

# Nutrition Practices in Bihar

## Results of a Formative Research Study



A pregnant woman receives nutrition counseling and gifts during a community celebration

Conducted before and during an intervention, formative research ensures programs are designed—and refined—based on current realities of those affected. These findings are the result of a partnership between Alive & Thrive and the Center for Media Studies, who worked with local doctors, officials, frontline workers, pregnant women, mothers, families and community members in Bihar.

We learned that mothers are willing and able to eat more meals and more locally available food groups during pregnancy. Small research trials indicate that adequate counseling and support can affect breastfeeding practices. However, a greater challenge may be improving complementary feeding (from age six months to two years) and handwashing with soap before cooking and feeding. Researchers also found that motivating family members and frontline workers to better support pregnant women and mothers of young children could protect Bihar's next generation during the critical first 1,000 days of life.

## BACKGROUND

The importance of household nutrition practices in preventing maternal and child mortality, morbidity, and undernutrition is well established in global literature (Lancet 2013, Lancet 2016). There is clear evidence that large-scale improvements in nutrition practices are possible. Recently, infant and young child feeding (IYCF) programs have shown that evidence-based comprehensive programs can produce results within a few years (Menon et al 2015, Sanghvi et al 2016).

In Bihar, one of the most populated states in India (population of 104 million), roughly one in two children (48%) under the age of 5 years are stunted (NFHS 4, 2015). While there have been significant improvements in maternal and child health and nutrition indicators in the last decade, maternal, infant and young child feeding practices remain sub-optimal: only 7% of children under 2 years of age receive an adequate diet and only half are exclusively breastfed (NFHS 4, 2015). The Government of Bihar has been proactive in developing a State Nutrition Policy under the Manav

Vikas Mission, and with the Department of Social Welfare has been working on implementing the policy with the participation of a number of development partners. In 2014, a statewide campaign called *Bal Kuposhan Mukh Bihar* was launched to address child undernutrition in the state. One objective of the campaign was to draw attention to key high-impact nutrition related behaviors around maternal, infant, and young child nutrition (MIYCN).

## STUDY DESIGN AND PURPOSE

From May through October 2015, Alive & Thrive conducted formative research in Bihar to better understand the barriers and facilitators to adopting optimal MIYCN practices and behaviors at the household level.

Specifically, this study aimed to: advance the understanding of how various cultural factors and social norms enable or inhibit optimal MIYCN practices at the local level, and to identify key messages to focus on in designing new programs. The

findings from this study illustrate current MIYCN practices and their determinants, identify key influential groups and “small doable actions” that mothers can take to improve behaviors, and provide information on program platforms and media channels that can be used to reach priority groups and incite change (CMS and Alive & Thrive, 2015).

The research was conducted in six districts of Bhojpur, Gaya, Gopalganj, Patna, Purnea, and Saharsa, from May through October 2015. The districts were selected to represent different socioeconomic, cultural, and geographical differences in the state (districts shown in



Figure 1. Location of Formative Research Sites

Figure 1). Qualitative and quantitative methods were used, including in-depth interviews, small group discussions, observations, and a set of rapid household trials to test recommended ‘small do-able actions’ for mothers. The Trials of Improved Practices (TIPs) helped: to determine the acceptability of recommendations, and obtain information needed to modify the recommendations or make them more feasible for maternal and infant dietary practices.

A&T selected to study the following behaviors, based on their association with nutritional status, child and maternal mortality and morbidity, and low prevalence in Bihar:

- **Maternal nutrition:** Consumption of iron and folic acid (IFA) tablets, and dietary diversity (intake of specified nutrient-rich food varieties) in pregnant women.
- **Breastfeeding:** Early initiation of breastfeeding (within one hour of birth), use of prelacteals (food given before breastfeeding), exclusive breastfeeding (no water, other liquid, or foods for the first six months)
- **Complementary feeding:** Introduction of semi-solid and solid foods, meal frequency, quantity, and dietary diversity (intake of defined nutrient-rich food varieties) in mothers of children between 6-18 months of age.
- **Sanitation and hygiene:** Washing hands with soap at critical times (before cooking and feeding the child, and after disposal of child’s feces).

