or health workers before following it.

Many women did not follow through on exclusive breastfeeding since they felt that their breastmilk was not sufficient for their child's well-being. In such cases, women consulted doctors or elders and started animal milk before the child turned six months old.

Even though there is a concern around COVID-19 vaccines due to lack of knowledge, respondents continue to get themselves and their children vaccinated against existing vaccines. The women believe and trust their health workers. They are aware that the vaccines given in pregnancy and in childhood are for the benefit of their child and protect them against diseases and hence they follow through on vaccination. However, with respect to COVID-19 vaccines, there is either a lack of awareness or they receive conflicting advice from different information sources, specifically with respect to COVID-19 vaccination during pregnancy and lactation.

Information Sources (Media)

Generally, pregnant women and lactating mothers receive their health-related information through media sources such as television and radio, in addition to other sources. Some women recalled receiving messages from these sources around anemia, informing them about its signs and symptoms, as well as about iron supplements, their dosage, and physiological benefits. They also recalled receiving information about EBF and introduction of complementary feeding through television and radio, which specified that early breastfeeding is good for the baby. Television and

news channels are also effective sources for raising awareness about COVID-19 vaccines as some women decided to get vaccinated after learning about it from television. However, some women also admitted to changing channels whenever they see COVID-19 related material on television.

Social media such as YouTube and Facebook are also a prevalent source of information, though, some women needed help from their husbands to navigate these sources. They also mentioned that they receive messages on WhatsApp informing them about breastfeeding. Some women recalled seeing videos specific to prelacteal feeding on mobile phones, specifically recommending that honey should not be fed to the newborns. Some women also mentioned seeing COVID-19 vaccine related information on Facebook.

Women also recalled receiving information about anemia, appropriate breastfeeding, and complementary feeding practices through posters at hospitals and Anganwadi centers, or through the pamphlets distributed to their home. Moreover, the *Mamta* cards distributed by AWWs also notified women about the different recommended vaccines for children.

Clearly, women get their information from diverse sources calling for multi-channel strategies where interpersonal communication sources are complemented by mass media and social media.

Information Sources (Other)

Overall, pregnant women and lactating mothers reach out to community health workers such as ASHA and Anganwadi workers or their doctors for health-related information. Especially when women need information about breastfeeding practices such as benefits of early initiation of breastfeeding, exclusive breastfeeding for six months, complementary feeding, and breastmilk in general, doctors, ASHAs, AWWs are their most trusted sources. Women (in Gujarat) also mentioned that they can go to health centers every Monday while they are pregnant to consult a nurse or AWWs. In addition to receiving health related information from CHWs/ ASHA/ AWWs, women also get advice on which hospitals to go to and what medicines to take. CHWs and doctors also give them advice around eating or avoiding certain foods during pregnancy and maintaining general hygiene and sanitation. They educate women about anemia and suggest them to get tested for anemia, if needed, and consume iron and folic acid supplements. When women said they were informed about colostrum and its benefits by doctors and nurses, they had a more positive attitude towards colostrum. A few women, however, mentioned that their CHWs gave them generic information about breastfeeding such as EBF but did not put any emphasis on the benefits of colostrum. Doctors, nurses and CHWs were also the trusted sources for pregnancy and childhood vaccine related information.

Apart from doctors, nurses and CHWs, pregnant women and lactating mothers also trusted their family members like mothers-in-law, mothers, sisters, and husbands for health-related information. Family members, especially those with experience, are also relied on for information regarding appropriate diet during pregnancy, anemia, appropriate breastfeeding, and complementary practices. When women learnt about colostrum mainly from family members (in Uttar Pradesh) like mothers and elders, they were not aware of its benefits. Hence, some women discarded it or performed traditions around '*kheen*', which emphasizes discarding colostrum followed by cleaning of breasts before feeding the child. Women also considered the advice and experiences of their neighbors, especially in the case of COVID-19 vaccines.

Cultural markers and community events

In general, traditions and customs related to pregnancy seemed to be informed by the family and religious community, with family elders, religious figures, and places of worship playing important roles in traditional events, rituals, and ceremonies. Family elders' opinions were also held in high regard when it came to restrictions during pregnancy. Across the states, the women discussed similar restrictions on diet and physical exertion. While the main driver for following these restrictions appeared to be a fear of causing harm to the child if these restrictions were not adhered to, the women also mentioned positive feelings of acceptance towards the restrictions, precisely because they believed these restrictions prevented harm to the child and themselves. Regarding breastfeeding, the women displayed awareness that certain older feeding practices from older generations were outdated and not beneficial for the child. However, gaps in knowledge and practice were highlighted, particularly in discussions regarding feeding goat's milk as an alternative to breastmilk, feeding colostrum to the child, and pre-lacteal feeding customs.