In-depth interviews and focus group discussions were conducted with pregnant women and lactating mothers of children 0-6 months old and 6-11 months old;

husbands of pregnant women; fathers and grandmothers of children 0-18 months old; frontline workers of the Integrated Child Development Scheme and health programs, such as the Anganwadi Worker (AWW), Accredited Social Health Activist (ASHAs) and Saheli (SHG group leaders); Registered Medical Practitioners (RMP), Child Development Project Officer (CDPO); Auxiliary Nurse Midwives (ANM); and Lady Supervisors.

For Trials of Improved Practices, respondents were selected in the same six districts across five categories: pregnant women, mothers of children 0-6 months, mothers of children 6-8 months, mothers of children 9-11 months, and mothers of children 12-18 months.

## FINDINGS

### MATERNAL NUTRITION

The findings from our research illustrate a lack of knowledge among pregnant women and caregivers on dietary needs, including the recommended frequency and quantity of food before, during and after pregnancy. We also found low adherence to IFA consumption due to poor awareness of its benefits during pregnancy, the availability of these supplements, and misconceptions regarding the side effects of these tablets. The availability of free IFA tablets through the public distribution system was inadequate, although several brands of IFA tablets and syrups appear to be available in the market and at reasonable prices.

Our research indicates that on average, women eat three meals a day, typically consisting of *roti*, *daal*, *chawal*, and vegetable curry. There were reported changes in the order of eating once a woman got married, namely that she eats last and fewer times per day.

While women know that it is necessary to eat more during pregnancy and lactation, additional food consumption remains sub-optimal. These behaviors are influenced by social norms and traditional practices that suggest mothers should eat last, eat special food for a week after delivery (such as *halwa*, a sweet prepared with dry fruits, turmeric milk, etc.), and avoid certain salty, cold, and sour foods for 21 days after delivery.

### CONSUMPTION OF IRON AND FOLIC ACID (IFA)

Knowledge about the benefits of IFA tablets was minimal, and consumption was even lower. Most respondents who were aware of the importance of consuming IFA during pregnancy did not know about its benefits on the baby’s birth weight or prematurity, and only believed the tablets were good for making them less tired.

Most women cited unavailability and erratic supply of tablets at the health center as the most common reasons for not consuming IFA tablets during pregnancy. Reported side effects, including vomiting, constipation, and nausea (perceived, experienced, and heard from others) as well as a myth that IFA tablets may cause miscarriages, are poisonous, and result in dark complexion of the newborn were also frequently noted as reasons for their low consumption.

## INFLUENTIAL ACTORS

- **Husbands and mothers-in-law:** Most husbands and mothers-in-law were unaware of why IFA was prescribed during pregnancy; very few were aware of its relation to anemia, and did not know about its complete significance.
- **Anganwadi Workers and ASHAs:** The majority of frontline workers highlighted the unavailability of IFA tablets, and misconceptions regarding its side effects.
- **Auxiliary Nurse Midwives (ANMs):** ANMs reported low IFA consumption even when the supply was adequate, and suggested incorporating activities such as street plays and showing videos in the communication strategy.
- **Registered Medical Practitioners:** The majority of RMPs know about IFA and its benefits, and about 25% of them are willing to stock, prescribe, and counsel about IFA intake.
- **Sahelis (SHG leaders):** Sahelis suggested promoting IFAs as part of discussions about diet during pregnancy and IFA intake during weekly meetings.



*Dietary diversity for pregnant women is a priority behavior*

Most of the women were able to comply with these recommended practices, particularly in increasing food intake and adding green leafy vegetables to their diets. These changes in behaviours illustrate that awareness, information and counseling can lead to better adoption of practices; however, many women found it difficult to comply with the recommendation of resting during the day due to their large workload.

## MATERNAL DIET

Strong social and cultural taboos and norms are associated with women's dietary practices during pregnancy and the lactation period. Social norms dictate that men eat first and consume larger portions of foods, followed by children, elders, and finally women. Mothers-in-law are the primary caregivers for most women during pregnancy and provide advice on foods she should or should not eat during pregnancy and in the postpartum period. A number of food restrictions are imposed on the woman by elders, especially the mother-in-law for example she is counseled not to consume meat and other non-vegetarian foods during pregnancy. In addition, women are counseled to eat less during pregnancy.

In general, the role of husbands was found to be limited during pregnancy and lactation. While men are responsible for purchasing food, the study found that the mothers-in-law decide what is to be cooked and bought in household. Men reported that their role during pregnancy was secondary to their mothers. Interestingly in nuclear families, men reported supporting their wives with household chores and accompanying them to antenatal care (ANC) visits.

Overall, no special foods were consumed by women during pregnancy unless specially advised by a doctor, as reported in Gopalgunj. In Bhojpur, women reported eating less throughout pregnancy because of a loss of appetite and nausea.

### DURING THE TIPS, PREGNANT WOMEN WERE ASKED TO TRY THE FOLLOWING PRACTICES:

- Increase food intake
- Eat at least one additional meal a day
- Add green leafy vegetables other vegetables and fruits everyday to your diet
- Add animal source foods to your diet
- Consume iodized salt only
- Take adequate rest

### Facilitators/motivators to adopting new practices

- Increased awareness of the importance of eating a more diverse diet led to letting go of previous apprehensions towards certain foods during pregnancy
- Family members supported the mothers by reminding them to eat the recommended foods and quantities, and by buying fruits and eggs from the market
- Awareness of inter-dependence between a mother's and child's health
- Improved personal health after following the recommendations

### Obstacles to adopting new practices

- Loss of appetite
- Busy schedule led to inadequate rest
- Absence of male members hindered procuring special items from the market (eggs/ fruits/ Green Leafy Vegetables (GLV))
- Distance to the market from villages
- Recommended food items were unaffordable (*Ghee*)
- Recommended frequency of eating was not followed because food is cooked only twice, and not separately, in joint families

## BREASTFEEDING

### INITIATION OF BREASTFEEDING

More than half of the mothers in Gaya, Gopalganj, and Saharsa reported initiating breastfeeding within one hour of delivery. This finding also corresponds to LQAS 2014 data (6-monthly data on health and nutrition indicators collected

by CARE, Bihar): Saharsa – 72%, Gaya – 59%, Gopalganj – 58%. However, the motivating factors for early initiation of breastfeeding varied. For those respondents who had undergone institutional deliveries, advice given by doctors or nurses was the primary factor for early initiation. Other factors include awareness generated through FLWs and advice by mothers, mothers-in-law and sisters-in-law.

While more than half of mothers in the three forementioned districts initiated breastfeeding within one hour of delivery, the overall rate of early initiation for breastfeeding from across the six study districts was low. Our findings show that a lack of awareness about early initiation, as well as certain religious factors, played a role in preventing early initiation. The majority of women interviewed did not seem to have an understanding on how breastmilk is produced and how much breastmilk a child needs immediately after birth.

Our research also found differences in practices by ethnic groups and by geography. More respondents from Gopalganj, Gaya, and Saharsa states reported timely initiation of breastfeeding as compared to women respondents from Bhojpur, Patna and Purnea.

Late initiation of breastfeeding, ranging from a delay of two to three hours to two to three days, was reported in Bhojpur, Patna and Purnea. Most women reported delayed milk secretion as the main reasons for late initiation. A few mothers also said that it takes time for mothers to regain strength after delivery. In cases where a mother was unable to feed the child, respondents reported giving substitutes for breastmilk. The most common substitutes reported were cow's milk diluted in water, goat's milk (in Bhojpur, Gopalganj and Saharsa), wet nursing (Purnea and Bhojpur) and formula milk with the advice of doctor (Lactogen 1 in Patna).

Women's knowledge about milk production and breastfeeding practices varied across the different districts:

- Most respondents reported that production of breastmilk starts after delivery; a few respondents from Gaya and Patna did report that milk formation starts during pregnancy itself.
- When asked how breastmilk is produced, most of the respondents associated it with the mother's diet (i.e. an increased intake of nutritious food leads to better milk production), although some also reported that the production of breastmilk is a natural process. Only a few respondents were able to say that milk production is stimulated when a child suckles.
- Very few women were able to correctly estimate how small their newborn's stomach was, and frequently mentioned that they did not produce enough milk to satisfy their newborn's requirements.