Cultural and community events were practiced and widely attended in all the states. Factors such as economic backgrounds, sex of the child, religious community, caste, and access to healthcare and resources, were found to influence care-seeking behaviors and customs – this may inform the dissemination of key messages and message framing. In some cases, women did not attend or were not aware of key traditional events related to nutrition, which may indicate a gap in access to knowledge, resources, and community networks.

Strengths and limitations

As with any study, the results must be taken as a function of the strengths and limitations. We note the following limitations:

- The current set of findings represent the perspectives of only the pregnant women and lactating mothers. We also conducted focus group discussions with family influencers and community health workers, and these will be analyzed and reported as a follow-up to this interim report.
- The moderator quality in our focus group discussions varied across the different states. This could have potentially influenced the information received from the participants.
- The findings and insights are based on translated English transcripts from audio recordings of discussions that were conducted in Hindi, Assamese, and Gujarati. There are multiple levels where information could have been misconstrued.
- In focus groups, participants can present answers in line with what they believe to be socially acceptable by peers and moderators. This is referred to as the social desirability bias. For example, in the context of our focus groups, participants may falsely claim to be practicing the 'recommended or socially acceptable behaviors'.

On the other hand, the study has important strengths that outweigh the limitations:

- While existing literature mostly focuses on interventions and outcomes, we focused explicitly on understanding the socio-cultural beliefs and drivers for optimal nutrition behaviors that can help advance *POSHAN Abhiyaan*, and their various information sources.
- Our team's experience and our continuous consultations with the Ministry of Women and Child Development, along with the guidance from the team at Bill and Melinda Gates Foundation, decreased the risk of biased analysis.
- The study leveraged a diversity of perspectives and analyzes the beliefs and practices of pregnant women and mothers, to inform policy and practice recommendations that will directly benefit them.

Implications for practice and policy

Overarching Recommendations

SBBC messaging to bridge the intention-behavior gap

- Considering that many women reported having knowledge about the recommended infant and young child feeding (IYCF) practices, yet for some there was a gap in translating the intention to behavior. Hence, AWWs should be trained on identifying individual barriers like resource constraints and lack of community networks, and accordingly customizing their messaging and support to relevant communities.
- Television has been shown to be an equalizer for information dissemination particularly for IYCF practices (as shown in Phase I report). Based on focus groups, many women reported watching advertisements or broadcasts about breastfeeding and other practices, however they did not recall the actual content. This makes the case for increasing the frequency and outreach of messaging through television, particularly on those networks that are most accessible to the vulnerable populations.
- Anganwadi Workers should be trained on using “Peer Modeling” of women with experience of pregnancy or child raising, and those that follow recommended practices to disseminate information amongst mother groups and family members.
- While many women had positive perceptions on physical restrictions like not lifting heavy weight during pregnancy, inter-personal counselling by AWWs can also deliver balanced messaging on the need for keeping the body active and fit, with light exercises like yoga which may be beneficial for overall health.
- Interpersonal counselling by AWWs should be supplemented by interpersonal counseling by peer-messengers identified within the community.

Inter-personal Counselling by AWWs

- Training of Anganwadi Workers on enhancing their skills for inter-personal counselling and with special emphasis on identifying individual and community barriers to the adoption of recommended practices such as IFA compliance, and breastfeeding/ complementary feeding practices.
- AWWs to be encouraged to provide evidence-based messages on IYCF with a particular focus on avoidance of pre-lacteal feeds and benefits of colostrum. Counselling of women at the time of child delivery and partnering with ASHA workers can provide time sensitive guidance on early initiation of breastfeeding and benefits of colostrum for child’s health. To facilitate the same, dedicated scripts can be created for AWWs, ASHAs, nurses and doctors (present at time of delivery) to identify variable beliefs/notions and to counsel both mother and family at the time of delivery to address these proximate behaviors.
- Since many women reported the role of family members on influencing their health and nutrition choices, AWWs can undertake targeted counselling of mother in-laws, husbands, sisters, and elderly members of the family.
- AWWs can be trained on tailoring of IYCF messages based on diverse backgrounds of target audiences including, economic backgrounds, sex of the child, religious community, caste, and access to healthcare and resources

Community Events

- Given that pregnant women particularly value fixed days for *Mamta Divas* as an opportunity to consult with the CHWs, Integrated Child Development Services (ICDS) program officers can

particularly ensure hosting such events on a regular frequency. Additionally, ICDS program officers can encourage development of mother groups to trigger peer modelling of evidence-based practices.