“*Agar 2 se 3 din ke bacche ka pet nimbu ke jitna bada hota hai, toh use 2-3 chammach maa ka dudh ki zarurat hoti hogi, humein itna pata nahin chalta hai.*”  
(Assuming a 2-3 day old baby's stomach size is that of lemon then it would require 2-3 spoons of milk; though I am not very sure about it) – Mother of child, Purnea

## PRELACTEAL FEEDING

Our study found that prelacteal foods were given predominantly by family members, such as the mother-in-law and the sister-in-law; new mothers were often not the decision makers. Reasons for providing prelacteal foods include the perception that breastmilk is not formed immediately after birth, and traditional beliefs and misperceptions that sugar water and honey cleanse a baby's throat and quench their thirst after delivery.

### Commonly given prelacteals

- Water, sugar water (traditional practice)
- Honey (viewed as a cleanser)
- *Kulla Dena* (custom in some communities, whereby any elder in the family gargles water and pours it on the baby's mouth)

It is interesting to note that prelacteal feeding was not the norm in all districts. In Gaya, women and men reported that they do provide their children with prelacteals, based on the advice from doctors, nurses, and other frontline workers.

More than half of the respondents stated that a child should be breastfed exclusively for the first six months; however, the practice of giving children water, especially in the summer, was widespread in the study areas. Almost all the women interviewed believed that their infant needed water to quench his/her thirst.

“*Bachchhe ko 6 mahine tak sirf maa ka hi dudh pilana chahiye usi me sabhi poshak tatvo hote hain, lekin garmi ki mausam mein thoda thoda pani bhi deti hooni.*”  
(For 6 months, the baby should be exclusively breastfed as it is good for baby's health, however, during hot summer days I give water too) – Mothers, Saharsa.

Respondents were confused regarding the duration of exclusive breastfeeding – whether it is exclusive until the beginning of six months, or until their baby completes six months, and very few women were able to express this as a number of days (180 days of exclusive breastfeeding).

Most mothers reported that they breastfed their child on demand (i.e. to a baby's cries); a few mothers noted that they feed their child when they feel heaviness in their breasts. Very few mothers follow a particular time (feeding) schedule.

Mothers reported switching breasts only when the child needs more milk, otherwise they reported putting the child to one breast until it is empty, and then switching to the other breast.

Mothers reported that a child falling asleep or withdrawing from the breast are the common cues signaling that the child's stomach is full.

## BREASTFEEDING DURING ILLNESS

The findings showed that most mothers breastfeed less when their child is sick; however, when the mother is sick the child is fed as usual (provided that the mother is not severely ill). A few respondents reported that they reduce breastfeeding in all instances of maternal illness, as they feared that their child might also become sick.

When asked about the challenges they faced with exclusive breastfeeding, mothers reported stinging pain and engorgement (*Thaneila*) in the breasts. Women sought home remedies and advice of family members, particularly their mothers-in-law, to get relief from such problems; very few women reported seeking advice from health workers. Expressing milk and applying a hot compress on breasts were common remedies.

## CONTINUED BREASTFEEDING

Most mothers felt that their child should be breastfed until 2-3 years of age; however, short birth intervals interrupt this practice, as a mother typically stops breastfeeding when she became pregnant again. The study revealed a discrepancy in breastfeeding boys and girls among some communities in Gaya, Patna and Gopalganj, where reportedly, daughters are breastfed until 1.5 years old, while sons are breastfed until 2 years old.

## ROLE OF FATHERS AND MOTHERS-IN-LAW

Fathers are rarely present at the time of delivery and are mostly unaware about the critical window of opportunity when breastfeeding is most impactful. More than half of mothers-in-law are aware of the optimal time for initiation (within one hour of birth), although many reported giving prelacteals before initiating breastmilk. Mothers-in-law emerged as the major decision maker on matters pertinent to initiation of breastfeeding, breastfeeding practices, and addressing problems during feeding.

Knowledge among fathers about good child growth and development was limited; good growth to most fathers is illustrated by a happy and healthy child who eats well, plays and cries less. Weight or height with respect to age of the child were also factors that a few fathers associated with good growth and development.

## DURING THE TIPs, WOMEN WERE ASKED TO PRACTICE THE FOLLOWING BEHAVIORS:

- Stop giving water/cow's milk if the child is younger than 6 months.
- When breastfeeding, empty one breast before switching over to the other.
- Practice proper positioning and attachment while breastfeeding.
- Continue to breastfeed up to 24 months of age.

More than half of the participants followed the recommended practice of exclusive breastfeeding and waited until one breast was empty before switching. However, very few mothers adopted the recommended behavior of holding the baby, as they did not remember the recommendation.

Facilitators/motivators to adopting new practices	Obstacles to adopting new practices
<ul style="list-style-type: none"><li>• Exclusive breastfeeding: Mothers are aware of the ill-effects of giving anything besides breastmilk</li><li>• Switching breasts: Mothers are aware of benefits related to child's health</li><li>• Grandmothers were counseled on the correct method, including positioning for breastfeeding</li><li>• Mothers and caregivers understand the benefits of exclusive breastfeeding, as well as the health risks associated with giving untreated water and prelacteals</li></ul>	<ul style="list-style-type: none"><li>• Time constraints and busy schedule led to inadequate rest</li><li>• Perceived fear of child being thirsty without water</li><li>• Did not remember the recommendations (ex: positioning of baby)</li></ul>

## COMPLEMENTARY FEEDING

### INTRODUCTION OF FEEDING

While discussions with mothers of children 6-11 months across the six districts in Bihar illustrated knowledge regarding the appropriate time to introduce complementary foods, practice of this behavior was not as widely implemented. Both **early introduction (between 4-5 months)** and **late introduction (between 9-10 months)** were reported by mothers interviewed. Reasons quoted for early introduction were: 1) a perceived reduction in breastmilk formation; and 2) the obligation of working mothers to leave the child home for work. Delayed introduction of complementary foods was due to the probability of indigestion and the perception that mother's milk is substantially sufficient for a longer period. Many mothers also reported that they wait for the baby to teeth before introducing semi-solid or solid foods.

In most cases, children prompted the introduction of complementary feeding by grabbing food from plates or pointing their fingers at platters. Also, the understanding that a growing infant requires more food encouraged the early initiation of complementary foods. Group discussions across the study districts suggested that food (*'upari aahar'*) is understood to be what is cooked for the rest of the family (feeding cow's milk diluted with water or biscuits dunked in milk was not considered complementary food).

The decision to introduce complementary foods is largely decided by the family elders, including mothers-in-law, mothers, and sisters-in-law. Neighbors and frontline workers also have a strong influence on deciding the time of introducing of first foods. Anganwadi centers in Patna, Purnea and Gopalganj celebrate *Muh jhuthhi* (known as *annaprashan* in some other parts of the country) to signal the introduction of complementary foods after six months. However, in Bhojpur, children are introduced to *'kheer* (rice pudding)' for that day only, but the practice of complementary feeding is not continued thereon.

## FREQUENCY AND QUANTITY OF FOOD

Findings from the focus group discussions revealed that women had no clear idea about the quantity of food to be given to the child. Most respondents reported giving two to three spoons (*niwala*) of food thrice or 4 times a day.

Most mothers reported that they feed their child using their hands. Very few mothers reported following a particular time schedule for feeding their children; most mothers gauged their child's hunger from their cries. The discussions with mothers also revealed that the introduction of complementary feeding is accompanied by reduced breastfeeding; the most common feeding constraint faced by mothers is the child's unwillingness to eat.

## DIET DIVERSITY

Most women reported feeding their children food cooked in the family kitchen. Myths, such as that cooked vegetables are hot and spicy (*teeta*) and animal protein such as chicken, fish and mutton are indigestible and harmful to the liver, prevent mothers from giving vegetables and animal protein to children, thus, denying the children from getting essential micronutrients that are vital for their growth. When asked about the feasibility of giving half a bowl of food 2-3 times a day, mothers uniformly stated that it would depend on the child's appetite and willingness to eat. Most of them also expressed apprehension that the recommended quantity is too much for a child.

### Common first foods

Biscuits	Cow's milk	Daal ka pani
Cerelac	Khichdi	Starched rice
Aloo chokha	Doodh bhaat/roti	Daal bhaat/roti
Halwa	Dalia	Fruits

In one of the sampled districts, Saharsa, mothers reported feeding their children a variety of food items. They also give their children shell fish, crab meat, and turtles. More than half of respondents from all districts, except Patna, reported having domestic milk animals (cows and goats) in their households. Kitchen gardens are rarely found in the community; many of the Muslim households interviewed were not involved in agriculture, and the Schedule Caste households were predominantly landless. In urban Patna, all food is brought from markets.