- Drawing from the priority *Jan Andolan* themes, IYCF messaging can be linked to major community events as below-
 1. *Godhbharai*/ Baby shower events for information on breastfeeding and nutrition
 2. *Annaprashan* for information on complementary feeding and dietary diversity
 3. *Mamta Diwas* for information on immunization and anemia prevention
- The community events should also be adapted to local context by incorporating local customs and traditions. Knowledge about the community events should be spread across the community through different social networks.

Cultural Markers

- Cultural markers and community events could be used to channel specific messaging. Current research highlighted that women felt that community events by themselves are not a source of knowledge. They mostly revolve around food distributions, some photo opportunities and then the women leave without an exchange of information. Hence AWWs can be sensitized further on the need for providing nutrition education to pregnant women during various community events like *Godhbharai*, *Annaprashan* and other local customary traditions related to childbirth.
- Given that many women indicated a lack of cultural connect with the names of popular community events, these can be renamed to match locally prevalent rituals such as *Godhbharai* to *Shreemant* or *Annaprashan* to *Anuprastha Sanskar* in Gujarat.
- Additionally, places of worship that children and family members attend to conduct traditions or rituals (such as *Hajul Mundan/ Chhathi*) could serve as locations for message dissemination.

Mass media

- Considering that many women recalled IYCF messages from television advertisements, *POSHAN Abhiyaan* led SBCC strategy can increase the frequency of messages disseminated on mass media sources such as television and radio to increase exposure and retention. TV can be particularly used to target women who may have difficulty in reading and understanding messages disseminated through posters, pamphlets, and newspapers.
- Creatively re-structuring messages, possibly through storytelling to make women more receptive to them. Some examples could be entertaining videos or soap operas.
- Women in Assam recalled information they received through *Kilkar*⁸, a mobile health education service that provides pregnant women, new mothers, and their families with timely, accessible, accurate and relevant information about Reproductive, Maternal, Neonatal and Child health. Similar mobile health education programs can be promoted to increase the uptake of recommended IYCF practices and consumption of diverse diets in other states as well.

Social Media

- Considering most women trusted social media as a reliable source of information, *POSHAN Abhiyaan* may dedicate part of their campaign to focus on creating WhatsApp messages, Facebook, and YouTube Videos in local languages to promote uptake of recommended IYCF practices and consumption of diverse diets.
- Disseminate digital messages on dietary requirements for pregnant women and evidence-based child feeding practices to husbands since they are the primary owners of mobile phones.
- We recommend a multi-media strategy where each medium - mass, interpersonal and social media – complements each other, and messages are reinforced across media.

8. <https://www.armman.org/kilkari/>

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Knowledge

Women demonstrated an understanding of the dietary requirements during pregnancy and the importance of consuming iron rich foods for anemia prevention.

Many women reported diverse dietary restrictions during pregnancy including opinions on consumption of papaya, pineapple, banana and spices and possible linkages with miscarriage.

Some women highlighted that they were not aware of community events like *Godhbharai* being conducted in their community, possibly highlighting lack of social networks. Moreover, they expressed an intention to attend such community events, in case they were informed in advance.

Messaging

POSHAN Abhiyaan should prioritize training of AWWs on messaging to reinforce anemia prevention and iron and folic acid (IFA) compliance by pregnant women.

Given the awareness-practice gap, AWWs should promote uptake of methods to improve adherence for IFA consumption. They can also help in building a network of support within the family to improve IFA compliance amongst pregnant women.

In addition to the focus on anemia, AWWs should give equal emphasis to spreading awareness about the dietary requirements for women during pregnancy. This can also include counselling by AWWs to address the prevalent myths about foods that are safe for consumption during pregnancy.

Dietary Diversity and Anemia in pregnant women

Practices

While most women confirmed access to IFA tablets in Anganwadi Centers (AWCs), few confirmed their actual consumption or details on compliance.

Some women suggested that healthy foods be made more accessible at AWCs, especially during their pregnancy.

Messaging

Skill-based training should also be imparted to community health workers for identifying individual barriers to IFA compliance, through inter-personal communication.

For future enquiry, Ministry of Women and Child Development could also undertake primary research to unbundle the different barriers that women face in ensuring IFA compliance.

Target Audiences

Counseling for family members, especially husbands on recommended dietary changes and importance of IFA compliance.