Although many of the recommended food items from the food groups are available throughout the year, there is limited diversity in a child's diet due to poor awareness of the importance of food diversity. In addition, easy access and affordability of snacks, such as biscuits and chips, and the child's fondness for snacks contribute to poor complementary feeding practices.

Grandmothers are the primary decision makers on when and what foods infants are fed. The father's role is limited to purchasing snacks as treats; fathers were not found to be active participants in caring for children.

## KNOWLEDGE OF OPTIMAL FEEDING PRACTICES

Both grandmothers and fathers were aware about the optimal timing for introducing complementary foods, however, they were unaware about the quantity of food to feed the child. Regarding the importance of dietary diversity, fathers reported that vegetables and animal protein should be given to children only after a year of their birth. A commonly held belief among grandmothers from some communities is that children should be introduced to eating vegetables and meat only when they show an interest to eat.

## WOMEN WERE ASKED TO PRACTICE THE FOLLOWING COMPLEMENTARY FEEDING BEHAVIORS DURING TIPS

- Introduce complementary foods at 6 months.
- Give children 6-8 months old half a *katori* (bowl) of food twice a day; half *katori* of food thrice a day for children 9-11 months; and one *katori* of food thrice a day for children 12-18 months. The size of the *katori* was specified.
- Children should be fed foods that have three colors (*Tiranga*), such as rice (or *roti*), a yellow lentil, and green leafy vegetables.
- Green leafy vegetables should be given every day.
- Children should be given animal source food items like milk/*ghee*/curd, chicken/chicken liver/eggs/fish every day.
- For mothers of children greater than 6 months, mothers were asked to first offer food instead of breastmilk when the child is hungry, and to continue night breastfeeding.

There was mixed adherence of the recommendations on complementary feeding. Some respondents made modifications to the suggested recipes.

### Modifications made

- Excluded chilies
- Added raisins to "milk, rice & banana"
- Boiled apple in milk with little bit of sugar

### Facilitators/motivators to adopting new practices

- Child liked the food and ate the quantity given
- Increased awareness led to practice
- Child felt satiated for longer periods of time
- Family members supported the behaviors
- Improved child health after following recommendations

### Obstacles to adopting new practices

- Child could not or did not want to eat
- Male members were not around so the mother could not get eggs/fruits/green leafy vegetables
- The distance from villages to market is far
- Recommended food items were not affordable
- Perception that consumption of broiler eggs leads to liver damage
- Feeding milk with bowl and spoon time was time-consuming and cumbersome

## SANITATION AND HYGIENE

The formative research revealed that the practice of handwashing with soap is low in Bihar. Respondents across the districts and quarters reported they use soap for handwashing mainly after defecation. Most do not have a toilet at home; open defecation is a common practice in all the study districts including Patna. Mothers of young children of both age groups (0-6 months and 6-11 months) mentioned that the practice of handwashing with soap is also followed after disposing their child's excreta and after cleaning a child's bottom. The practice of handwashing with soap before cooking is completely absent among all the respondents in all districts.

### AVAILABILITY OF WATER AND SOAP

The study also revealed that there is **no scarcity of water in Bihar**. Most households have a hand pump, which they use as a source of water for all-purposes, including drinking. In very few cases people use a community hand pump for bathing, washing, and to source drinking water. In the households where a hand pump is missing, people store water inside homes.

The study also found that **soap is available in every household**. Respondents primarily use Lifebuoy, Lux and Dettol soap for bathing and handwashing, and buy shampoo pouches for hair wash, and detergents for washing clothes. Almost all respondents use bathing soap for handwashing; very few buy separate soap for handwashing purposes. Soap for handwashing is mostly kept beside the hand pump except in the rainy season.

When asked why they do not use soap for handwashing before cooking or feeding children despite having sufficient water and soap in the household, "laziness and negligence" was stated as the main reasons across districts.

### WOMEN WERE ASKED TO TRY THE FOLLOWING DURING TIPS

- Wash hands with soap and water before cooking and feeding the child.

This recommendation was followed by some, but not all of the respondents.