Practices

While most reported that cultural practices like *Godhbharai* and *Annaprashan* are hosted in AWCs, women from select states pointed towards the need for recognizing and celebrating other diverse traditions related to pregnancy that were common in their area. For example, women in Assam spoke about the tradition of celebrating "Swad"/baby shower at the seventh month of pregnancy.

Platforms

State-level *POSHAN Abhiyaan* units can undertake identification of regional customs and traditions that can be used as cultural platforms to promote evidence-based messaging on nutrition and dietary requirements. These regional customs can also be incorporated into existing community events such as *Godhbharai* and *Annaprashan*.

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Dietary Diversity and Anemia in pregnant women

Practices

Some women reported that during *Godhbharai* events held at schools and AWCs, while they received fruits, vegetables and sweets- they were not given any guidance on nutrition and dietary requirements during pregnancy.

Target Audiences

Trainings for AWWs can reiterate the need to impart nutrition education and counseling in culturally inspired community events such as *Godhbharai* and amplify such events in the local community.

Information Sources

While women acknowledged that they have been exposed to multi-modal messaging around anemia, including face-to-face communication with health workers and family members, paper pamphlets, TV ads, mobile videos amongst others; they did not recall any TV ads around diet needs during pregnancy, barring some mobile videos.

Platforms

Similar to Anemia, messages on dietary requirements during pregnancy can be disseminated across various mass media platforms such as television and radio, and social media platforms such as WhatsApp coupled with inter-personal counselling by AWCs. Many studies and our findings have reinforced the importance of counselling by CHWs as a critical source of information and persuasion.

Early Initiation of Breastfeeding and Exclusive Breastfeeding

Knowledge

Women's ideas on colostrum varied across different communities with many not aware of the nutritional benefits of colostrum for babies.

Traditional knowledge of colostrum focused on the 'first milk' as harmful for babies.

They also mentioned that while health workers gave them information on early initiation of breastfeeding, they did not emphasize the importance of colostrum.

Messaging

POSHAN Abhiyaan should prioritize messaging that can address the varied beliefs/notions amongst pregnant women, around the need for and importance of colostrum.

While training of AWWs can focus on going beyond generic messaging on breastfeeding, we can look to onboard doctors and healthcare staff present at the time of delivery for targeted messaging on the importance of colostrum.

AWWs should be trained on promotion of exclusive breastfeeding and promotion of mother's milk as the "sweetest milk", thus highlighting the need for exclusive consumption of mother's milk up till six months.

Knowledge

While women understood the importance of exclusive breastfeeding, there were gaps in knowledge pertaining to frequency and duration of optimum breastfeeding of children.

Messaging

Skill-based training can be undertaken for AWWs to identify barriers for breastfeeding amongst the women, and to mitigate anxiety related to breastmilk adequacy.

Target Audiences

Inter-personal counselling to target first time and young mothers on early initiation of breastfeeding, importance of feeding colostrum and exclusive breastfeeding for six months.

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Attitude

Some women indicated having a positive attitude towards colostrum, after receiving advice from the doctor.

Target Audiences

Inter-personal counselling to target first time and young mothers on early initiation of breastfeeding, importance of feeding colostrum and exclusive breastfeeding for six months.

Additionally, to target secondary audiences like mother-in laws and other women in the family, considering the level of influence they have on pregnant women in households, and to dispel any myths/ superstitions prevalent in the community.

Early Initiation of Breastfeeding and Exclusive Breastfeeding

Attitude

Some women said that they knew about the importance of exclusive breastfeeding, yet they were comfortable feeding the newborns with jaggery water, owing to related aspirations and customs around making children's words "sweet."

Messaging

AWWs should be trained on promotion of exclusive breastfeeding and promotion of mother's milk as the "sweetest milk", thus highlighting the need for exclusive consumption of mother's milk up till six months.

Practices

Many women reported the practice of discarding colostrum or first milk in some regions, with many reporting the removal and discarding of colostrum, and cleaning the breast with salt and water before feeding their child, as a customary/ traditional practice.

Some also reported the practice of providing pre-lacteal feeds like sugar, honey or gripe water as opposed to early initiation of breastfeeding and exclusive breastfeeding.

Messaging

POSHAN Abhiyaan should prioritize messaging that can address the varied beliefs/notions amongst pregnant women, around the need for and importance of colostrum.

Platforms

Given that many women considered social media to be a reliable and easy source of information on breastfeeding practices, greater attention can be given to the targeted use of social media platforms like WhatsApp, YouTube, and Facebook for dissemination of evidence-based guidelines on optimum breastfeeding.

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Complementary Feeding

Attitudes

In some cases, women reported the influence of family members on initiating complementary feeding before six months. But at the same time, they also mentioned verifying such guidance with the AWWs and ASHAs, who advise them to start complementary feeding only after six months.

Practices

Feeding formula milk, biscuits, gripe water or cow's milk to children less than six months, by women who were anxious about the insufficiency of their breastmilk. Use of formula milk was also indicated by pregnant women who felt that their child was "hungry" or upon a doctor's advice. Also, some women reported shifting to formula milk in case they had taken the COVID-19 vaccine.

Many women from the three states, highlighted how they had different customs to initiate complementary feeding such as *Annaprashan*.

Information Sources

Most women received information on complementary feeding through various channels though some particularly highlighted that they received phone calls from AWWs when their child turned six months, thus explaining the next steps on complementary feeding.

Messaging

Anganwadi Workers should be trained to reinforce the messaging around the "right time" for initiating complementary feeding, and to discourage feeding formula milk, biscuits, or other substitutes to children less than six months.

Interpersonal Counselling to particularly focus on identifying and addressing myths around early initiation of complementary feedings, especially if a mother has a sense of insufficiency of breastmilk for the growth of her child, or if a mother has taken a COVID-19 vaccine.

Target Audiences

Given the trust that women repose in health workers or doctors, Jan Andolan program to target AWWs and doctors for promoting evidence-based messaging on complementary feeding.

Targeted information for family members who can help with preparation and feeding of complementary feeds.

Platforms

POSHAN Abhiyaan should promote the use of mobile phones amongst AWWs, as a tool for sending reminders to young mothers on the "right timing" for initiation of complimentary feeding. Such interventions should be clubbed with a greater assessment on behalf of the Ministry, to assess the extent of women ownership or use of mobile phones, especially amongst the vulnerable population groups.

Additionally, more studies need to be undertaken to understand the extent of social media penetration amongst pregnant and lactating mothers. Accordingly, these platforms can be used to deliver evidence-based messages on appropriate feeding practices.

Jan Andolan Themes

Gaps in Knowledge, Attitude, Practices (KAP) and Sources of Information (Media)

Strategic SBCC Recommendations for Ministry of Women and Child Development's Jan Andolan program (Messaging, Audience, Platforms)

Immunization

Knowledge

While women knew about the importance of COVID-19 vaccination to prevent infections, there was a consistent knowledge gap around the impact of COVID-19 vaccines on pregnant women.

Women knew about the benefits and the side effects of existing vaccines given during pregnancy and childhood to prevent diseases such as Tetanus, Polio, etc., and they were aware that the benefits outweigh the risks.

Beliefs

Women held a negative opinion about the ill effects of vaccination for breastfeeding mothers.

Women were particularly worried about perceived adverse effects of vaccination like death and miscarriage with newer COVID-19 vaccines. In some cases, they reported consulting with the doctor for guidance, but also mentioned mixed messaging from AWWs. Some women also expressed confusion about the safety of vaccines for pregnant women.

Despite the concerns with new vaccines, women expressed trust in existing vaccines against common childhood diseases.

Practices

Most mothers reported not getting vaccinated against COVID-19, especially if they were lactating.

However, women said they continued to get themselves and their children vaccinated as per the existing immunization schedule.

Information Sources

While many women recalled receiving information on vaccination for children through posters in government hospitals and *Mamta* cards, and the television, some women expressed difficulty in reading posters based on their literacy level.

Messaging

Similar to messaging for pregnancy and childhood vaccines, *POSHAN Abhiyaan* should continue to provide evidence-based messaging on COVID-19 vaccination for pregnant and lactating women. Updated information and guidelines should also be provided to healthcare providers and community health workers to prevent any discordant messaging.

Such efforts should also address the extent of exposure to messaging on COVID-19 vaccination, given some women reported message fatigue.

Target Audiences

During inter-personal counselling, AWWs could particularly focus on addressing the myths around safety of vaccination for lactating mothers. Focus should also be placed on evidence-based messaging to demonstrate that the benefits outweigh the risks.

Target Audiences

During inter-personal counselling, AWWs should particularly focus on addressing the myths around safety of vaccination for lactating mothers.

Platforms

While women reported to have been exposed to a high frequency of messages on COVID-19 on TV and social media. *POSHAN Abhiyaan* should also use these platforms for dissemination of messages on promotion of child vaccination.

Additionally, use of text heavy posters and graphics should be carefully considered, given that many mothers reported inability to read and recall the messages. Verbal and video messaging can be developed to mitigate these issues.

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