Facilitators/motivators to adopting new practices	Obstacles to adopting new practices
<ul style="list-style-type: none"><li>• Presence of soap, coupled with extensive counseling on risks and benefits with visual cues</li><li>• Awareness of the interdependency between a mother's and child's health</li><li>• Increased awareness of the significance of washing hands before feeding child and cooking</li></ul>	<ul style="list-style-type: none"><li>• Compliance is self-reported</li><li>• Perception that hands are clean when not handling dirt</li><li>• Perception that washing hands with water is enough</li></ul>

## COMMUNICATION PLATFORMS AND INFORMATION SOURCES

### MOBILE PHONES

Findings from the study showed that the availability of mobile phones is high in rural Bihar, with mobile phones in every household. Women also have access to mobile phones, but very few of these women own a personal mobile. Respondents across the districts and quarters noted that the primary use of mobiles phones is to make and receive calls. Most men and women cannot read or write text messages in English. Some of the fathers reported using mobile phones to listen to music, and in few cases, surfing the internet and watching videos.

Mobile health campaigns, such as Kilkari and Mobile Kunji, were named by ASHAs and ANMs as credible sources of information. Supervisors of FLWs such as the Child Development Protection Officer and the Lady Supervisor also stated that they use mobile phones to seek information on issues relevant to them.

### INTERPERSONAL COMMUNICATION/ FRONTLINE WORKERS

Interpersonal communication (IPC) channels are the most active and trusted sources of communication in all study districts for disseminating information regarding maternal and child nutrition and hygiene practices. Most of the respondents reported that they receive information or advice mainly from elder female family members like mothers-in-law or sisters-in-law. Frontline health workers, such as ASHAs and AWWs, and doctors also provide information and suggestions on various health issues and nutrition practices.

According to the pregnant women and lactating mothers surveyed, mothers-in-law are the most trusted source of information on breastfeeding, complementary feeding, and maternal nutrition (as well as the husbands and fathers). Interestingly, grandmothers and mothers-in-law noted that frontline workers and doctors are the most reliable sources of information for them. Most of the public and private health service providers, reported that IPC is the most reliable source of information for them.

### BROADCAST AND PRINT MEDIA

The diffusion of television and radio in rural areas was low across districts. However, respondents from one of the SC communities in Bhojpur reported that they listen to 'Sakhi Saheli' program in radios given by the government under Mahadalit Vikas Scheme.

Print and other media, such as posters, banners, street plays, and campaigns, are available in all villages in different forms. For example, posters on IFA tablets, healthy and balanced diet for pregnant women and children, polio immunization and HIV/ AIDS were found in most AWCs and health centers. Wall paintings on Save Water, Save Girl child, and Swachh Bharat were seen in every government building in most of the villages. In Purnea and Saharsa, respondents mentioned that they are given booklets containing information on IYCF practices by the anganwadi workers. Respondents from across all the study districts mentioned that "Nukkad Natak" or street plays are staged in their village focusing on various social issues like hand washing, education, and child marriage.

## CONCLUSIONS AND NEXT STEPS

With a greater understanding of the factors influencing nutrition behaviors, a comprehensive social and behavior change (SBC) initiative can be developed to mobilize key participants to improve nutrition. An SBC initiative should be carefully focused and streamlined, based on cultural differences, and implemented with rigor in a sustained, intensified way. Based on this formative research, we recommend focusing on the following priority behaviors:

- **Maternal nutrition:** Encourage IFA and dietary diversity for pregnant women; small do-able actions for mothers include asking FLWs and husbands to procure supplies
- **Early initiation and exclusive breastfeeding:** Small doable actions for mothers include asking family members and health workers (staff nurses and ANMs) attending births to place the newborn child to her breast immediately within the first hour (even for C-section deliveries). Also, she can ask for home visits by health workers and AWWs for counseling and addressing difficulties in breast feeding.
- **Dietary diversity for complementary feeding:** Small do-able actions for mothers include asking fathers to procure specific locally available affordable foods with high nutrient content, instead of unhealthy snacks for children.
- **Handwashing with soap before cooking and feeding children:** Small do-able action for mothers is asking fathers to procure soap and establish handwashing stations near the place of food preparation and feeding, for easy access.

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